

การรับการย้ายตัวดำเนินการ WH ในคำถามเปิดภาษาอังกฤษในฐานะภาษาที่สองของผู้เรียนที่มี
ภาษาไทยเป็นภาษาแรก: กรณีสมมติฐานลักษณะแสดงหน้าที่ที่ล้มเหลว



นายไพโรจน์ คุณานุปถัมภ์

บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)
เป็นแฟ้มข้อมูลของนิสิตเจ้าของวิทยานิพนธ์ ที่ส่งผ่านทางบัณฑิตวิทยาลัย

The abstract and full text of theses from the academic year 2011 in Chulalongkorn University Intellectual Repository (CUIR)
are the thesis authors' files submitted through the University Graduate School.

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาอักษรศาสตรมหาบัณฑิต

สาขาวิชาภาษาอังกฤษ ภาควิชาภาษาอังกฤษ

คณะอักษรศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

ปีการศึกษา 2560

ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย



จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

L2 ACQUISITION OF WH-OPERATOR MOVEMENT IN ENGLISH OPEN INTERROGATIVES
BY L1 THAI LEARNERS: A CASE OF THE FAILED FUNCTIONAL FEATURES HYPOTHESIS



A Thesis Submitted in Partial Fulfillment of the Requirements

for the Degree of Master of Arts Program in English

Department of English

Faculty of Arts

Chulalongkorn University

Academic Year 2017

Copyright of Chulalongkorn University



จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Thesis Title L2 ACQUISITION OF WH-OPERATOR MOVEMENT
IN ENGLISH OPEN INTERROGATIVES BY L1 THAI
LEARNERS: A CASE OF THE FAILED FUNCTIONAL
FEATURES HYPOTHESIS

By Mr. Pairoj Kunanupatham

Field of Study English

Thesis Advisor Associate Professor Nattama Pongpairoj, Ph.D.

Accepted by the Faculty of Arts, Chulalongkorn University in Partial
Fulfillment of the Requirements for the Master's Degree

.....Dean of the Faculty of Arts
(Associate Professor Kingkarn Thepkanjana, Ph.D.)

THESIS COMMITTEE

.....Chairman
(Associate Professor Prima Mallikamas)

.....Thesis Advisor
(Associate Professor Nattama Pongpairoj, Ph.D.)

.....External Examiner
(Assistant Professor Supakorn Phoocharoensil, Ph.D.)

ไพโรจน์ คุณานุปถัมภ์ : การรับการย้ายตัวดำเนินการ WH ในคำถามเปิดภาษาอังกฤษในฐานะภาษาที่สองของผู้เรียนที่มีภาษาไทยเป็นภาษาแรก: กรณีสมมติฐานลักษณะแสดงหน้าที่ที่ล้มเหลว (L2 ACQUISITION OF WH-OPERATOR MOVEMENT IN ENGLISH OPEN INTERROGATIVES BY L1 THAI LEARNERS: A CASE OF THE FAILED FUNCTIONAL FEATURES HYPOTHESIS) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: รศ. ดร.ณัฐมา พงศ์ไพโรจน์, หน้า.

งานวิจัยนี้ศึกษาการรับการย้ายตัวดำเนินการ wh (wh-operator movement) ในคำถามเปิด (open interrogatives) ภาษาอังกฤษในฐานะภาษาที่สองของผู้เรียนที่มีภาษาไทยเป็นภาษาแรก โดยอิงจากสมมติฐานลักษณะแสดงหน้าที่ที่ล้มเหลว (Failed Functional Features Hypothesis) วัตถุประสงค์หลักของงานวิจัยคือศึกษาว่าผู้เรียนชาวไทยสามารถรับการย้ายตัวดำเนินการ wh ในภาษาอังกฤษได้หรือไม่ และใช้สมมติฐานลักษณะแสดงหน้าที่ที่ล้มเหลวในการอธิบายข้อมูลของผู้เรียนชาวไทย สืบเนื่องจากภาษาไทยไม่มีลักษณะ strong uninterpretable [*uw*h] ผู้วิจัยจึงตั้งสมมติฐานว่าผู้เรียนชาวไทยไม่สามารถรับคำถามเปิดภาษาอังกฤษด้วยวิธีการย้ายตัวดำเนินการ wh และนอกจากนี้การแปร (variability) จะปรากฏเห็นชัดทั้งในระดับการใช้ (production) และสัญชาตญาณ (perception) งานวิจัยนี้ได้ใช้แบบการสร้างประโยคคำถาม (Question Formation Task) และแบบทดสอบการตัดสินทางไวยากรณ์ (Grammaticality Judgement Task) โดยมีผู้ให้ข้อมูลคือผู้เรียนชาวไทยสองกลุ่ม แบ่งเป็นผู้เรียนที่มีสมรรถภาพระดับกลาง (intermediate learners) 20 คน และผู้เรียนที่มีสมรรถภาพระดับสูง (advanced learners) 20 คน ผลการวิจัยแสดงให้เห็นว่า แม้ว่าจะมีระดับการใช้สรรพนามซ้อน (resumptive pronouns) ต่ำในแบบการสร้างประโยคคำถาม ผู้เรียนชาวไทยทั้งสองระดับไม่สามารถบอกปฏิเสธการใช้สรรพนามซ้อนที่ผิดไวยากรณ์ได้ โดยอัตราการปฏิเสธน้อยกว่ากลุ่มควบคุมที่เป็นเจ้าของภาษาอย่างเห็นได้ชัด นอกจากนี้การใช้และการตัดสินสรรพนามซ้อนของผู้เรียนชาวไทยเป็นแบบสุ่ม กล่าวคือ ผู้เรียนชาวไทยจะใช้หรือยอมรับคำถามเปิดไม่ว่าจะมีสรรพนามซ้อนอยู่หรือไม่ก็ตาม ซึ่งอาจจะเกิดจากการที่ภาษาไทยสามารถมีสรรพนามซ้อนได้ในบางโครงสร้าง อาทิ คุณานุปถัมภ์ ผลการวิจัยยังพบสมมาตร (asymmetry) ระหว่างคำถามเปิดที่มีการสกัดประธาน (subject extraction) และคำถามเปิดที่มีการสกัดกรรม (object extraction) โดยอาจจะเกิดจากปัญหาการประมวลผล (processing) งานวิจัยนี้จึงสรุปว่า ผู้เรียนที่มีภาษาไทยเป็นภาษาแรกไม่สามารถรับการย้ายตัวดำเนินการ wh ในภาษาอังกฤษ ซึ่งเกิดจากลักษณะ strong uninterpretable [*uw*h] ที่ไม่มีในภาษาไทย ผลการวิจัยสนับสนุนสมมติฐานลักษณะแสดงหน้าที่ที่ล้มเหลวและข้อเสนอที่ว่าผู้เรียนภาษาที่สองสามารถเข้าถึงไวยากรณ์สากล (Universal Grammar) ได้เพียงบางส่วนเท่านั้น

ภาควิชา ภาษาอังกฤษ

ลายมือชื่อนิติดี

สาขาวิชา ภาษาอังกฤษ

ลายมือชื่อ อ.ที่ปรึกษาหลัก

ปีการศึกษา 2560

5880141022 : MAJOR ENGLISH

KEYWORDS: WH-OPERATOR MOVEMENT / L1 THAI LEARNERS

PAIROJ KUNANUPATHAM: L2 ACQUISITION OF WH-OPERATOR MOVEMENT IN ENGLISH OPEN INTERROGATIVES BY L1 THAI LEARNERS: A CASE OF THE FAILED FUNCTIONAL FEATURES HYPOTHESIS. ADVISOR: ASSOC. PROF. NATTAMA PONGPAIROJ, Ph.D., pp.

Based on the Failed Functional Features Hypothesis (FFFH) (Hawkins and Chan, 1997), the current study aims at investigating L1 Thai learners' acquisition of the *wh*-operator movement in English open interrogatives. Two primary objectives included (1) to explore whether the *wh*-operator movement in English can be acquired by L1 Thai learners and (2) to account for the data by the FFFH. Due to the non-existence of the strong uninterpretable [*uwh*] feature in Thai, it is hypothesized that L1 Thai learners of English fail to acquire English open interrogatives by means of the operator movement and that variability in English open interrogatives is evident in both production and perception. A Question Formation Task (QFT) and A Grammaticality Judgement Task (GJT) were administered to 20 intermediate and 20 advanced L1 Thai learners. The findings revealed that, despite their low suppliance rates of resumptive pronouns in the QFT, both L2 groups persistently failed to detect the presence of resumptive pronouns in the GJT, with the rejection rates remarkably lower than those of the native controls. Moreover, their use and judgement of resumptive pronouns were rather unsystematic; that is, they seemed to produce or accept open interrogatives irrespective of the presence of resumptive pronouns, which may be ascribed to the fact that the Thai language allows the resumptive strategy in some structures such as the relative construction. In addition, an asymmetry between subject extraction and object extraction was found in the learner data, possibly owing to processing difficulties posed by the former. The study, therefore, concludes that L1 Thai learners cannot acquire the *wh*-operator movement in English, driven by the strong uninterpretable [*uwh*] feature absent in Thai, lending vigorous support to the FFFH and, thus, the proposal that Universal Grammar (UG) is partially available to adult L2 learners.

Department: English

Student's Signature

Field of Study: English

Advisor's Signature

Academic Year: 2017

ACKNOWLEDGEMENTS

I would like to express my gratitude to a great number of people, who made a substantial and invaluable contribution to the completion of this study.

First of all, I wish to extend my appreciation to the 90th Anniversary of Chulalongkorn University Fund (Ratchadaphiseksomphot Endowment Fund) for the financial support of this research.

I also want to extend my heartfelt gratitude toward my thesis advisor, Associate Professor Nattama Pongpairroj, who kindled my keen interest in second language acquisition and has never failed to inspire me to be both an exceptional teacher and researcher. Without her constant support, understanding, and guidance, this study would never have come to fruition.

In addition, I am greatly indebted to my thesis committee, Associate Professor Prima Mallikamas and Assistant Professor Supakorn Phoocharoensil, who always gave me tremendous support and encouragement while I was working on my thesis. I am also grateful to for their help, along with Ajarn Chirasiri Kasemsin's, in checking the validity of the two tasks employed.

I am particularly thankful to all of the participants, who sacrificed their precious time in order to take part in the experiment. My sincere thanks also go to Jared Norman, Sireemas Maspong, Nattanaree Wasontiwongse, and Pakwan Panyatona, for their valuable assistance in recruiting native control subjects, and more importantly, for their readiness to help.

Last but not least, I would like to dedicate the merits of this thesis to the three greatest persons in my life—my mother, my grandmother, and Turk—for their unconditional support and unwavering faith in me.

CONTENTS

| | Page |
|--|------|
| THAI ABSTRACT | iv |
| ENGLISH ABSTRACT | v |
| ACKNOWLEDGEMENTS | vi |
| CONTENTS | vii |
| LIST OF TABLES | x |
| LIST OF FIGURES | xi |
| Chapter 1 Introduction..... | 1 |
| 1.1 Background of the Study..... | 1 |
| 1.2 Objectives | 4 |
| 1.3 Hypotheses..... | 4 |
| Chapter 2 Literature Review | 6 |
| 2.1 The Failed Functional Features Hypothesis (FFFH)..... | 6 |
| 2.2 Previous Studies on the Second Language Acquisition of English <i>Wh</i> - movement..... | 10 |
| 2.2.1 Previous studies on L2 English <i>wh</i> -movement with respect to access to UG..... | 11 |
| 2.2.2 Previous studies on resumptive pronouns in second language acquisition with respect to UG | 19 |
| 2.2.3 Previous studies on resumptive pronouns in English relative clauses by L1 Thai learners of English..... | 22 |
| 2.3 Linguistic Descriptions of English and Thai Open Interrogatives and Other Relevant Structures | 24 |
| 2.3.1 The Linguistic Descriptions of English and Thai Open Interrogatives..... | 24 |

| | Page |
|---|------|
| 2.3.1.1 The structure of English open interrogatives..... | 24 |
| 2.3.1.2 The structure of Thai open interrogatives..... | 27 |
| 2.3.2 Differences between English and Thai Open Interrogatives and Related Structures..... | 29 |
| 2.3.2.1 Parametric difference in terms of the wh-parameter..... | 29 |
| 2.3.2.2 Open interrogatives with embedded clauses..... | 30 |
| 2.3.2.3 Pronoun retention in English and Thai..... | 31 |
| Chapter 3 Methodology..... | 37 |
| 3.1 Subjects..... | 37 |
| 3.2 Research Instruments..... | 38 |
| 3.2.1 The Tasks..... | 39 |
| 3.2.1.1 The question formation task (QFT)..... | 39 |
| 3.2.1.2 The grammaticality judgement task (GJT)..... | 41 |
| 3.2.2 Validity test..... | 44 |
| 3.3 Data Collection..... | 45 |
| Chapter 4 Results and Discussion..... | 47 |
| 4.1 Overall Results from the QFT and the GJT..... | 47 |
| 4.2 Task 1: Question Formation Task..... | 49 |
| 4.2.1 Overall Results..... | 49 |
| 4.2.2 Results in Relation to the Extraction Site..... | 51 |
| 4.3 Task 2: Grammaticality Judgement Task (GJT)..... | 53 |
| 4.3.1 Overall Results..... | 53 |
| 4.3.3 Results in Relation to the Extraction Site..... | 56 |

| | Page |
|---|------|
| 4.4 Discussion..... | 61 |
| 4.4.1 L2 Acquisition of <i>Wh</i> -Operator Movement and The Failed Functional Features Hypothesis (FFFH)..... | 61 |
| 4.4.2 Asymmetry between Subject Extraction and Object Extraction..... | 66 |
| Chapter 5 Conclusion..... | 71 |
| 5.1 Conclusions..... | 71 |
| 5.2 Pedagogical Implications..... | 74 |
| 5.3 Limitations and Recommendations for Future Research..... | 74 |
| | 77 |
| REFERENCES..... | 77 |
| Appendix A: Details of the participants..... | 84 |
| Appendix B: Question Formation Task (QFT)..... | 87 |
| Appendix C: Grammaticality Judgement Task (GJT)..... | 89 |
| VITA..... | 91 |

LIST OF TABLES

| | |
|--|----|
| Table 1 The number of subjects, the average ages, and the average scores | 38 |
| Table 2 The distribution of items in the GJT | 43 |
| Table 3 The overall results from the QFT and the GJT by the intermediate, advanced, and control | 47 |
| Table 4 The overall results from the QFT by the intermediate and advanced groups..... | 50 |
| Table 5 Results from the QFT in relation to the extraction site | 52 |
| Table 6 Results from the GJT in relation to types of test sentences..... | 55 |
| Table 7 The overall results from the GJT in relation to the extraction site | 57 |
| Table 8 Detailed results from the GJT showing an interaction between the extraction site and the types of test sentences. | 59 |

LIST OF FIGURES

| | |
|--|----|
| Figure 1 Average accuracy scores in the QFT and the GJT by the intermediate, advanced, and control groups..... | 49 |
| Figure 2 Average scores on question formation by the intermediate and advanced groups..... | 51 |
| Figure 3 Average scores on the accuracy of the question formation in relation to the extraction site..... | 53 |
| Figure 4 Average scores on the accurate judgement by the intermediate and advanced groups..... | 54 |
| Figure 5 Average scores on the judgement of grammatical and ungrammatical sentences by the two groups..... | 56 |
| Figure 6 Average scores on the accuracy of the GJT in relation to the extraction site | 58 |
| Figure 7 Average scores on the accuracy of the GJT in detail | 60 |

Chapter 1

Introduction

This chapter establishes the context for the study. Section 1.1 presents the research background. Section 1.2 formulates the objectives and the hypotheses of the study.

1.1 Background of the Study

The availability of Universal Grammar (UG) for post-childhood L2 learners has been widely debated in second language acquisition (SLA) studies. The questions arise as to whether UG in principle is accessible to L2 learners and, if so, to what degree. While advocates of the 'Full Access' approaches propose that adult L2 learners have access to UG in its entirety and their interlanguage grammars are indeed constrained by UG principles and parameters (White, 1986; Schwartz & Sprouse, 1994, 1996; Flynn, 1996), proponents of the 'No Access' approaches argue that UG is not available to adult L2 learners (Bley-Vroman, 1989; Harald & Pieter, 1986; Schachter, 1988).

However, as more empirical evidence of variability in learner data and divergence in near-native grammars keeps accumulating, the 'partial availability' of UG is put forward by many scholars including Hawkins and Chan (1997), Smith and Tsimpli (1995), Tsimpli and Dimitrakopoulou (2007), and Tsimpli and Roussou (1991). The partial availability view postulates that certain subparts of UG are not accessible to L2

learners, but others are still fully accessible. In other words, UG is posited to be *partially* available in adult SLA.

This model gives rise to the Failed Functional Features Hypothesis (FFFH), first proposed by Hawkins and Chan (1997), postulating a problem in L2 learners' underlying syntax. Under this approach, it is hypothesized that certain subparts of UG are not available to post-puberty learners, and thus, they are assumed to be unable to acquire certain formal features or categories of the target language that are not realized in their L1. L2 learners' syntactic representations are deficit or non-target-like owing to L1/L2 differences in syntax. Under this view, UG is partially available in SLA. Apart from Hawkins and Chan (1997)'s seminal study, several works also support this view, including Adger (2003), Franceschina (2001, 2003), Hawkins (2005), Hawkins and Liszka (2003), Prentza (2012), Rezaeian, Abedini and Sadighi (2015), Smith and Tsimpli (1995) and Tsimpli and Dimitrakopoulou (2007).

Based on the FFFH, which argue for partial availability to UG, the present study deals with the issue of variability in second language (L2) learners' judgements as well as production. According to Tsimpli and Dimitrakopoulou (2007), 'variability', alternatively known as 'optionality', refers to "the (in)consistent behavior of the language learner in the target second language (L2), which is contrasted with the performance of the native speaker" (p.216). In the current study, variability is concerned with the acceptability and production of both the target L2 form of English open interrogatives, and its non-target counterpart.

The construction of open interrogatives, widely known as *wh*-questions, is commonly found across languages. Nevertheless, different languages employ different ways to form them. Broadly speaking, the formation of open interrogatives involves either the in-situ strategy or the movement strategy—the latter is motivated by the strong uninterpretable [*uwh*] feature based on minimalist assumptions.

In SLA, the main concern is whether L2 learners can acquire related target structures such as relative clauses or open interrogatives by means of the *wh*-operator movement which is absent in their L1. While some studies such as Çele and Gürel (2011); Li (1998); Martohardjono (1993); Tayyebi (2011), and White and Juffs (1998) claim that UG in its entirety is fully accessible to proficient L2 learners, others such as Hawkins (2005), Hawkins and Chan (1997), Johnson and Newport (1991) and Prentza (2012) support partial availability of UG. To the researcher's best knowledge, no studies have been conducted to examine whether L2 learners of English whose L1 Thai does not possess the strong uninterpretable [*uwh*] feature can acquire the *wh*-operator movement in English. Hopefully, the results from this study will shed more light on this controversial issue in SLA—whether UG is fully or partially to L2 learners or, to be more specific, whether certain formal features which are not realized in L1 can be acquired by L2 learners.

1.2 Objectives

The objectives of the current study were:

1. To investigate whether the *wh*-operator movement motivated by the strong uninterpretable [uwh] feature in English can be acquired by L1 Thai learners
2. To see whether the Failed Functional Features Hypothesis (FFFH) can account for the data of L1 Thai/L2 English learners in relation to the *wh*-operator movement

1.3 Hypotheses

The hypotheses were formulated as follows:

1. Based on the FFFH, L1 Thai learners fail to acquire English open interrogatives by means of the operator movement due to the lack of the strong uninterpretable [uwh] feature in Thai.
2. Variability in English open interrogatives will be evident in both production and perception.
 - 2.1 L1 Thai learners will produce resumptive pronouns in embedded clauses within English open interrogatives.
 - 2.2 L1 Thai learners will have particular difficulties in recognizing that resumptive pronouns are ungrammatical in English.

The current study is organized as follows. Chapter 2 presents the literature review of the study, which includes the Failed Functional Features Hypothesis (FFFH) (2.1), a review of previous SLA studies on the *wh*-operator movement in relation to the

availability of UG (2.2), and the linguistic descriptions of Thai and English interrogatives and related structures (2.3). Chapter 3 describes the methodology of the study. Chapter 4 reports and discusses the results. Chapter 5 provides a conclusion of the study as well as pedagogical implications, limitations, and recommendation for future research.



Chapter 2

Literature Review

This chapter is organized as follows. Section 2.1 describes the Failed Functional Features Hypothesis (FFFH), which is the principal theoretical concept investigated in the present study. Section 2.2 reviews previous research studies on second language acquisition (SLA) of English *wh*-movement in relation to the availability of Universal Grammar (UG). Section 2.3 provides the linguistic descriptions of English and Thai open interrogatives and other relevant structures.

2.1 The Failed Functional Features Hypothesis (FFFH)

The issue of UG availability in SLA was a primary focus in earlier generative literature. Two main approaches have been put forward. One is known as ‘Full Access’ approaches (e.g., Flynn, 1996; Schwartz & Sprouse, 1996; Schwartz & Sprouse, 1994; White, 1986), whereas the other is known as ‘No Access’ approaches (e.g., Bley-Vroman, 1989; Harald & Pieter, 1986; Schachter, 1988). While the ‘Full Access’ view maintains that post-puberty L2 learners indeed have access to UG and, thus, their interlanguage grammars are constrained by principles and parameters of UG, the ‘No Access’ view suggests the opposite (White, 2003).

However, variability in empirical learner data and divergence in near-native grammars give rise to models of SLA that advocated ‘*partial* accessibility’ to UG

(Tsimpli & Dimitrakopoulou, 2007). Among others, some of the prominent studies in support of partial availability of UG include Hawkins and Chan (1997), Smith and Tsimpli (1995) and Tsimpli and Roussou (1991). Under this approach, it is hypothesized that certain subparts of UG are not accessible to second language learners, but others are still fully accessible. In other words, UG is postulated to be *partially* available in adult SLA.

Apart from the issue of UG availability, another issue concerns the nature of interlanguage representation (White, 2000). Recently, it has been claimed that interlanguage representation is impaired either *globally* (Meisel, 1997) or *locally* (Beck, 1998; Eubank & Grace, 1998; Hawkins & Chan, 1997), and such impairment is usually located in the properties of the interlanguage functional feature system. In particular, the 'global impairment' view posits that interlanguage grammars differ from natural languages and not UG constrained at all. By contrast, the second school postulates that the interlanguage representation is confined to those functional features or feature values which are instantiated in the L1. Specifically, any L2 functional features or categories which are non-existent in the L1 cannot be acquired by L2 learners (Smith & Tsimpli, 1995). Similarly, it is argued that parameters pertinent to functional categories that are set differently in the L1 from the L2 cannot be reset for post-puberty L2 learners (Hawkins, 2001). Those who argue for no impairment assume that L2 functional categories and features will be present in interlanguage grammar

(Epstein, Flynn & Martohardjono, 1996; Grondin & White, 1996; Lakshmanan, 1993; Schwartz & Sprouse, 1994).

Following the approaches of partial availability of UG in post-childhood SLA and local impairment in L2 learners' interlanguage representation, the The Failed Functional Features Hypothesis (FFFH), first proposed by Hawkins and Chan (1997), claims that L2 learners' syntactic representations are partially deficit or impaired, and, therefore, adult L2 learners fail and are unable to acquire functional categories or features differing from those found in the L1. However, they can still acquire those features which have been instantiated during L1 acquisition. FFFH advocates maintain that L2 learners' syntactic representations are non-target-like owing to L1/L2 differences in syntax (Franceschina, 2001, 2003; Hawkins & Chan, 1997; Hawkins & Liszka, 2003). To be specific, L2 learners' syntax becomes deficit or locked up once they reach puberty or pass the critical period¹, and it is impossible to reset it. The syntactic categories, features, or parameters which are instantiated or selected in the first language fail to operate.

The FFFH has been widely and vibrantly investigated in SLA. Hawkins and Chan (1997), which will be considered in the next section, is the seminal work in favor of the hypothesis. To end this section, two more representative studies arguing for the FFFH

¹ The Critical Period Hypothesis postulates that the ability to achieve native-like proficiency is associated with the initial age of exposure. That is, if language learning starts off after puberty, the learner will never attain a level of competence or proficiency like that of a native speaker. After this point, language learning ability also declines with age. (VanPatten & Jessica, 2015).

are illustrated. The first one is Franceschina (2001)'s, in which L2 Spanish learners were divided into two groups on the grounds of whether or not their L1 has the gender feature. These learners together with a group of native speaker controls were tested on five tasks which consist of two production tasks and three interpretation tasks. The results from all tasks generally revealed that there was a significant difference between the L1 Spanish and the L1 [-gen] group (i.e., L1 = English) and between the L1 [+gen] group (i.e., L1 = French, German, Greek, Italian, and Portuguese) and the L1 [-gen] group. The results suggest that parameterized features (i.e., the gender feature, in this case) are fully acquirable only in cases where they are present in the learner's L1 functional feature inventory. In other words, since the functional feature gender is not realized in English, L1 English / L2 Spanish learners cannot acquire it. On the other hand, this feature is present in French, German, Greek, Italian, and Portuguese, so it is acquirable by L1 speakers of these languages, resulting in higher accuracy rates than those of L1 speakers of English.

Another study in support of the FFFH is Franceschina (2003), which aims at investigating the following contrasts: the contrast between SLA of universal versus parameterized functional features (i.e., [*uCase*] vs. [*uGender*] and [*uNumber*]), and the contrast between SLA of parameterized functional features present in the L1 (+gen) and those which are not (-gen). The participants were categorized into three groups: (1) Spanish speaker native controls, (2) speakers of L1 French, German, Greek, Italian, and Portuguese (+gen L1), and (3) speakers of L1 English (-gen L1). Five tasks were

administered, including (i) a missing pronoun task, (ii) an informal interview, (iii) find the appropriate adj/N task, (iv) guessing game, and (v) a GJT, all of which aimed at tapping the participants' knowledge of these functional features. Overall, the results for Case and Number for both L2 Spanish groups suggest that L2 acquisition of universal and parameterized features is not inherently different. What is interesting appears to be the contrast between parameterized features present in the L1 and those absent in the L1, as seen from the groups' performance on gender. In this respect, the researcher concludes that the FFFH is the most satisfactory account available to date.

2.2 Previous Studies on the Second Language Acquisition of English *Wh*-movement

Since the current study aimed at examining whether L1 Thai learners of English can acquire English *wh*-operator movement, motivated by the strong uninterpretable feature [*uwh*] which is non-existent in Thai, by looking at their use of ungrammatical resumptive pronouns as well as their ability to detect them, this section reviews previous related SLA studies. Section 2.2.1 presents research works which focused on *wh*-movement constraints such as Subjacency and Empty Categories. Section 2.2.2 is concerned with previous works which addressed resumptive pronouns and L2 acquisition of certain syntactic features relating to *wh*-movement. Section 2.2.3 introduces research work on resumptive pronouns in English relative clauses by L1 Thai learners of English.

2.2.1 Previous studies on L2 English *wh*-movement with respect to access to UG

Previous studies have shown inconclusive results as to whether UG is accessible to adult L2 learners of English. One of the structures widely investigated is concerned with L2 learners' acquisition of *wh*-movement, usually in terms of their sensitivity to *wh*-movement constraints such as Subjacency and Empty Categories, with two structures often examined—relative clauses and open interrogatives. While some studies (Çele & Gürel, 2011; Li, 1998; Martohardjono, 1993; Tayyebi, 2011; White, 1986) supported the claim that UG in its entirety is fully available to post-puberty second language learners, the opponents (Hawkins, 2005; Hawkins & Chan, 1997; Johnson & Newport, 1991; Prentza, 2012) argued that adult L2 learners only have partial access to UG. That is, certain principles and parameter settings or functional features which are not instantiated in their L1 may not be available to them.

This section starts with studies which support full access to UG. Martohardjono (1993) investigated the *wh*-movement with native speakers of Italian, Indonesian, and Chinese, hypothesizing that if L2 learners did not accept Subjacency violations, it can be inferred that the learners had access to UG. In order to test this claim, Martoharjono implemented a grammaticality judgement task which contained relative clauses in which a *wh*-element was moved from the subject or object position. The ungrammatical sentences involving subject extraction exhibited two kinds of violations—i.e., Subjacency and the empty category principle (ECP), and those involving

object extraction demonstrated only a Subjacency violation. It was discovered that all the participants performed above the chance level as they rejected Subjacency violations. Martohardiono argued that, despite the absence of the *wh*-movement in their L1, Chinese and Indonesian participants performed above the chance level when judging the *wh*-movement violations in English relative clauses. In addition, the results revealed that clauses with subject extraction were more frequently rejected than those with object extraction; the former involved two violations (Subjacency and ECP), while the latter involved only one (Subjacency). This trend was similar to that of English native speakers, which may be triggered by UG principles. Martohardiono concluded that the learners acquired the *wh*-movement in English, since they could correctly detect and differentiate between the two types of Subjacency violations. L2 learners, thus, had full access to UG.

Li (1998) argued that UG is fully accessible to L2 learners with high proficiency. Li examined whether L2 learners of English whose L1 Chinese was absent observe the constraints on Subjacency. A grammaticality judgement task was implemented to explore whether UG principles could be accessed by adult Chinese participants during their acquisition of the *wh*-movement in English relative clauses. Two groups of Chinese subjects were recruited: those who lived in China (the China group) and those who lived in the United States (the US group). English native controls were also included. It was found that the China group did not accept sentences exhibiting Subjacency violations. Besides, no significant difference was found between the US

group and the English native controls when they judged Subjacency violation. Li argued that, in spite of the lack of the *wh*-movement in Chinese and explicit instruction concerning Subjacency, the Chinese subjects were able to acquire the *wh*-movement like English native speakers, suggesting the availability of UG. Li further noted that the native-like performance of the US group could be ascribed, not to the age of the learners, but to a high language proficiency which helped the learners gain full access to UG.

White and Juffs (1998) employed both a timed grammaticality judgement (GT) task and a question formation (QF) task to investigate the effects of foreign language learning on access to Universal Grammar with regard to the L2 acquisition of the constraints on *wh*-movement in English open interrogatives. The results from two groups of adult L1 Chinese learners—one group exposed to English in a university setting in China, the other in Canada—revealed that the subjects acquired long-distance *wh*-movement and observed island constraints in English regardless of the different kinds of L2 exposure. Moreover, it was shown that both groups were less accurate and slower in judging subject extraction than object extraction, and overall they were less accurate than the native control group, which White and Juffs attributed to processing difficulties rather than competence differences. That is, subject extraction requires more processing efforts than object extraction, leading to the participants' less accurate and slower performance.

Tayyebi (2011) looked into whether Universal Grammar is accessible to adult Persian learners of English with regard to the Empty Category Principle and the Subjacency, both of which are not in effect in Persian, a *wh*-in situ language. 35 advanced L1 Iranian learners were assigned to complete a 5-point Likert scale acceptability judgement task, which comprised both grammatical and ungrammatical extractions in English open interrogatives. The results were compared with those of the control groups of 30 English adult native speakers. Within-group analyses showed that the participants, like the English natives, could discriminate between grammatical and ungrammatical *wh*-movements. Between-group comparisons revealed that the Persian group's performance in rejecting ungrammatical sentences was not significantly different from that of the English group. Consistent with the proposal that L2 learners' knowledge is constrained by UG, the results suggested that L2 learners have access to island constraints on *wh*-movement.

Çele and Gürel (2011) investigated the on-line processing of long distance *wh*-dependencies in English open interrogatives by L1 Spanish [+*wh*-movement] and L1 Turkish [-*wh*-movement] learners who reached an end-state L2 acquisition, compared with native English speakers. The results from an Online Grammaticality Judgement Task (OGJT), which had been administered to two groups of L2 learners together with the control group of adult native English speakers, revealed four major findings: 1) Despite their lower processing of *wh*-extractions, they were as accurate as English native speakers in judging both grammatical and ungrammatical extractions. Besides,

no difference between L2 learners from Spanish [+wh] and Turkish [-wh] was found. 2) An asymmetry between subject and object extractions was shown in non-finite clauses, but not in finite clauses. 3) The more difficult the sentences to process, the less accurate the judgement was. 4) No negative L1 influence was perceptible either in accuracy or in the processing patterns. It was concluded that L2 learners were able to acquire L2 grammatical knowledge of island constraints, supporting the availability of UG and the possibility of native-like attainment in the end-state L2.

In contrast to the studies reviewed earlier, several others came to a different conclusion. That is, UG is partially available to adult second language learners, partly due to maturational effects. The seminal study on the L2 acquisition arguing for partial availability of UG is Hawkins and Chan (1997), who proposed the Failed Functional Hypothesis, which postulates that certain functional features not realized in L1 are subject to a critical period. They examined the acquisition of English restrictive clauses by L1 Cantonese speakers. A parametric difference between Chinese and English pertaining to presence or absence of the [WH] feature in C was assumed. Hawkins and Chan argued that only those functional features instantiated in the L1 was accessible for L2 learners. As C in Chinese did not have the [WH] feature, it would be the case for C in the interlanguage grammar. The Failed Functional Features Hypothesis made a prediction that Chinese speakers would not be able to construct English relative clause by means of the operator movement. Thus, they would have difficulties recognizing the ungrammaticality of resumptive pronouns, doubly filled comps (**who/that*), and

Subjacency violations in English. To test the hypothesis, learners of English whose L1 were Cantonese or French at three different L2 proficiency levels were recruited, and a grammaticality judgement task which consisted of grammatical and ungrammatical relative clauses was employed. The results revealed that the L1 French groups outperformed the L1 Chinese groups in every aspect. The advanced French learners did not differ from the native-speaker controls. Both L1 groups showed significant improvement. Although the Chinese learners did not reach the level of performance of the French speakers, they showed increasing accuracy in acquiring most properties of English relative clauses. That is, the advanced Chinese group seemed to be more or less successful on most aspects of relatives, such as fronting of *wh*-pronouns and the ungrammaticality of resumptive pronouns. However, the advanced Chinese group was significantly less accurate in detecting Subjacency violations than the other groups. Hawkins and Chan adopted an L1-based analysis to describe this phenomenon. They maintained that operator movement was not involved in the derivation of English relative clauses by the Chinese speakers. Instead, *wh*-phrases were base-generated as topics in Spec CP, binding a null presumptive *pro*. Thus, the results borne out of their study seemed to vigorously support the partial access view.

Schachter (1989, 1990) compared the results from the grammaticality judgement task elicited from L1 Korean, Chinese, and Indonesian learners with those from L1 Dutch learners and English native controls to address the question whether post-puberty second language learners have access to the principles of UG. While

Subjacency effects in Dutch are similar to those of English, Korean displays none and those in Chinese and Indonesian are considerably different from those of English. On the whole, it was found that just like the native control group, the Dutch group performed well on judgement of Subjacency violations. In contrast, the Koreans' judgement was the poorest of all non-native groups. Even though the Chinese and Korean groups' judgement accuracy was better than the Korean one, their rate of accuracy was significantly lower than that of the Dutch speakers. In essence, the findings are at odds with the position that UG is reactivated in adult L2 learners, but they corroborated the claim that UG in its entirety is not available for post-puberty second language acquisition.

Johnson and Newport (1991) examined L2 learners' knowledge of the *wh*-movement in English and their capacity to detect Subjacency violations in question formation. Chinese adult learners of English who had been living in the United States for 18 to 38 years were recruited. A grammaticality judgement task which comprised sentences involving Subjacency violations in three different structures was implemented. These structures included the noun phrase complements (e.g. **What did the teacher know the fact that Janet liked?*), relative clauses (e.g. **Who should the policeman who found get a reward?*), and *wh*-complement (e.g. **What did Sally watch how Mrs. Gomez makes?*). It was found that the participants' judgement accuracy declined as their age increases. Overall, they scored only 22 correct responses out of 36 sentences relating to Subjacency violations. Johnson and Newport argued that the

participants' performance was subject to the critical period, maintaining that Chinese learners of English did not have full access to UG.

Recently, based on the perspective of the minimalist program², Hawkins (2005) reformulated his Failed Functional Features Hypothesis and proposed that 'uninterpretable features are selected from the UG inventory of features during the critical period disappear' (p. 128). In an attempt to substantiate this hypothesis, he examined the acquisition of *wh*-movement in English interrogatives by Japanese learners, whose L1 interrogatives are formed by the *in-situ* strategy. In English, an uninterpretable [*uwh*] feature which is part of C is strong and forces the *wh*-phrase to move to the specifier of CP. By contrast, a Japanese uninterpretable [*uwh*] counterpart is weak; thus, no movement driven by a strong [*uwh*] feature is involved in the open interrogative formation. The results from a truth value judgement task by 40 Japanese native speakers of English revealed that although the participants could interpret long-distance *wh-word...gap* dependencies and scope ambiguities, they appeared to lack the sensitivity to superiority and subjacency effects. Hawkins concluded that, despite the participants' apparent target-like performance, they had a different representation, which is in line with the claim that certain uninterpretable features may not be accessible in later SLA if they are not in a speaker's L1.

² According to Crystal (2008), the Minimalist Program is a development of generative linguistic enterprise, with an aim to make statements about language as simple and general as possible. For more discussions of the concept, see, for example, Adger (2003) and Radford (2004, 2009).

To examine the possibility of L2 parameter resetting in the formation of English restrictive relative clauses, Prentza (2012) compared the results from a grammaticality judgement task by L1 advanced Greek learners of English and L1 English speakers. Greek and English represent different parametric options in the formation of RRC formation, so it was predicted that L1 Greek learners would have difficulty acquiring the feature specification of the English relative C. Overall, the results showed that the Greek group's performance was significantly less accurate than native speakers', especially in detecting ungrammatical sentences in terms of Subjacency violations with the presence of resumptive pronouns. Prentza concluded that they failed to acquire the feature specification of the English relative C, lending further support to the hypothesis that certain abstract syntactic features are subject to maturational effects.

2.2.2 Previous studies on resumptive pronouns in second language acquisition with respect to UG

To the researcher's best knowledge, the studies of resumptive pronouns in terms of UG availability in SLA have not been extensively investigated. Although the presence of resumptive pronouns is rendered evidence of no overt *wh*-movement (Haegeman, 1994; Hawkins & Chan, 1997; Prentza, 2012), a substantial number of SLA research works are exclusively devoted to L2 learners' sensitivity to Subjacency violations, as shown in the previous section. Aside from Hawkins and Chan (1997), which incorporated ungrammatical sentences involving resumptive pronouns into their study to investigate whether learners whose L1 lacks the [WH] feature could acquire it

in English, some recent studies such as Kong (2011); Rezaeian, Abedini and Sadighi (2015), and Tsimpli and Dimitrakopoulou (2007) also examined pronoun retention to see if L2 learners could acquire certain abstract syntactic features concerning *wh*-movement. Overall, it was found that maturational effects impede L2 learners' acquisition of those abstract features which are not instantiated in the L1.

Tsimpli and Dimitrakopoulou (2007) discussed L2 pronoun retention in English *wh*-interrogatives by intermediate and advanced L1 Greek learners in the light of the Interpretability Hypothesis (Tsimpli & Mastropavlou, 2007). It was hypothesized that the interpretable features of animacy and discourse-d-linking were involved in Greek learners' analysis of English pronouns, whereas the L1 Greek specification of resumptive pronouns as clusters of uninterpretable Case and Agreement features resists resetting. The results from a grammaticality judgement task revealed that a considerable number of intermediate learners accepted resumptive pronouns in *wh*-interrogative regardless of the extraction site, while most advanced learners dispreferred resumptive object pronouns more than their counterpart. However, the advanced learners' performance significantly differed from that of the native speakers. These patterns indicated the L1 transfer of the abstract properties of subject-verb agreement. In addition, both groups of the participants were sensitive to the [+/- animate] distinction on pronouns, which in turn interacted with the semantic feature of [d-linking]. The findings corroborated the Interpretability Hypothesis, which posits that certain uninterpretable syntactic features not instantiated in the L1 are

subject to a critical period and, thus, inaccessible to adult L2 learners.

Kong (2011) studied the issue of parameter resetting in the interpretation of resumptive pronouns within Chinese relative clauses by adult English speakers of L2 Chinese. A grammaticality judgement test was administered to L1 English speakers of different proficiency levels, and the results were compared with those of L1 Chinese native speakers as a control group. The study assumed the typological differences between Chinese and English in terms of the *operator movement* and the *head direction*. Generally, it was revealed that the ability to detect ungrammatical sentences involving resumptive pronouns correlated with proficiency. That is, as the proficiency levels increased, the learners were more accurate in judgement accuracy. Nevertheless, they were significantly less accurate than the control group, suggesting that their mental representations were different from those of the L1 Chinese native speakers. Thus, the findings were found to be in line with the Interpretability Hypothesis (Tsimplici and Dimitrakopoulou, 2007).

Rezaeian, Abedini and Sadighi (2015) investigated the acquisition of the uninterpretable feature of resumptive pronouns by L1 Persian learners in English relative clauses (RCs), with regard to the Interpretability Hypothesis, proposed by Tsimplici and Dimitrakopoulou (2007). In Persian RCs, resumptive pronouns are ungrammatical in subject positions, optional in object positions, and obligatory in object-of-preposition positions. A grammaticality judgement task and a translation task were given to three groups of L1 Persian learners with different proficiency levels,

together with English native speakers as the control group. In general, the more proficient the participants were, the more target-like they were in rejecting RCs with ungrammatical resumptive pronouns. However, the advanced group's performance was not as accurate as that of native speakers in object and object-of-preposition RCs. The findings were interpreted as in line with the Interpretability Hypothesis.

2.2.3 Previous studies on resumptive pronouns in English relative clauses by L1 Thai learners of English

To the best of the researcher's knowledge, there are only a few studies which partly address L1 Thai learners' interpretation of resumptive pronouns in the L2 acquisition of the *wh*-movement-related structure—that is, English relative clauses. Amornwongpeeti and Pongpairroj (2013) examined the acquisition of L2 English restrictive relative clauses by L1 Thai learners. Semi-replicated from Hawkins and Chan (1997), a grammaticality judgement task was administered to three groups of L1 Thai learners with different English proficiency levels. The results from one part of the task which focused on ungrammatical sentences with pronoun retention revealed a proficiency-related progression. That is, the participants whose L2 English was more proficient performed better in detecting ungrammatical resumptive pronouns. Amornwongpeeti and Pongpairroj concluded that the learners could acquire the properties of the [CP...gap] constructions, lending support to Hawkins and Chan (1997).

Phoocharoensil and Simargool (2009) analyzed English relative clauses in English descriptive essays written by two groups of Thai L1 learners, one with high

proficiency and the other with low proficiency. Although the study put particular emphasis on two language universals, i.e. *the Noun Phrase Accessibility Hierarchy* (NPAH)³ and *the Perceptual Difficulty Hypothesis* (PDH)⁴, the results also shed some light on Thai L1 learners' use of pronoun retention in English. It was found that both groups of the learners supplied resumptive pronouns in their English relative clauses. In addition, resumptive pronouns appeared more frequently in object positions than subject positions. The findings were consistent with *the Resumptive Pronoun Hierarchy*, which postulates that resumptive pronouns are likely to occur in more marked relative clause positions (i.e., object positions) than less marked ones (subject positions).

Except White and Juffs (1998), all of the previous studies related to L2 English *wh*-movement in terms of access to UG employed only grammaticality judgement tasks. Furthermore, these studies investigated the acquisition of L2 learners from several L1 backgrounds such as Mandarin, Korean, Indonesia, Italian. While all others restricted their studies to resumptive pronouns in L2 relative clauses (Amornwongpeeti

³ The Noun Phrase Accessibility Hypothesis (NPAH), put forward by Keenan and Comrie (1977), is primarily concerned with typological markedness and the acquisition order of RC types. The following hierarchy resulted from their investigation into fifty languages across the world: subject (SU) > direct object (DO) > indirect object (IO) > object of preposition (OPREP) > genitive (GEN) > object of complement (OCOMP), supported by a large number of both L1 and L2 studies.

⁴ The Perceptual Difficulty Hypothesis (PDH), proposed by Kuno (1974), focused on the position of an RC in a matrix clause. It claims that due to the role of the human memory system, center-embedded RCs pose more perceptual difficulty than right-embedded ones. The hypothesis is well supported by many L1 and L2 studies.

& Pongpairoj, 2013; Kong, 2011; Phoocharoensil & Simargool, 2009; Rezaeian, Abedini & Sadighi, 2015), only one study (Tsimpli and Dimitrakopoulou, 2007) discussed pronoun retention in L2 learners' acquisition of *wh*-interrogatives. To the researcher's best knowledge, there has not yet been any research investigating L1 Thai learners' acquisition of L2 *wh*-movement in English open interrogatives. In addition, virtually all of the research work employed only grammaticality judgement tasks. Therefore, this research work aims at exploring the acquisition of L2 English *wh*-operator movement in *wh*-interrogatives by Thai learners, implementing both interpretation and production tasks.

2.3 Linguistic Descriptions of English and Thai Open Interrogatives and Other Relevant Structures

Section 2.3.1 presents the linguistic descriptions of English and Thai open interrogatives are provided. Then, Section 2.3.2 illustrates the differences between English and Thai in terms of open interrogatives with embedded clauses, pronoun retention, and parameters.

2.3.1 The Linguistic Descriptions of English and Thai Open Interrogatives

The structure of English open interrogatives is explained first in Section 2.3.1.1, followed by that of Thai counterparts in Section 2.3.1.2.

2.3.1.1 The structure of English open interrogatives

Open interrogatives are clause types typically used to ask open questions with the set of open-ended answers (R. Huddleston & Pullum, 2005). In English, this clause

type is marked by the presence of one or more of the interrogative words, or generally known as *wh*-words or question words, which contain the missing information the speaker is looking for. Open interrogatives are also referred to as information questions or *wh*-questions. Also, they may be called *partial* interrogatives because the scope of the interrogation is only partial (Depraetere & Langford, 2012).

Interrogative words are used to introduce English open interrogatives. There are nine of them, including ‘who’, ‘whom’, ‘whose’, ‘what’, ‘which’, ‘when’, ‘where’, ‘why’, and ‘how’. These words can appear as a single word or combine with other words such as the head noun in ‘what movies’ or ‘which pen’ in order to form an interrogative phrase (or a *wh*-phrase). Interrogative words consist of several different word classes. According to R. Huddleston (1988), ‘who’ and ‘whom’ are pronouns; ‘which’, ‘whose’, ‘what’ can be either pronouns or determinatives; ‘when’ and ‘where’ are normally adverbs; ‘how’ can be adjectives or adverbs; ‘why’ is an adverb.

Meaning together with other linguistic properties governs the use of these interrogative words. For example, ‘who’ and ‘whom’ refer to personal reference. Traditionally, the former is used with the subject function, while the latter with the object function. For modern native speakers of English, the choice between the two also depends on function and style level (Huddleston & Pullum, 2005). That is, ‘who’ tends to be used irrespective of its function within the interrogative, and the use of ‘whom’ is deemed more formal and usually found in written language. Another example is the use of ‘which’ and ‘what’. The word ‘what’ usually refers to non-

personal reference, whereas ‘which’ is neutral with regard to personal/non-personal contrast (Huddleston, 1988). They convey slightly different meanings. That is, which implies some definite set of referents to choose from, as in ‘Which of these books would you recommend?’. The other has indefinite reference, as in ‘What kind of movie do you like best?’ (Depraetere & Langford, 2012; Leech & Svartvik, 2002).

English open interrogatives are characterized by the movement of the interrogative phrase (i.e. a *wh*-phrase). The formation of open interrogatives typically involves the *movement* strategy, which moves an interrogative phrase from its original position to the beginning of a clause (Timyam, 2015). The movement is accompanied by subject-auxiliary inversion, i.e. a syntactic operation which switches the positions of the subject and the first auxiliary verbs following it. If there is no auxiliary, an appropriate form of the verb ‘do’ carrying the tense marking (‘do’, ‘does’, and ‘did’) must be inserted to function as a dummy auxiliary before inversion can apply (Huddleston, 1988). Consider the interrogative clauses in (1):

- (1) a. What did Paul say _____?
 b. Where is she staying _____?

In (1a), the interrogative word ‘what’, which functions as the direct object of the verb ‘say’, is moved to the initial position. Since the clause contains no auxiliary, the dummy auxiliary ‘did’ is added and placed before the subject. Similarly, in (1b), the word ‘where’ functioning as an adjunct is moved to the beginning of the open

interrogative clause. The positions of the subject ‘she’ and the auxiliary ‘is’ are reversed.

However, when an interrogative phrase functions as the subject, as in ‘Who called the police?’, the subject-auxiliary inversion does not operate. Thus, the dummy auxiliary is not needed even if there is no auxiliary in the clause. In this case, the interrogative phrase ‘who’ remains in the original, i.e. initial, position.

2.3.1.2 The structure of Thai open interrogatives

While the formation of English open interrogatives relies on the movement strategy, that of the Thai counterparts applies the *in situ* strategy (Iwasaki & Horie, 2005; Ruangjaroon, 2007; Timyam, 2015). That is, an interrogative phrase is placed within a clause, in the same pattern where a non-interrogative word having the same grammatical role would occur. This analysis follows the generalization on interrogatives put forward by Cheng (1991), as cited in Timyam (2015). Consider the Thai open interrogatives in (2).

- (2) a. k^hray tɕà? klâ: nâŋ t^ham
who will dare sit do
 ‘Who would dare to sit and work?’
- b. raw tɕà? t^ham p^hûa aray
 I will do for **what**
 ‘What do we do it for?’

(Iwasaki & Ingkaphirom, 2005, p.291)

Both (2a) and (2b) have an interrogative phrase which remains in its original position as in the declarative counterpart. Moreover, no special particle is added to mark the clause as an interrogative. In (2a), the interrogative phrase /k^hray/ ‘who’ functions as the subject of the clause. It occurs in the pre-verbal position in the interrogative structure, i.e., the same position it would occupy in the declarative counterpart. In (2b), the interrogative word /aray/ ‘what’ performs a function as the complement of the preposition /p^hûa/ ‘for’. It is not moved to the initial position like in English; instead, it remains in situ.

Iwasaki & Ingkaphirom (2005) suggest eight Thai interrogative words, which can be categorized into three groups according to their function. The first type is the nominal interrogative words which include /k^hray/ ‘who’ and /aray/ ‘what’. They often function as a subject, an object, a preposition complement, a predicative complement, and a modifier. The second type is adjectival interrogative words /nây/ ‘which’ and /ki:/ ‘how many’. They have much more restricted distribution than the first group. /nây/ ‘which’ functions as a modifier for a classifier or noun; /ki:/ ‘how many’, placed before the word it modifies, functions as a modifier for measure words and classifiers. The last type is adverbial interrogative words which consist of /m^harây/ ‘when’, /t^hâwrây/ ‘how much’, /yà:ŋray/ or /yaŋŋay/ ‘how’, and /t^hammay/ ‘why’. All of the words in this group serve as adjuncts; each one asks about some kind of circumstantial details of the main event in question.

2.3.2 Differences between English and Thai Open Interrogatives and Related Structures

2.3.2.1 Parametric difference in terms of the *wh*-parameter

One type of word-order variation among languages is related to the *wh*-parameter. This parameter determines whether *wh*-expressions, or interrogative phrases, as used in this study, can be fronted (i.e. moved to the front of the overall interrogative structure containing them) or not (Radford, 2004). Following Hawkins (2005) and Adger (2003), this study assumes a parametric difference between English and Thai in terms of the strength properties of features of functional heads. In English, the ‘strength’ part of the [*uwh**] feature on C drives *wh*-movement in the formation of open interrogatives. In contrast, in Thai, the [*uwh**] feature is weak and, therefore, the interrogative phrase remains in situ, exhibiting no operator movement.

The lack of the operator movement in the Thai language is evident, given the fact that Thai interrogative phrases remain in situ (Iwasaki & Horie, 2005; Ruangjaroon, 2007; Timyam, 2015). That is, an interrogative phrase is located within a clause, in the same pattern in which a non-interrogative word having the same grammatical role would occur. Furthermore, according to Ruangjaroon (2007), island effects—which are *wh*-movement constraints—are absent in Thai open interrogatives, suggesting no operator movement. *Wh*-in-situ arguments and *wh*-adjuncts can occur in any island without bringing about any island effects as in, for example, (3).

(3) a. k^hun tɕ^hɔ:p plɛŋ [t^hi: k^hray rɔ:ŋ]
 you like song that **who** sing

*Who did you like the song such that X sang?

b. k^hǎw t^hù:k lây-ò:k [p^hrɔ? (k^hǎw) k^hǎ-mo:j **aray**]
 he PASS fire because (he) steal **what**

*What was he fired because he stole?

(Ruangjaroon, 2007, p. 87)

In (3a) and (3b), /k^hray/ ‘who’ and /aray/ ‘what’ occur in a relative clause island and an adjunct island, respectively. Both sentences are grammatical sentences. If the formation of Thai open interrogatives underwent *wh*-operator movement, they would be expected to be ungrammatical. Thus, an absence of any island effects strongly suggests that Thai open interrogatives do not involve both covert and overt *wh*-movements.

To sum up, English open interrogatives are derived by the *wh*-operator movement, which is driven by the strong [*uwh**] feature on C. In Thai, the [*uwh*] feature is weak, and therefore there is no motivation for the *wh*-movement. The lack of the *wh*-operator movement in Thai open interrogatives is corroborated by the fact that the *wh*-interrogative remains in situ and that there are no island constraints.

2.3.2.2 Open interrogatives with embedded clauses

According to Adger (2003), open interrogatives can contain embedded clauses, as in ‘What did Jason think [(that) Medea had poisoned]?’ (p.300). He refers to this

kind of interrogatives as long distance questions, where the *wh*-movement operation is local and takes place in two steps. That is, the *wh*-phrase first moves into the specifier of the embedded CP, and then to the specifier of the matrix CP. In English, subject and object extraction out of embedded clauses are allowed (Tsimplici & Dimitrakopoulou, 2007). When the subject is extracted, an overt complementizer ‘that’ must be omitted, as in ‘Who did he say left?’ (p.220). If the object is extracted, either an overt or a null complementizer can be present, as in ‘Who did you say (that) you saw?’ (p.220). In both cases, resumptive pronouns are not allowed in a trace—i.e., an empty (null) position which is left behind when some element such as *wh*-phrases undergoes movement, as in ‘*Who did he say she left?’ and ‘*Who did you say (that) you saw him?’.

However, the position of interrogative phrases in Thai remains the same in embedded questions, as in (4):

- (4) k^hǎw bə:k wā: p^hū:-yīŋ k^hon nī: tɕ^hɔ:p k^hraj
 he say that woman CL this like **who**

‘Who did he say that this woman liked?’

(Iwasaki & Ingkaphirom, 2005, p.291)

2.3.2.3 Pronoun retention in English and Thai

As mentioned in the earlier section, English open interrogative clauses do not allow a resumptive pronoun in a trace—i.e., an empty position which is left behind when some element such as *wh*-phrases undergoes movement. In contrast, Thai does

allow the use of resumptive pronouns in a few structures, the most prominent of which is the relative clause (Yaowapat, 2005). Because the current study takes Thai L1 learners' ability to detect pronoun retention as its evidence for the L2 acquisition of English *wh*-operator movement, it is worth considering the nature of this structure in Thai.

According to Xiaorong (2007), resumptive pronouns—ones which are retained or copied, are not normally allowed in English relative clauses. If they occur, the sentences will be ungrammatical as in (5).

- (5)
- a. *The man who **he** met the girl
 - b. *The man whom the girl met **him**
 - c. *The man whom the girl gave a book to **him**
 - d. *The desk that the girl put a book on **it**
 - e. *The man who the girl took **his book**
 - f. *The man whom the girl is taller than **him**

(Xiaorong, 2007, p.3)

The resumptives are marked in bold: *he* in (5a), *him* in (5b), *him* in (5c), *it* in (5d), *his book* in (5e), and *him* in (5f).

Similarly, as shown in (6), resumptive pronouns in embedded clauses in English *wh*-interrogatives are considered ungrammatical (Tsimpli & Dimitrakopoulou, 2007).

- (6) a. *What did you say that Maria forget **it** when she was leaving home?
 b. *What do you think that **it** makes the book very interesting?

(Tsimpli & Dimitrakopoulou, 2007, p.242)

In Thai, since the interrogative phrase remains in situ, pronoun retention is not found in *wh*-interrogatives. Nevertheless, this linguistic phenomenon can occur in Thai relative clauses, which are formed by either the gap strategy or the pronoun retention strategy (Yaowapat, 2005; Yaowapat & Prasithratsint, 2008). According to Yaowapat (2005), the resumptive pronoun is optional in relative clauses where the relativized noun phrase is subject, direct object, indirect object, or possessor, as in (7a-7d, respectively).

- (7) a. **(subject)**

mǎ: [tʰɪ: **man** kin kʰen-sɪam] mák tɕá? kʰɛŋ-rɛ:ŋ

dog REL **it** eat calcium often will healthy

‘Dogs which take calcium are often healthy.’

- b. **(direct object)**

mǎ: [tʰɪ: kʰun rák **man** mâ:k] taj lé:w

dog REL you love **it** much die already

‘The dog which you love a lot has died.’

c. (indirect object)

dèk [t^hɿ: tɕ^hǎn hây ɲən (kɛ:) k^hǎw] ʔa:-yú? hâ
 child REL I give money to s/he age five
 k^hùap
 years

‘The child to whom I gave some money is five years old.’

d. (possessor)

p^hú:-tɕ^ha:y [t^hɿ: mǎ (k^hɔ:ŋ) k^hǎw nǐ: pay] kamlan
 man REL dog of s/he run go PROG
 sâw
 sad

‘The man whose dog ran away is sad.’

(Yaowapat, 2005, p.129)

Likewise, resumptive pronouns are also found in embedded clauses within Thai relative clauses (Yaowapat, 2005). They are optional for relativized subjects, direct objects, and indirect objects, and possessor, as in (8a-8d, respectively).

(8) a. (subject)

p^hú:-tɕ^ha:y [t^hɿ: dèk k^hɿt [wâ: k^hǎw ti: mǎ:]]
 man REL child think that he hit dog
 nǐ: pay lé:w
 run away go already

‘The man that the child thinks hit the dog ran away.’

b. (direct object)

mǎ: [tʰi: dək kʰit [wā: pʰu:-tɕʰa:y ti: man]]

dog REL child think that man hit it

nǐ: pay lé:w

run away go already

‘The dog that the child thinks the man hit ran away.’

c. (indirect object)

dək [tʰi: tɕʰǎn rú: [wā: pʰu:-tɕʰa:y hay ɲʌʔn

child that I know that man give money

kʰǎw]] pen nák-rián

him be student

‘The child to whom I know the man gives some money is a student.’

d. (possessor)

pʰu:tɕʰa:y [tʰi: tɕʰǎn rú: wā pʰanraya: kʰɔŋ

man REL I know that wife of

kʰǎw pùay mây ma:

he sick not come

‘The man whose wife I know is sick doesn’t come.’

(Yaowapat, 2005, p.132)

All in all, English open interrogatives are formed differently from the Thai counterparts. That is, the formation of the former employs the movement strategy,

which involves the *wh*-operator movement, motivated by the strong uninterpretable [uwh] feature. By contrast, the construction of Thai open interrogatives applies the *in situ* strategy. In addition, while resumptive pronouns are usually not allowed in English interrogatives with or without embedded clauses due to the process of the *wh*-operator movement, they are optional in some Thai structures including relative clauses.



Chapter 3

Methodology

This chapter describes the methodology employed in the current study, including subjects, research instruments, data collection, and data analysis, elaborated on in Sections 3.1-3.4, respectively.

3.1 Subjects

A total of 40 L1 Thai learners of English were recruited for the investigation. They enrolled in the researcher's tutorial class, 'English for University Admission', and were studying in grade 12 at Triam Udom Suksa School at the time of the data collection. The subjects were 17-19 years old and had been studying English in formal education for approximately 14 years. Their exposure to English was restricted to a formal setting. Those who were bilinguals or had studied in international schools or abroad were not included in the study.

To conduct the study, the researcher focused on the acquisition of the *wh*-operator movement in English open interrogatives by learners whose English proficiency was intermediate and advanced. These learners were assumed to be able to appropriately form an English interrogative. As a result, the subjects were divided into two proficiency groups—intermediate and advanced, based on their test scores on the Oxford Quick Placement Test (OQPT), which consists of 60 items in the multiple-choice format assessing reading, vocabulary, and grammar. The intermediate

group's OQPT scores ranged from 38 to 46, while the advanced group scored higher than 48. The average score of the former group was 41.45, and that of the latter 51.10. It should be noted that the study did not include elementary English learners so as to avoid obtaining random and invalid results, since the structures in question might be too complex and unfamiliar to elementary English learners. In addition to the two L1 Thai groups, a control group of five native speakers was also included. The L1-English natives were all American and had a Bachelor's degree.

The details of the three groups, their average ages and scores on OTP are illustrated in Table 1.

| Groups | Numbers | Average ages | Score ranges | Average scores |
|----------------|---------|--------------|--------------|----------------|
| Intermediate | 20 | 17.60 | 38-47 | 41.45 |
| Advanced | 20 | 17.75 | 48-59 | 51.10 |
| Native Control | 5 | 32.4 | - | - |

Table 1 The number of subjects, the average ages, and the average scores

3.2 Research Instruments

Section 3.2.1 describes the two tasks that were employed to collect data in the experiment, and Section 3.2.2 explains the validity test, i.e., the procedure that was carried out to validate the tasks.

3.2.1 The Tasks

To determine learners' grammatical knowledge, virtually all studies in the literature review, which investigated L2 acquisition of the *wh*-operator movement, employed grammaticality judgement tests (GJT) *exclusively* (Amornwongpeeti & Pongpairoj, 2013; Çele & Gürel, 2011; Hawkins & Chan, 1997; Kong, 2011; Li, 1998; Prentza, 2012; Rezaeian, Abedini & Sadighi, 2015; Schachter, 1989, 1990; Tayyebi, 2011; Tsimpli & Dimitrakopoulou, 2007). Only White and Juffs (1998) used both a GJT and a production task, namely a question formation task. In the current study, both the GJT and the question formation task were administered to the participants.

3.2.1.1 *The question formation task (QFT)*

Because of the rarity of open interrogatives with embedded clauses in natural production, the question formation task was designed to elicit learners' production data. The participants were asked to change the given statements into open interrogatives. It consisted of twelve statements. Six of the sentences under investigation were concerned with subject extraction, and the other six with object extraction out of an embedded clause.

Each sentence under investigation contained an embedded clause functioning as a verb complement. Either the subject or the object in an embedded clause was underlined, and the learners would form a question asking for that piece of information (the underlined phrase). Each accompanying open interrogative was introduced by a corresponding interrogative phrase (i.e. 'what' or 'which' + a noun)

together with a fixed pattern of an auxiliary ‘did’ + a subject + a main verb (such as ‘did John suggest’)⁵. The learners needed to complete the rest of the clause.

Examples are provided below in (1) and (2):

- (1) a. James thought a condo was more comfortable than a house.
What did James think _____?
- b. Bam said ‘Harry Potter’ was her favorite movie.
Which movie did Bam say _____?
- (2) a. Richard remembered her sister ate a sandwich in the morning.
What did Richard remember _____?
- b. Jason remembered his close friend played ‘Harvest Moon’ yesterday.
Which game did Jason remember _____?

The example items in (1) involved subject extraction out of an embedded clause, whereas those in (2) involved object extraction.

To keep variables as constant as possible, all the embedded clauses were introduced by a null complementizer (i.e., without ‘the’). Besides, interrogative

⁵ In the pilot study, the researcher provided the participants with only a corresponding interrogative phrase without this accompanying pattern. It was found that 33.33% of the elicited open interrogatives in the question formation task involved clause reduction. That is, instead of constructing an open interrogative which contained an embedded clause, the participants produced one without it. For example, the target form was supposed to be ‘What did John suggest should be announced at the meeting?’. However, some participants wrote ‘What should be announced at the meeting?’. Thus, in the current experiment, the researcher provided a fixed pattern of an auxiliary ‘did’ + a subject + a main verb, which comprised the whole matrix clause, in order to avoid potential clause reduction as found in the pilot study.

phrases denote only inanimate entities, so only ‘what’ and ‘which’ + a noun were employed in this task. In a main clause, the subject was a third person singular animate proper noun, and the verb was past tense. The embedded clause contained the verb in the present tense.

All of the test items were organized in a random manner. The participants were given 40 minutes to complete the task and were also asked not to go back and change the answers so that their response would be as spontaneous as possible.

As for data analysis, each elicited sentence was deemed correct if the learners formed a question without supplying a resumptive pronoun ‘it’. On the other hand, a sentence in which a resumptive ‘it’ was produced was considered incorrect. In addition, because the study mainly focused on L1 Thai learners’ acquisition of the *wh*-operator movement, which concerned pronoun retention, other types of errors such as incorrect verb tense or incorrect verb forms were regarded irrelevant and thus were not taken into account.

3.2.1.2 *The grammaticality judgement task (GJT)*

In addition to a question formation task, a grammaticality judgement task was also used as part of the experiment. This kind of task was designed to investigate learners’ subconscious competence, and it has enjoyed widespread popularity among studies on L2 acquisition of the *wh*-operator movement such as Adger (2003), Amornwongpeeti and Pongpairoj (2013), Çele and Gürel (2011), Hawkins (2005), Hawkins and Chan (1997), Johnson and Newport (1991), Kong (2011), Martohardjono

(1993), Prentza (2012), Rezaeian, Abedini and Sadighi (2015), Schachter (1989, 1990), Tayyebi (2011) and Tsimpli and Dimitrakopoulou (2007).

For each test item, a complete sentence was given. The participants were asked to judge whether the sentence is grammatical or not. If the sentence was rendered ungrammatical, they were further asked to provide a correction. An example was provided below in (3-4).

(3) _____ Which movie do you believe it was most widely acclaimed last year?

(4) _____ Which game did Carol say Paul enjoyed playing last week?

To illustrate, in (3), the participants are supposed to judge the interrogative as incorrect because the resumptive pronoun 'it' is not allowed in the gap position in an embedded clause as a result of *wh*-movement. If this sentence was considered ungrammatical, the participants should mark **X** in the given blank and delete the resumptive pronoun 'it'. On the other hand, in (4), the interrogative is grammatical, since no *wh*-movement constraint is violated. If the participants considered it correct, they should mark **✓** in the blank before the sentence.

The GJT comprised 30 sentences, sixteen of which were related to open interrogative clauses of interest in this study. These sentences were open interrogatives which contained embedded clauses, and they could be categorized into two main groups: eight sentences were grammatical sentences, and the others were ungrammatical sentences which involved pronoun retention. Each group was further

divided according to the extraction site. The distribution of items in the GJT is shown in Table 2.

| Main groups | Extraction site | Examples | Distribution |
|-----------------------------------|--------------------|--|--------------|
| Grammatical open interrogatives | subject extraction | What did Jennifer believe made her mother so happy yesterday? | 4 |
| | object extraction | What did Kathy think Peter hated when he was a child? | 4 |
| Ungrammatical open interrogatives | subject extraction | *What did Matthew believe <u>it</u> made this book famous in the old days? | 4 |
| | object extraction | *What did Jack think Susan forgot <u>it</u> when she was leaving home? | 4 |

Table 2 The distribution of items in the GJT

Similar to the first task, the variables in the GJT was kept as constant as possible. Two types of interrogative phrases, i.e., ‘what’ and ‘which’ + a noun, were examined in this study; both of them referred to inanimate entities. In a main clause, the subject was a third person singular animate proper noun, and the verb was past tense. In an embedded clause, the verb was past tense.

Apart from sixteen items under investigation, the GJT also included additional fourteen items as distractors. All of the 30 test items were distributed in a random fashion.

The subjects were allocated 30 minutes to complete this task, and they were also asked not to recheck their answers, just like in the previous task.

It is worth noting that, in the analysis of the grammatical items, the results were analyzed as “correct” if the subjects did not supply an ungrammatical resumptive pronoun ‘it’, whether their check mark was ✓ or ✗. The results were considered “incorrect” when the subjects judged a well-formed sentence as ungrammatical and supplied a resumptive pronoun ‘it’

As for the ungrammatical items, the results were interpreted as “correct” when the subjects could judge a sentence with a resumptive ‘it’ as ungrammatical and mark ‘it’ with a cross accordingly. If the subjects failed to mark an ungrammatical resumptive with a cross, irrespective of what their check mark was, the results were deemed “incorrect”.

3.2.2 Validity test

It should be noted that previous to the data collection, both tasks were verified for their content validity based on the Index of Item-Objective Congruence (IOC), which was developed by Rovinelli and Hambleton (1976) and had been widely employed to evaluate whether test items can properly and adequately measure the abilities or knowledge they are aimed to measure. Each test item was rated by three

experts, all of whom were university lecturers and would give one point if the test item was considered congruent with the objective of the test, zero point if they were not certain whether the test item was congruent or incongruent with the objective of the test, or minus one point if the test item is deemed incongruent with the objective of the test. For each item, the scores from the three experts were calculated by the formula illustrated in (5).

$$(5) \quad \text{IOC} = \frac{\Sigma R}{N}$$

ΣR = the aggregate of the experts' scores

N = the number of experts

The scores of each item had to be higher than 0.5 to be considered capable of measuring the objective of the task. All of the items that were incorporated in both tasks passed the IOC, with the sentence production task scoring 1 on average and the grammaticality judgement task scoring 0.979 on average.

3.3 Data Collection

The whole process of the data collection was carried out in regular English tutorial classes, of which the researcher was in charge. All of the 40 participants took the Oxford Quick Placement Test (OQPT) and were categorized into the intermediate and advanced groups according to their scores.

In the week following, the tasks were given to the participants in a regular classroom without prior notice so that the results would reflect the participants' spontaneous knowledge. First, the researcher presented a brief introduction related to

the data collection. The subjects were told that the task would be administered to examine their knowledge of English grammar, and they were advised to try their best in doing it. Then, they were asked to fill out a short questionnaire about themselves before the researcher explained the instructions in Thai to make sure that they clearly understood them. They were also told to take no more than 40 minutes to complete each task. Moreover, the participants were reminded not to recheck and change their answers.

As for the data collection, the QFT was first administered to each of the participants, and when they completed the task, they were asked to turn it in at once. Then, the GJT was given to them each, and they were again asked to submit the completed task immediately after it was finished. The QFT had been administered first so that the participants could not see the complete strings of correct or incorrect open interrogatives and get biased from the GJT.

Chapter 4

Results and Discussion

This chapter presents and discusses the results obtained from the study. Section 4.1 offers an overview of the results from both the Question Formation Task (QFT) and the Grammaticality Judgement Task (GJT). Section 4.2 and 4.3 elaborate on the results from the QFT and those from GJT, respectively. The results were, then, discussed in relation to the hypotheses in Section 4.3.

4.1 Overall Results from the QFT and the GJT

| Accuracy Scores Groups | The QFT | | The GJT | |
|---------------------------|------------|------------|------------|------------|
| | Raw scores | Percentage | Raw scores | Percentage |
| Intermediate | 177/240 | 73.75% | 178/320 | 55.63% |
| Advanced | 222/240 | 92.5% | 231/320 | 72.18% |
| Control | 60/60 | 100% | 80/80 | 100% |

Table 3 The overall results from the QFT and the GJT by the intermediate, advanced, and control

By and large, both L2 groups' average accuracy scores from the QFT (73.75% for the intermediate group and 92.5% for the advanced group) were clearly higher than those from the GJT (55.63% and 72.18%, respectively). In the QFT, the production task, the advanced group scored higher than 80%, indicating that their

elicited open interrogatives *appeared* to have little difficulty omitting resumptive pronouns⁶. However, in the GJT, a perception task, both groups scored lower than 80%, which strongly suggests they had difficulty recognizing that resumptive pronouns are ungrammatical in English, and thus, may have not acquired the *wh*-operator movement for the formation of English open interrogatives. This point will be discussed further in Section 4.4 below.

On the other hand, the control group's average accuracy scores were 100% in both tasks, which indicated that the English native speakers encountered no problems at all with respect to the use of ungrammatical resumptive pronouns. That is, in the QFT, they did not supply any resumptive pronoun 'it' when forming open interrogatives. Likewise, in the GJT, they correctly accepted all grammatical items and accurately rejected all instances of the resumptive pronoun 'it'. It should be noted that, as the scores of the control group will be presented in this overall result section only, since they were all 100% accurate, so as to keep focus on the learners' data.

⁶ The 80% criterion for acquisition is widely acknowledged in SLA, according to Tarone, Gass and Cohen (1994).

Figure 1 below presents the overall results from both tasks.

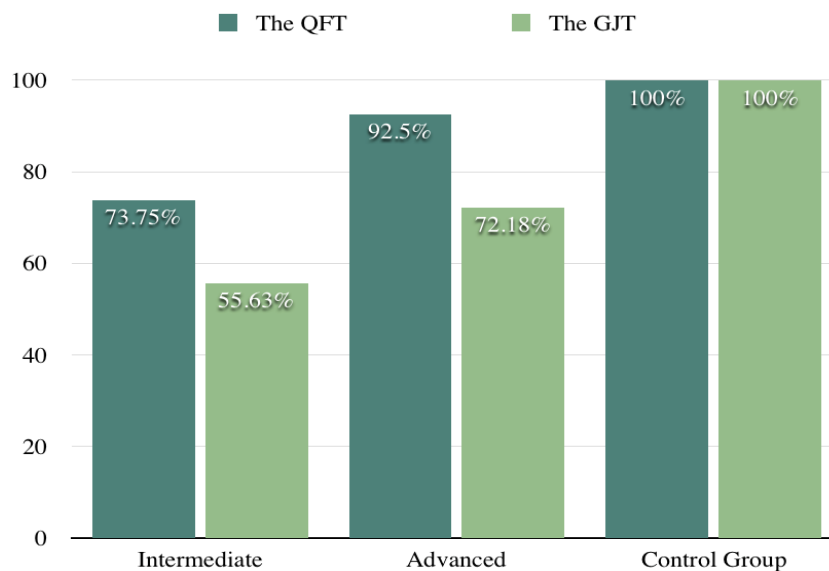


Figure 1 Average accuracy scores in the QFT and the GJT by the intermediate, advanced, and control groups

4.2 Task 1: Question Formation Task

The results from the first task, the QFT, are illustrated below. Section 4.2.1 presents the overall results, and Section 4.2.2 unveils the results in relation to the extraction site.

4.2.1 Overall Results

The overall performance of the intermediate and advanced groups in the production task is presented in Table 4 below.

| Accuracy Groups | Correct | | Incorrect | |
|--------------------|------------|------------|------------|------------|
| | Raw scores | Percentage | Raw scores | Percentage |
| Intermediate | 177/240 | 73.75% | 63/240 | 26.25% |
| Advanced | 222/240 | 92.5% | 18/240 | 7.5% |

Table 4 The overall results from the QFT by the intermediate and advanced groups

For each group of the L2 learners, the total of 240 open interrogatives were collected and analyzed. For the intermediate group, 177 of the elicited sentences were correct, accounting for 73.75%. Resumptive pronouns were used in the rest, that is, 63 sentences, which made up 26.25% of the total. On the other hand, the advanced learners performed much more accurately. They constructed 222 open interrogatives correctly, comprising 92.5%, and supplied a resumptive pronoun 'it' in the other 18 sentences, making up 7.5% of the total.

Compared to the L2 groups' production, the rate of accurate interrogative formation by the control group was 100% as the English natives produced no resumptive at all in the QFT. It can be seen that while the native speakers did not use resumptive pronouns at all, the L2 learners still relied on them.

From the results above, there was a strong proficiency-related progression. That is to say, the higher the level of proficiency, the less ungrammatical resumptive pronoun suppliance. While the intermediate group was the most likely to use the resumptive 'it', the advanced group supplied it much less frequently. However, unlike the other groups, the native subjects did not retain a resumptive pronoun at all. To

see the trend more clearly, Figure 2 is provided below, which shows average scores in the formation of open interrogatives by the two groups.

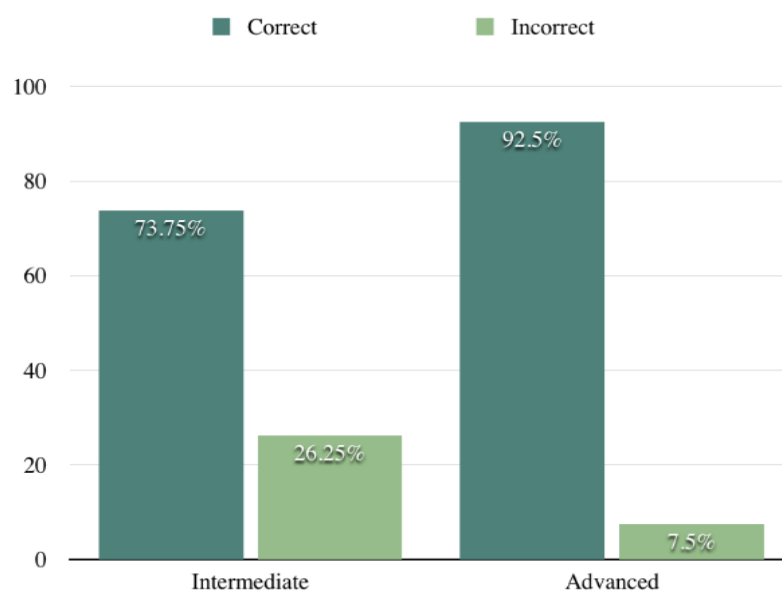


Figure 2 Average scores on question formation by the intermediate and advanced groups

4.2.2 Results in Relation to the Extraction Site

This section shows the results in relation to the extraction site—that is, whether the interrogative phrase is extracted from the subject position or the object position of the embedded clause. Table 5 displays both the raw and the average scores from the question formation task, categorized according to the extraction site.

| Extraction Sites Groups | Subject Extraction | | Object Extraction | |
|----------------------------|--------------------|------------|-------------------|------------|
| | Raw scores | Percentage | Raw scores | Percentage |
| Intermediate | 60/120 | 50% | 117/120 | 97.5% |
| Advanced | 103/120 | 85.83% | 119/120 | 99.17% |

Table 5 Results from the QFT in relation to the extraction site

As for the subject extraction, those with lower proficiency were apt to form open interrogatives incorrectly, supplying a resumptive pronoun 'it'. The intermediate learners' average score was 50%, while that of the advanced learners was 85.83%. In contrast, the accuracy rates of question formation with object extraction by both groups were relatively similar. The average scores of the intermediate and advanced groups were 97.5% and 99.17%, respectively. The performance of the advanced group in forming interrogatives with object extraction (99.17%) was almost as accurate as that of the natives (100%). For a clearer illustration, the average scores are presented in Figure 3 below.

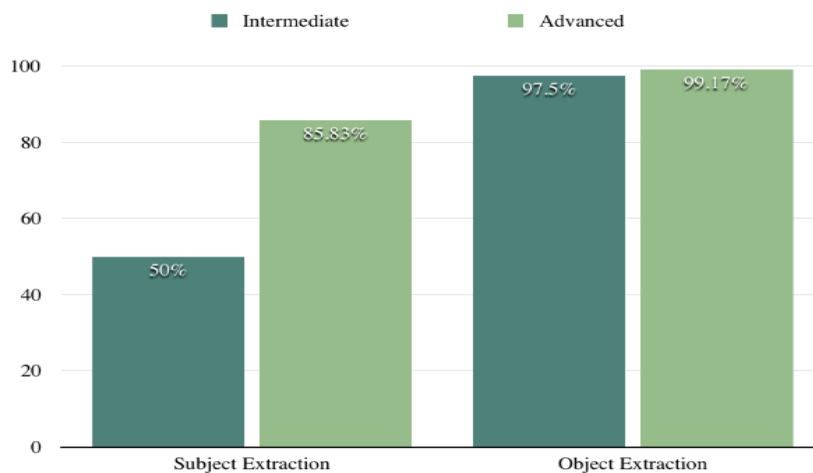


Figure 3 Average scores on the accuracy of the question formation in relation to the extraction site

4.3 Task 2: Grammaticality Judgement Task (GJT)

The results from the second task, the GJT, are described below. Section 4.3.1 reports the overall results, and Section 4.3.2 presents the accuracy scores based on the extraction site.

4.3.1 Overall Results

Raw and mean scores of the test items by the intermediate and advanced groups were calculated and illustrated in Table 4 below.

| Accuracy Groups | Grammaticality Judgement Task | |
|--------------------|-------------------------------|-------------------|
| | Raw scores | Percentage scores |
| Intermediate | 178/320 | 55.63% |
| Advanced | 231/320 | 72.18% |

Table 4 The overall results of the GJT by the intermediate and advanced groups

The results collected from the GJT were analyzed from the total of 640 test items—to be more specific, 320 each by the intermediate and advanced groups. Similar to the QFT, the results showed the proficiency-related progression. The advanced group could perform better than the intermediate group. That is, the intermediate learners could judge 178 out of 320 sentences correctly, which accounts for 55.63% of the total, while the advanced learners' judgement was accurate in 231 out of 320 sentences, comprising 72.18% . It should be noted that, as described in 4.1, the control subjects' judgement was all correct (100%), and, thus, clearly surpassed both L2 groups.

The average scores from the GJT are illustrated in Figure 4 below.

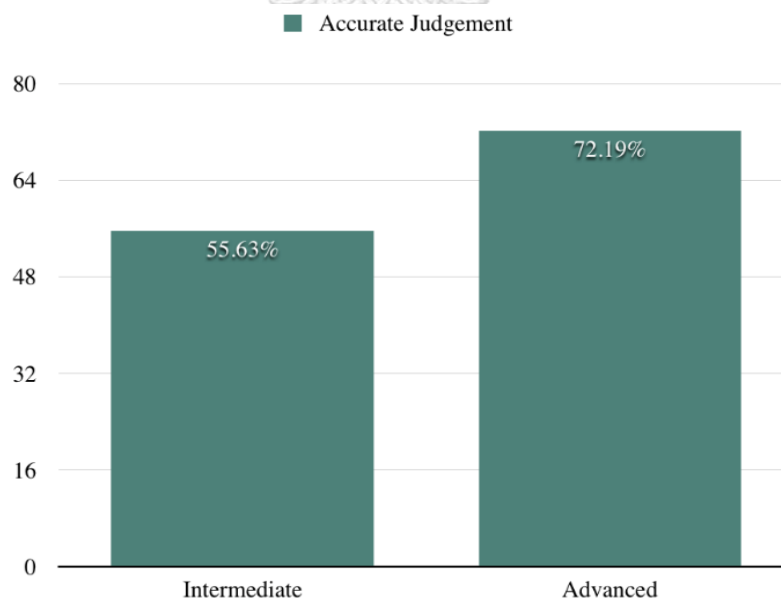


Figure 4 Average scores on the accurate judgement by the intermediate and advanced groups

4.3.2 Results in Relation to Types of Test Sentences

Essentially, this subsection shows the ability of both groups to detect an ungrammatical resumptive pronoun ‘it’ in an embedded clause within an open interrogative. Table 6 below displays the two groups’ raw and percentage scores in the judgement accuracy in relation to grammatical and ungrammatical sentences.

| Sentence Types Groups | Grammatical Sentences | | Ungrammatical Sentences | |
|--------------------------|-----------------------|------------|-------------------------|------------|
| | Raw scores | Percentage | Raw scores | Percentage |
| Intermediate | 138/160 | 86.25% | 40/160 | 25% |
| Advanced | 149/160 | 93.13% | 82/160 | 51.25% |

Table 6 Results from the GJT in relation to types of test sentences

With the 100% rate of judgement accuracy for both types of test sentences, the native speakers obviously outdid the other groups. While the intermediate group’s average scores were the lowest in both grammatical and ungrammatical sentences (86.25% and 25%, respectively), the advanced group performed relatively better, with average scores 93.13% (+6.88%) for grammatical sentences and 51.25% (+26.25%) for ungrammatical sentences.

The results demonstrate that the L2 learners tended to accept grammatical sentences, but failed to detect a resumptive pronoun ‘it’ in ungrammatical sentences. Besides, the proficiency-related progression is evident: the advanced group was better than the intermediate counterpart at accepting grammatical sentences and *much*

better at rejecting pronoun retention. However, an enormous gap between the natives' and the advanced learners' ability to detect and reject pronoun retention can be seen. These trends are also presented in Figure 5 below for a clearer picture.

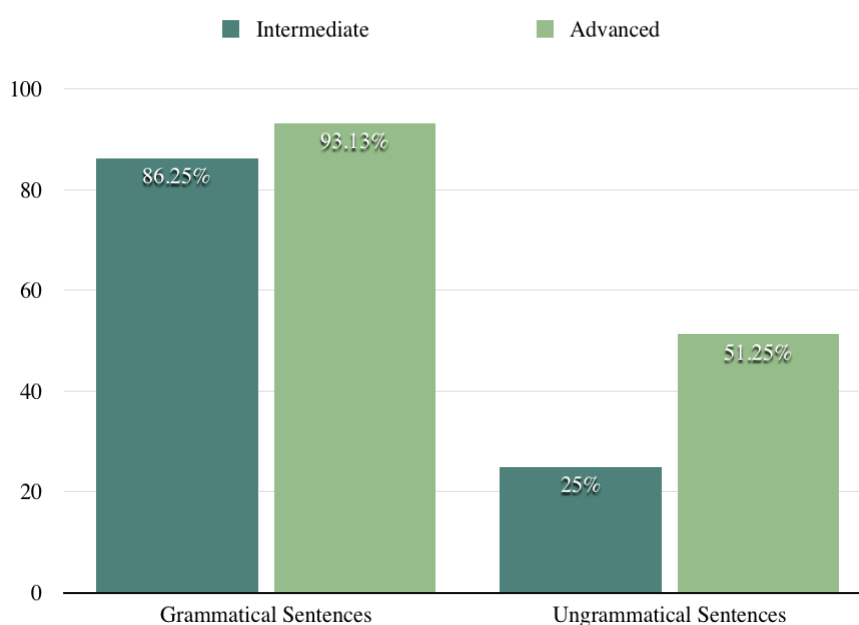


Figure 5 Average scores on the judgement of grammatical and ungrammatical sentences by the two groups

4.3.3 Results in Relation to the Extraction Site

This subsection demonstrates whether subject extraction and object extraction out of an embedded clause within an open interrogative can affect the judgement accuracy. The overall results are summarized in Table 7.

| Extraction Sites Groups | Subject Extraction | | Object Extraction | |
|----------------------------|--------------------|------------|-------------------|------------|
| | Raw scores | Percentage | Raw scores | Percentage |
| Intermediate | 75/160 | 46.88% | 103/160 | 64.38% |
| Advanced | 104/160 | 65.44% | 127/160 | 79.36% |

Table 7 The overall results from the GJT in relation to the extraction site

The results of the judgement accuracy from the GJT in relation to the extraction site bore a close resemblance to those from the question formation task. Generally, the rate of judgement accuracy was lower when the subject is extracted out of an embedded clause. That is, the intermediate and the advanced learners' judgement in subject extraction items (46.88% for the former and 65.44% for the latter) was less accurate than their judgement in object extraction items (64.39% and 79.36, respectively). Nevertheless, the accuracy rate for the judgement of object extraction sentences in the GJT was comparatively lower than that in the production task, where hardly any resumptive pronoun 'it' was supplied in the object position of the embedded clause. Figure 6 below exhibits the aforementioned trend.

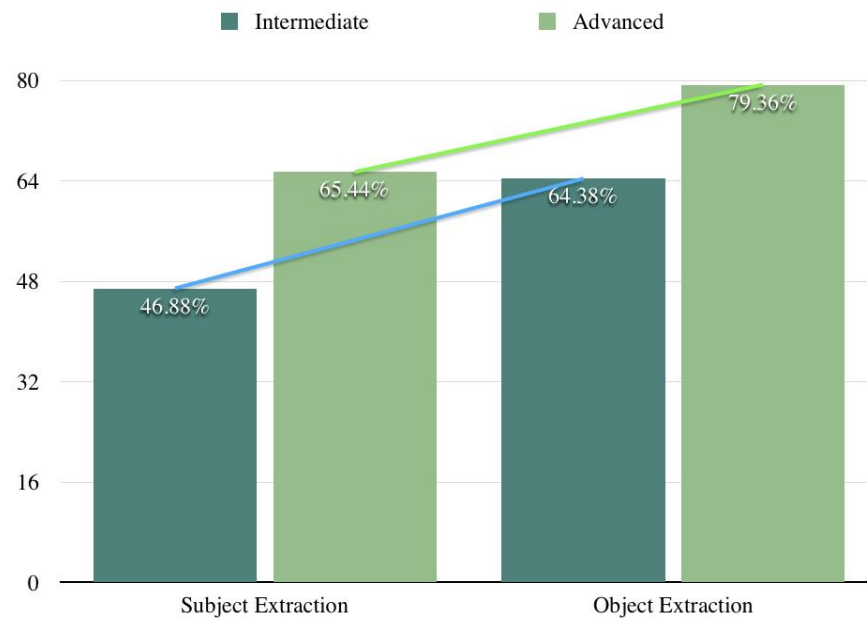


Figure 6 Average scores on the accuracy of the GJT in relation to the extraction site

Tables 8 presents more elaborate results from the GJT, detailing an interaction between the extraction site and the types of test sentences.

| Extraction Site Groups | Subject Extraction | | | | Object Extraction | | | |
|-------------------------------|-----------------------|------------|-------------------------|------------|-----------------------|------------|-------------------------|------------|
| | Grammatical Sentences | | Ungrammatical Sentences | | Grammatical Sentences | | Ungrammatical Sentences | |
| | Raw scores | Percentage | Raw scores | Percentage | Raw scores | Percentage | Raw scores | Percentage |
| Intermediate | 60/80 | 75% | 15/80 | 18.75% | 78/80 | 97.5% | 25/80 | 31.25% |
| Advanced | 70/80 | 87.5% | 34/80 | 42.5% | 79/80 | 98.75% | 48/80 | 60% |

Table 8 Detailed results from the GJT showing an interaction between the extraction site and the types of test sentences.

Generally, as for the grammatical items, the subjects were prone to judge them correctly, irrespective of the extraction site. There was, nonetheless, a readily discernible difference between the judgement of grammatical interrogatives with subject extraction and the judgement of grammatical interrogatives with object extraction. That is, while the former showed a proficiency-related progression (75% for the intermediate group and 87.5% for the advanced group), the latter exhibited similar results from both groups, whose judgement was almost totally accurate (97.5% for the intermediate group and 98.75% for the advanced group).

As for the ungrammatical items, the L2 subjects tended to fail to detect the resumptive pronoun 'it', compared with the control subjects who could identify *all* instances of pronoun retention. To be more specific, the rates of judgement accuracy

for ungrammatical items by both groups of L2 learners were remarkably lower than that by natives. In the light of the possible impact of the extraction site, both L2 groups scored slightly higher for the judgement of ungrammatical interrogatives with object extraction (31.25% for the intermediate group and 60% for the advanced group) than those with subject extraction (18.75% for the intermediate group and 42.5% for the advanced group). Furthermore, the ability to detect an ungrammatical resumptive pronouns seemed to progress along English proficiency levels. The advanced learners were able to detect pronoun retention much better than the intermediate counterparts.

Figure 7 illustrates the trends described earlier.

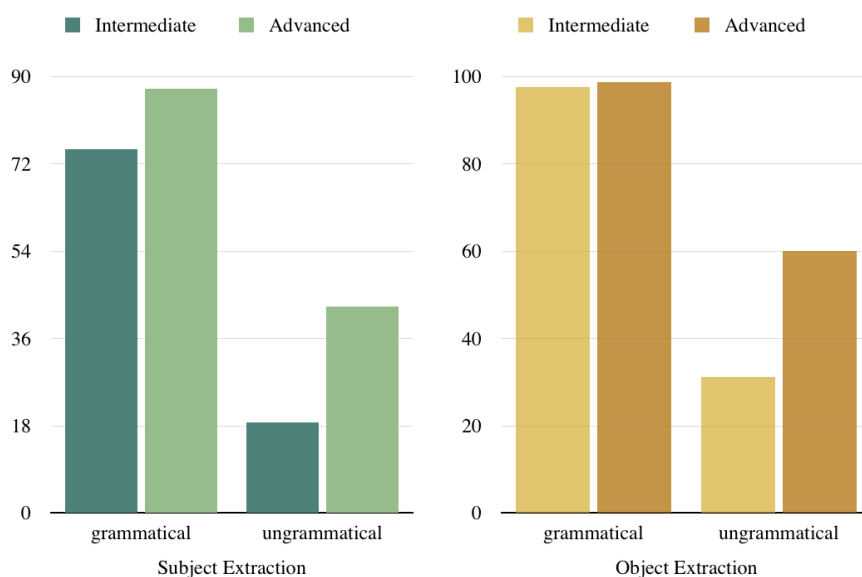


Figure 7 Average scores on the accuracy of the GJT in detail

4.4 Discussion

Section 4.4.1 discusses the results with regard to L2 acquisition of the *wh*-operator movement and the Failed Functional Features Hypothesis. Section 4.4.2 offers a possible explanation for the asymmetry between subject and object extraction found in the study.

The discussion will be made in light of the hypotheses in (1.3), repeated here for convenience:

1. Based on the FFFH, L1 Thai learners fail to acquire English open interrogatives by means of the operator movement due to the lack of the strong uninterpretable [*uwh*] feature in Thai.
2. Variability in English open interrogatives will be evident in both production and perception.
 - 2.1 L1 Thai learners will produce resumptive pronouns in embedded clauses within English open interrogatives.
 - 2.2 L1 Thai learners will have particular difficulties in recognizing that resumptive pronouns are ungrammatical in English.

4.4.1 L2 Acquisition of *Wh*-Operator Movement and The Failed Functional Features Hypothesis (FFFH)

Based on the FFFH, if the participants have acquired the *wh*-operator movement, motivated by the strong [*uwh*] feature in English, their L2 grammars will

observe constraints on movement, and thus, treat sentences which contain pronoun retention as ungrammatical.

In the QFT, the intermediate and advanced subjects occasionally supplied a resumptive 'it' in their elicited sentences (26.25% for the former and 7.5% for the latter). In addition, they tended to use a resumptive 'it' in open interrogatives with subject extraction (50% and 14.17%, respectively) more frequently than those with object extraction where they hardly used one at all (2.5% and 0.83%, respectively). It is tempting to believe that the *wh*-operator movement can be acquired by L1 Thai learners as seen from the fact that the advanced group's suppliance rate of the resumptive was remarkably low and close to that of the native group, especially when the *wh*-phrase is extracted out of the object position. Nonetheless, the learners' low rate of pronoun retention may not have resulted from the *wh*-operator movement, but rather from the fact that the Thai language *optionally* allows resumptive pronouns in some other structures such as relative clauses (See 2.3.2.3). Therefore, because the L1 Thai learners can either insert or omit a resumptive 'it', they may have preference over the omission, resulting in the relatively low rate of pronoun retention suppliance in the QFT.

On top of their preference for omission, the L2 learners' low suppliance rates of resumptive pronouns may be ascribed to the rare use of pronoun retention in written Thai. According to Prasithratsint (2006), pronoun retention is not frequently employed in writing, but it is often found in spoken Thai. The higher rates of the L2

learners' resumptive omission seem to correspond to the nature of the production task of the present study, which was designed to elicit written rather than spoken data.

In the GJT, the results seemed to offer even more convincing evidence that the L2 learners did not acquire the *wh*-operator movement and were profoundly influenced by L1. Although the ability to detect a resumptive pronoun seemed to progress along with proficiency levels, the rates of judgement accuracy by the intermediate and advanced groups were low (55.63% for the former and 72.18% for the latter), indicating that both groups failed to observe *wh*-constraints on movement and, thus, did not employ the movement strategy as did the English native speakers. A closer look into the data relating to their judgement of ungrammatical sentences reveals even lower accuracy rates (25% and 51.25%, respectively), which strongly supports that both groups did not and could not acquire the *wh*-operator movement, triggered by the strong uninterpretable [*uwh*] feature in English. Their judgement of grammatical sentences, in contrast, showed a much higher accuracy rates (86.25% and 93.13%, respectively). Nevertheless, like the results from the QFT, this might not have resulted from the *wh*-operator movement, but the optionality of resumptive pronouns in some Thai structures. As a consequence, absence of resumptive pronouns in the experimental grammatical sentences can also be considered correct for L1 Thai learners of English. It is, thus, not surprising if the participants treated both

these grammatical and ungrammatical interrogatives containing resumptive pronouns as correct.

A more careful examination of the elicited sentences in the QFT additionally revealed a surprising trend. The use of resumptive pronouns by some participants in both intermediate and advanced groups was *random*. That is, for instance, in one item, an L2 learner supplied the resumptive pronoun 'it', while in another, he or she did not supply it. The nature of their use of resumptives seems to correspond to that of the GJT. In both tasks, a large number of grammatical interrogatives (i.e. those without pronoun resumption) were accepted (in the GJT) or produced (in the production task). Likewise, a somewhat great proportion of ungrammatical interrogatives (i.e. those with pronoun resumption) were also accepted or produced. This variability seems to reflect L1 influence: in some structures, resumptive pronouns can be present or absent without affecting grammaticality. Besides, this non-systematic variability appears to suggest that the L2 learners' syntactic representations may be impaired owing to L1/L2 differences in syntax.

Considering the results, the strongest evidence that the L2 learners failed to acquire the *wh*-operator movement came from those from the GJT, where the subjects in both proficiency groups failed to detect, and thus, accepted ungrammatical resumptive pronouns in embedded clauses. If they had acquired the *wh*-operator movement, they should have detected and rejected most, if not all, of those ungrammatical sentences with pronoun retention. In addition, their failure to acquire

the *wh*-operator movement can be seen from their variable use of resumptive pronouns, which appeared to be random rather than systematic. That is, they were prone to produce and accept English open interrogatives either with or without resumptive pronouns. The non-systematic variability strongly suggests that the learners' syntactic representations were syntactically impaired. Last but not least, the accuracy rates of the learner groups differed substantially from those of the native speakers, particularly in the GJT, which suggests their competence was far from native-like. Therefore, the first hypothesis, which states that L1 Thai learners fail to acquire English open interrogatives by means of the operator movement due to the non-existence of the strong uninterpretable [*uwh*] feature in Thai, is confirmed.

Furthermore, the results revealed variability in the L2 learners' production in the QFT; that is, they supplied a resumptive pronoun 'it' in some elicited interrogatives and dropped it in others despite the low suppliance rates, which were probably due to L1 influence as explained earlier. The results from the GJT showed even clearer evidence. As the L2 subjects tended to accept both grammatical interrogatives and ungrammatical counterparts with resumptive pronouns, variability in terms of perception clearly emerged. Therefore, the second hypothesis, which puts forward that variability in English open interrogatives will be evident in both production and perception, is corroborated.

The results also suggest that the Failed Functional Features Hypothesis (FFFH) can account for the data of L1 Thai/L2 English learners in relation to the *wh*-operator

movement. That is, L1 Thai learners of English, whose Thai language has no strong uninterpretable [*uwh*] feature, are not able to attain the target-like syntactic representation of English native speakers in terms of the *wh*-operator movement. More specifically, the strong uninterpretable [*uwh*] feature, which is not instantiated in L1 Thai learners prior to the critical period (See footnote 1), are not accessible, so the *wh*-operator movement triggered by this feature cannot be acquired by L1 Thai learners, leading to L1 Thai learners and L1 English speakers' different mental representations. The data lent vigorous support to previous research on L2 English *wh*-movement which argue for the partial availability of UG, including Adger (2003); Hawkins (2005); Hawkins and Chan (1997); Johnson and Newport (1991); Kong (2011); Prentza (2012); Rezaeian, Abedini and Sadighi (2015); Schachter (1989), and Tsimpli and Dimitrakopoulou (2007). (See 2.2.1)

4.4.2 Asymmetry between Subject Extraction and Object Extraction

One interesting finding worth a discussion is an asymmetry between subject extraction and object extraction in both tasks. In the QFT, the L2 learners in both intermediate and advanced groups tended to supply a resumptive 'it' *much more frequently* in open interrogatives with subject extraction (50% for the intermediate group and 24.15% for the advanced group) than those with object extraction (2.5% and 0.83%, respectively). Similarly, in the GJT, the learners' accuracy rates were lower in judging open interrogatives with subject extraction (46.88% and 65.44%, respectively) than those with object extraction (64.38% and 79.36%, respectively). In

general, two obvious trends were found: (1) the higher suppliance and acceptability rate of resumptive pronouns in the subject position and (2) the higher percentage of incorrect 'it' insertion in grammatical subject interrogatives.

Based on Schachter and Yip (1990), the current study attributes the asymmetry found between subject and object extraction to processing difficulties: Subject extraction requires more effort to process. In an open interrogative with subject extraction, for instance, as in 'What did Charles claim happened last night while we were asleep?', the L2 participants needed to figure out the complement of the first verb 'claim' as well as the subject of the adjacent verb 'happened'. Initially, they may interpret the *wh*-phrase 'what' as the complement of 'claim'. However, as the sentence continues, the verb 'happened' appears and calls for a subject. As a result, the parser has to backtrack to reanalyze the *wh*-phrase 'what' as the subject of 'happened'. Since a backtracking is assumed to demand an additional processing effort (Schachter & Yip, 1990), the participants might resort to some strategy to minimize the processing difficulties involved. Therefore, as evident in the experimental tasks, they supplied or accepted an resumptive pronoun in the subject position, without realizing its ungrammaticality due to L1 Thai influence. The presence of a resumptive 'it' seemed to be at hand and effectively eliminated the need for strenuous backtracking.

In fact, from a closer examination of the QFT and the GJT, not only were both groups of participants inclined to supply a resumptive pronoun 'it' in the subject

position, but most of their incorrect sentences also contained an overt complementizer ‘that’ beginning an embedded clause or both ‘that’ and ‘it’ at the same time even though the presence of a complementizer ‘that’ in an embedded clause out of which the subject was extracted was ungrammatical in English (Radford, 2009). In other words, a substantial number of sentences which L2 learners incorrectly produced or judged demonstrate a remarkably high frequency of ‘it’ and ‘that’. This seems to support the notion that L1 Thai learners might resort to inserting an item without realizing its ungrammaticality, in order to minimize the processing difficulties involved in subject extraction.

In contrast to interrogatives with subject extraction, those involving object extraction requires no backtracking, and as a consequence, less effort is needed. In an open interrogative with object extraction, for example, as in ‘What did Tim claim Gloria sent to her brother yesterday?’, the processing of the sentence can proceed naturally from left to right without any backtracking. What the participants needed to do after reaching the verb ‘claim’ was analyze the noun phrase ‘Gloria’ as the subject of the embedded clause ‘(that) Gloria sent to her brother yesterday’. As parsing continues, the verb ‘sent’ called for a complement and the *wh*-phrase ‘what’ was analyzed as the complement of ‘sent’ spontaneously. Since the sentence could proceed naturally, the participants might have opted to omit a resumptive pronoun in their production despite their assumption that one would also be as natural and grammatical, as seen from the results in GJT where the learners also accepted the

presence of a resumptive 'it'.

Such an asymmetry was in line with previous studies, including Çele and Gürel (2011); Martohardjono (1993); Schachter (1990); Schachter and Yip (1990), and White and Juffs (1998), all of which employed grammaticality judgement tasks and attributed this phenomenon to processing difficulties involved in clauses with subject extraction (See Section 2.2.1).

It should be noted that an asymmetry between subject extraction and object extraction was not found in the results of the native control group, whose scores were 100% accurate in both tasks in the present study. This indicates that the native speakers' formation of open interrogatives was syntactically driven, i.e., by the *wh*-operator movement motivated by the strong uninterpretable [*uwh*] feature. No matter whether open interrogatives were simple (as in those with object extraction) or complex (as in those with subject extraction), they did not appear to negatively affect the production or perception of the English natives. By contrast, since the asymmetry was found in the learner data, the L2 learners' construction of open interrogatives was assumed to rely on their general cognition. That is, when the learners found a subject extraction interrogative more complex, they resorted to the resumptive strategy found in their L1 to cope with extra processing difficulties, and, as a consequence, an asymmetry emerged. The asymmetry found, therefore, strongly suggests that the learners' syntactic representations were impaired and non-target-like, further lending support to the first hypothesis which posits that L1 Thai learners fail to acquire English

open interrogatives by means of the operator movement due to the lack of the strong uninterpretable [*uwh*] feature in Thai.



Chapter 5

Conclusion

This chapter concludes the current study. Section 5.1 concludes the major findings. Some pedagogical implications are provided in Section 5.2. Section 5.3 lists some limitations and provides further suggestions for some gaps that have not yet investigated and could be topics for future research studies.

5.1 Conclusions

The conclusions will be explained with regard to the hypotheses of the study. The second hypothesis, which provides details obtained from the learners' data, will be addressed first, followed by the first hypothesis, which illustrates a much more general picture. Other notable findings not directly related to the hypotheses but worth mentioning will be presented afterwards.

The current study aims to explore whether the *wh*-operator movement in English can be acquired by L1 Thai learners and to test whether the Failed Functional Features Hypothesis (FFFH) can account for the data of L1 Thai/L2 English learners in relation to the *wh*-operator movement. While most studies have focused on the *wh*-operator movement in relative clauses, this study takes open interrogatives or *wh*-questions as its focus.

The second hypothesis states that variability in English open interrogatives will be evident in both production and perception. Since the data demonstrated the L2

learners' variable production and perception of resumptive pronouns, this hypothesis is supported. In the QFT, the L2 participants still produced resumptive pronouns in embedded clauses within English open interrogatives, although the suppliance rate on the whole was low and also declined as the proficiency level increased. This trend is also shown in the grammatical items in the GJT, in some of which the learners inserted a resumptive 'it'. It is assumed that the low rate of 'it' suppliance was not the result of the English *wh*-operator movement, but of L1 influence—that is, the Thai language allows both the presence and absence of the resumptive pronoun in some structures such as relative clauses. In the GJT, the participants seemed to have particular difficulties in recognizing that resumptive pronouns are ungrammatical in English, since both intermediate and advanced groups persistently failed to reject a resumptive pronoun.

The first hypothesis of the study states that, based on the FFFH, L1 Thai learners fail to acquire English open interrogatives by means of the operator movement due to the lack of the strong uninterpretable [*uwh*] feature in Thai. Based on the variability in both production and perception discussed earlier in response to the second hypothesis, the first hypothesis is, hence, strongly supported. The most obvious corroborating evidence derives from the results of the GJT, which revealed that both of the L2 groups persistently had failed to detect an ungrammatical resumptive pronoun 'it' and, additionally, their scores were remarkably lower than that of the native group. This suggests that their syntactic representations were non-

target-like, resulting in their low rates of rejecting pronoun retention. Moreover, the haphazard nature of the learners' production and perception of resumptive pronouns as well as the asymmetry between subject extraction and object extraction also suggests their representations were impaired. All of these findings were consistent with the FFFH.

Apart from these major findings, an asymmetry between subject extraction and object extraction was also found. In the QFT, the resumptive pronoun was supplied more frequently in the subject position than in the object position. Likewise, in the GJT, the accuracy rates in rejecting the resumptive 'it' were slightly lower if the resumptive was in the object position. In other words, the resumptive pronoun was usually produced or accepted in the interrogatives with subject extraction than in those with object extraction. This study ascribes the L1 Thai learners' tendency to supply the resumptive in the subject position to processing difficulties. That is, since subject extraction requires additional processing efforts owing to the process called 'backtracking', the learners probably preferred to use resumptive pronouns, which are allowed in their L1 and might efficiently minimize the processing difficulties involved. As the processing of the interrogatives with object extraction does not demand extra efforts of 'backtracking', the L2 participants seemed to be more tolerant toward the absence of the resumptive pronoun in the object position.

Hopefully, the study will shed light on the existing theoretical controversies on SLA such as the extent to which L2 learners have access to UG and the nature of interlanguage grammar, i.e., their syntactic representations.

5.2 Pedagogical Implications

The current study found variability in L1 Thai learners' use of resumptive pronouns in terms of both production and perception, indicating that they failed to acquire the *wh*-operator movement in English. In classroom settings, teachers may teach English open interrogatives along with explicitly pointing out that resumptive pronouns should be omitted in the production as they are considered ungrammatical.

In addition, the use of the resumptive pronoun 'it' was found more prevalent in clauses with subject extraction than in those with object extraction. Therefore, teachers might emphasize to L1 Thai learners that the suppliance of the resumptive is not grammatical in both subject and object positions.

Last but not least, since L1 Thai learners also have been reported to supply ungrammatical resumptive pronouns in some other structures, the most well-known of which was probably English relative clauses (Phoocharoensil and Simargool, 2009), advice against the use of resumptive pronouns in English can be emphasized.

5.3 Limitations and Recommendations for Future Research

With regard to the instruments for data collection, two types of tasks were employed in this study, namely the QFT and the GJT, which had been designed to test learners' production and reception of the structure in question, respectively. The

former yielded only *written* data, which inevitably allowed the participants to think before starting to construct the open interrogative and, therefore, may not have truly reflected natural production, so other types of tasks that are designed to elicit more spontaneous spoken data might shed more light on the acquisition of the English *wh*-operator movement. With this respect, an oral task may provide a clearer picture as to whether L1 Thai learners' omissions of resumptive pronouns are affected by spoken or written language as discussed in Section 4.4.1.

Furthermore, in order to control as many variables as possible, the scope of the present study focuses on the use of the resumptive pronoun 'it' only. The resumptive use of the other third-person pronouns—i.e., 'she', 'he', and 'they'—which possess additional linguistic features such as gender (male vs. female vs. neutral), number (singular vs. plural), and animacy (animate vs. inanimate), was not included in the study. Additionally, the interrogative phrases chosen for the current study included only 'what' and 'which + a noun' that referred to inanimate entities. Therefore, further studies may incorporate more variables in order to see potential effects of the differences between, for instance, gender (resumptives 's/he' vs. 'it'), number ('it' vs. 'they'), and animacy ('who' vs. 'what'). Future studies may also take into account possible effects of clause finiteness (i.e. 'Who did John say [would be the new teacher]?' vs. 'Who did John want [to win the election]?'), apart from subject vs. object extraction, on the production and acceptability judgement of resumptive pronouns.

Aside from the nature of the experimental tasks and the choice of resumptive pronouns and interrogative phrases, there appears to be some limitations on the subjects themselves. First, the present study did not include L2 learners of English with different L1s other than Thai, so the conclusion drawn from the data was confined to L1 Thai learners and cannot be applied to those from other L1 backgrounds without more research. Future studies might consider including L2 participants whose L1 language use the movement strategy driven by this uninterpretable feature to compare the results from each group. The FFFH will be better supported by such a comparison. Second, all the L2 participants regardless of their proficiency levels were studying in Grade 12 (or Matthayom 6) at the time of data collection and had been exposed to language use mainly from formal classroom settings. The data from L1 Thai subjects with more exposure to the English language could lead to different scenarios.

Last but not least, while the current study looked into L2 learners' ability to detect English ungrammatical resumptive pronouns as the evidence of whether the *wh*-operator movement not realized in their L1 can be acquired, practically all previous studies reviewed in Chapter 2 focus on L2 learners' knowledge on one of the *wh*-movement constraints, namely Subjacency, as another valid indicator. Future research may examine not only L2 learners' ability to detect ungrammatical pronoun retention but also their sensitivity to Subjacency violations in order to yield a greater insight into the L2 acquisition of the *wh*-operator movement in open interrogatives.

REFERENCES

Uncategorized References

- Adger, D. (2003). *Core syntax : a minimalist approach*. Oxford: Oxford University Press.
- Amornwongpeeti, A. and Pongpairoj, N. (2013). Acquisition of L2 English restrictive relative clauses by L1 Thai speakers: A case of the failed functional features hypothesis. *Thoughts*, 2012, 42-69.
- Beck, M. L. (1998). *L2 Acquisition and Obligatory Head Movement: English-Speaking Learners of German and the Local Impairment Hypothesis* (Vol. 20).
- Bley-Vroman, R. (1989). What is the logical problem of foreign language learning? In S. M. and Schachter Gass, J. (Ed.), *Linguistic Perspectives on Second Language Acquisition*. Cambridge: Cambridge University Press.
- Çele, F. and Gürel, A. L2 acquisition of wh-extractions via a [-wh-movement] L1 In Julia Herschensohn and Darren Tanner (Ed.), *Proceedings of the 11th Generative Approaches to Second Language Acquisition Conference (GASLA 2011)*. Somerville, MA: Cascadilla Proceedings Project. 2011.
- Cheng, L. L. S. *On the typology of wh-questions*. Ph.D.'s Thesis, Department of Linguistics and Philosophy, Massachusetts Institute of Technology, 1991.
- Crystal, D. (2008). *A dictionary of linguistics and phonetics* (6th edition ed.). Malden, MA ; Oxford: Blackwell Publishing.
- Depraetere, I. and Langford, C. (2012). *Advanced English Grammar A Linguistic Approach* London and New York: Continuum International Publishing Group.
- Epstein, S., Flynn, S., et al. Martohardjono, G. (1996). Second language acquisition: theoretical and experimental issues in contemporary research. *Brain and Behavioral Sciences*, 19, 677-758.
- Eubank, L. and Grace, S. T. (1998). V-to-I and inflection in non-native grammars. In M.-L. Beck (Ed.), *Morphology and its Interfaces in L2 Knowledge* (pp. 69-88). Amsterdam: John Benjamins.

- Franceschina, F. (2001). Morphological or syntactic deficits in near-native speakers? An assessment of some current proposals. *Second Language Research*, 17(3), 213-247.
- Franceschina, F. Parameterized functional features and SLA. In J. M. Liceras et al. (Ed.), *Proceedings of the 6th Generative Approaches to Second Language Acquisition Conference (GASLA 2002)*, (pp. 97-105). Somerville, MA: Cascadilla Proceedings Project. 2003.
- Grondin, N. and White, L. (1996). Functional categories in child adult L2 acquisition of French. *Language Acquisition and Language Disorders*, 5, 1-34.
- Haegeman, L. (1994). *Introduction to government and binding theory* (2nd ed.). Oxford: Blackwell.
- Harald, C. and Pieter, M. (1986). The availability of universal grammar to adult and child learners - a study of the acquisition of German word order. *Interlanguage studies bulletin (Utrecht)*, 2, 93-119.
- Hawkins, R. (2001). *Second language syntax : a generative introduction*. Oxford: Blackwell.
- Hawkins, R. Revisiting wh-movement: The availability of an uninterpretable [wh] feature in interlanguage grammars. In L. Dekydtspotter et al. (Ed.), *Proceedings of the 7th Generative Approaches to Second Language Acquisition Conference (GASLA 2004)*. Somerville, MA: Cascadilla Proceedings Project. 2005.
- Hawkins, R. and Chan, C. . (1997). The partial availability of Universal Grammar in second language acquisition: the 'failed functional features hypothesis'. *Second Language Research*, 13(3), 187-226.
- Hawkins, R. and Liszka, S. . (2003). Locating the source of defective past tense marking in advanced L2 English speakers. *Language Acquisition and Language Disorders*, 30, 21-44.
- Huddleston, R. (1988). *English grammar : an outline* (5th ed.). Cambridge: Cambridge University Press.
- Huddleston, R. and Pullum, G. K. . (2005). *A student's introduction to English grammar*. Cambridge: Cambridge University Press.

- Iwasaki, S. and Horie, I. P. (2005). *A reference grammar of Thai*. Cambridge: Cambridge University Press.
- Johnson, J. S. and Newport, E. L. (1991). Critical period effects on universal properties of language: the status of subadjacency in the acquisition of a second language. *Cognition*, 39(3), 215-258.
- Kong, S. (2011). *The non-droppability of uninterpretable features in second language acquisition: On the interpretation of resumptive pronouns in L2 Chinese* (Vol. 9).
- Kuno, S. (1974). The position of relative clauses and conjunctions. *Linguistic Inquiry*, 5(1), 117-136.
- Lakshmanan, U. (1993). "The boy for cookie" – Some evidence for nonviolation of the case filter in child second language acquisition. *Language Acquisition and Language Disorders*, 3, 55-91.
- Leech, G. N. and Svartvik, J. (2002). *A communicative grammar of English* (3rd ed.). London: Longman.
- Li, X. (1998). Adult L2 accessibility to UG: An issue revised. In G. Martohardjono S. Flynn, & W. A. O'Neil (Ed.), *The generative study of second language acquisition* (pp. 89-110). Mahwah, NJ: Erlbaum.
- Martohardjono, G. (1993). *Wh-movement in the acquisition of a second language: A crosslinguistic study of 3 languages with and without overt movement* (Unpublished doctoral dissertation). Cornell University. Ithaca, NY.
- Meisel, J. (1997). The acquisition of the syntax of negation in French and German: contrasting first and second language development. *Second Language Research*, 13(3), 227-263.
- Phoocharoensil, S. and Simargool, N. (2009). Language universals and transfer in interlanguage relative clauses. *Thoughts 2009*, 53-74.
- Prasithratsint, A. (Ed.) (2006). *Controversial constructions in Thai grammar: Relative clauses constructions, complement clauses constructions, serial verb constructions, and passive constructions*. Bangkok: Chulalongkorn University Press.

- Prentza, A. (2012). Second language acquisition of complex structures: The case of English restrictive relative clauses. *Theory and Practice in Language Studies*, 2(7), 1330.
- Radford, A. (2004). *Minimalist syntax : exploring the structure of English*. Cambridge: Cambridge University Press.
- Radford, A. (2009). *Analysing English sentences : a minimalist approach*. Cambridge: Cambridge University Press.
- Rezaeian, M., Abedini, F., et al.Sadighi, F. (2015). The Role of L1 Transfer in the Acquisition of English Relative Clauses by Iranian EFL Learners: A Case of Resumptive Pronouns in Persian. *Journal of Applied Linguistics and Language Research*, 2(3), 100-110.
- Ruangjaroon, S. . (2007). The syntax of wh-expressions as variables in Thai. *Language Research*, 43(1), 77-147.
- Schachter, J. (1988). Second language acquisition and its relationship to Universal Grammar. *Applied linguistics*, 9(3), 219-235.
- Schachter, J. (1989). Testing a proposed universal. In S. Gass & J. Schachter (Ed.), *Linguistic perspectives on second language acquisition* (pp. 73-88). Cambridge: Cambridge University Press.
- Schachter, J. (1990). On the issue of completeness in second language acquisition. *Interlanguage studies bulletin (Utrecht)*, 6(2), 93-124.
- Schachter, J. and Yip, V. (1990). Grammaticality judgments: Why does anyone object to subject extraction? *Studies in Second Language Acquisition*, 12(4), 379-392.
- Schwartz, B. and Sprouse, R. (1994). Word order and nominative case in nonnative language acquisition: a longitudinal study of (L1 Turkish) German interlanguage. In T. Hoekstra & B. Schwartz (Ed.), *Language acquisition studies in generative grammar* (pp. 317-368). Amsterdam: John Benjamins.
- Smith, N. and Tsimpli, I. M. . (1995). *The mind of a savant: Language learning and modularity*. Oxford: Blackwell.
- Tarone, E. E. , Gass, M. , et al.Cohen, A. D (Eds.). (1994). *Research methodology in second language acquisition*. Hillsdale, NJ: Lawrence Erlbaum.

- Tayyebi, G. . (2011). The availability of universal grammar to second language learners: A case of wh-movement. *International Journal of English Linguistics*, 2(3), 34-43.
- Timyam, N. . (2015). *A comparative study of English and Thai: An introduction*. Bangkok: Kasetsart University Press.
- Tsimpli, I. M. and Dimitrakopoulou, M. . (2007). The Interpretability Hypothesis: Evidence from wh-interrogatives in second language acquisition. *Second Language Research*, 23, 215-242.
- Tsimpli, I. M. and Mastropavlou, M. . (2007). Feature interpretability in L2 acquisition and SLI: Greek clitics and determiners. In H. Zobl & H. Goodluck J. Licerras (Ed.), *The role of formal features in second language acquisition*. Mahwah, NJ: Lawrence Erlbaum.
- Tsimpli, I. M. and Roussou, A. . (1991). Parameter-resetting in L2? . *UCL Working Papers in Linguistics*, 3, 149-170.
- VanPatten, B. and Jessica, W. . (2015). Introduction: the nature of theories. In B. VanPatten, & Jessica, W. (Ed.), *Theories in second language acquisition* (pp. 1-16). New York, NY: Routledge.
- White, L. . (1986). Implications of parametric variation for adult second language acquisition: an investigation of the pro-drop parameter. In V. J. Cook (Ed.), *Experimental approaches to second language acquisition* (pp. 55-72). Oxford: Pergamon Press.
- White, L. . (2003). *Second language and universal grammar*. Cambridge: Cambridge University Press.
- White, L. and Juffs, A. . (1998). Constraints on wh-movement in two different contexts of non-native language acquisition: Competence and processing. In G. Martohardjono & W. O'Neil S. Flynn (Ed.), *The generative study of second language acquisition* (pp. 111-129). Hillsdale, NJ: Erlbaum.
- Xiaorong, Z. . *Resumptive pronouns in the acquisition of English relative clauses by Chinese EFL learners*. Master's thesis, Arts in Linguistics The Chinese University of Hong Kong 2007.

Yaowapat, N. . (2005). *Pronoun retention in Khmer and Thai relative clauses*. Paper presented at the the 15th Annual Meeting of the Southeast Asian Linguistics Society, Canberra. Australia.

Yaowapat, N. and Prasithrathsint, A. . (2008). A typology of relative clauses in mainland Southeast Asian languages. *The Mon-Khmer Studies Journal*, 38, 1-23.





APPENDIX

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Appendix A: Details of the participants

1. Intermediate learners (N=20)

| Participants | Age | OQPT Score (60) |
|--------------|------|-----------------|
| I 1 | 18 | 40 |
| I 2 | 17 | 42 |
| I 3 | 18 | 43 |
| I 4 | 18 | 43 |
| I 5 | 17 | 42 |
| I 6 | 18 | 40 |
| I 7 | 17 | 39 |
| I 8 | 18 | 42 |
| I 9 | 18 | 46 |
| I 10 | 18 | 47 |
| I 11 | 18 | 40 |
| I 12 | 18 | 40 |
| I 13 | 17 | 43 |
| I 14 | 17 | 43 |
| I 15 | 18 | 44 |
| I 16 | 18 | 43 |
| I 17 | 17 | 37 |
| I 18 | 17 | 41 |
| I 19 | 17 | 38 |
| I 20 | 18 | 36 |
| \bar{X} | 17.6 | 41.45 |

2. Advanced learners (N=20)

| Participants | Age | OQPT Score (60) |
|--------------|-------|-----------------|
| A 1 | 18 | 49 |
| A 2 | 19 | 48 |
| A 3 | 18 | 55 |
| A 4 | 17 | 50 |
| A 5 | 17 | 52 |
| A 6 | 17 | 56 |
| A 7 | 18 | 50 |
| A 8 | 19 | 59 |
| A 9 | 18 | 49 |
| A 10 | 18 | 54 |
| A 11 | 17 | 48 |
| A 12 | 17 | 52 |
| A 13 | 19 | 54 |
| A 14 | 17 | 49 |
| A 15 | 17 | 48 |
| A 16 | 18 | 50 |
| A 17 | 19 | 52 |
| A 18 | 18 | 51 |
| A 19 | 17 | 48 |
| A 20 | 17 | 48 |
| \bar{X} | 17.75 | 48.59 |

3. Native controls (N=5)

| Participants | Age | Nationality |
|--------------|-----|-------------|
| N 1 | 30 | American |
| N 2 | 32 | American |
| N 3 | 26 | American |
| N 4 | 36 | American |
| N 5 | 38 | American |



Appendix B: Question Formation Task (QFT)

Direction: Change the following statements into questions.

1. Jason remembered his close friend played 'Pokémon' yesterday.

Which game did Jason remember _____?

2. Elena thought 'Lemonade' by Beyoncé was the best album last year.

Which album did Elena think _____?

3. James thought a condo was more comfortable than a house.

What did James think _____?

4. Bam said 'Harry Potter' was her favorite movie.

Which movie did Bam say _____?

5. Sarah said her father had bought the red pen for her birthday.

Which pen did Sarah say _____?

6. Richard remembered his sister ate a sandwich in the morning.

What did Richard remember _____?

7. Palmy thought her brother sold the Pikachu doll to his friend.

Which doll did Palmy think _____?

8. Miranda said her son loved chocolate when he was younger.

What did Miranda say _____?

9. Jess remembered the book entitled 'The Little Prince' was full of pictures.

Which book did Jess remember _____?

10. Thor believed the new pencil made his sister very happy.

What did Thor believe _____?

11. John suggested **the result** should be announced at the meeting.

What did John suggest _____?

12. William thought his brother wanted **a model car** for Christmas.

What did William think _____?



Appendix C: Grammaticality Judgement Task (GJT)

Direction: Consider whether the sentences below are grammatically correct or not. In each given blank, mark for the correct ones, and for the incorrect ones. Also, provide a correct version above the incorrect part.

were

e.g. If I ~~am~~ Britney Spears, I would not be a singer.

If I were Hilary Duff, I would dance like Lady Gaga.

1. What did Kathy think Peter hated when he was a child?
2. Yuki asked me who she should give this message to.
3. What did Jennifer believe made her mother so happy yesterday?
4. Helen recommended that her advisee takes five courses.
5. What did Tim claim Gloria sent to her brother yesterday?
6. What did Charles claim happened last night while we were asleep?
7. Karen said that I needed to be at the lab in the morning.
8. What did Neil think it drove his sister mad the other day?
9. Paul wonders what everything is okay with his girlfriend.
10. Jaime wants to know what is Kim's native language.
11. Which movie did Barbara claim it was most widely acclaimed last year?
12. Which topic did Betty think was the most boring last semester?
13. Charles thought that his cat understands everything he said.

14. _____ Which lesson did Jam say it was the most interesting out of last semester's classes?
15. _____ Donald told his mom that he didn't like to live in a tiny apartment.
16. _____ What did Jack think Susan forgot it when she was leaving home?
17. _____ Charles wanted to know when will the final decision be made.
18. _____ Which toy did Jeff believe his brother bought for Christmas?
19. _____ Joseph insisted that the new baby is named after his grandfather.
20. _____ Frank asked Carla where she had been all afternoon.
21. _____ Ptolemy believed that the sun went round the earth.
22. _____ Which pen did Jared say was discounted at Paragon?
23. _____ What did Helen claim Sean stole it from his mother?
24. _____ What did Matthew believe it made this book famous in the old days?
25. _____ Which dress did Seth believe Tina chose it last night?
26. _____ Which game did Carol say Paul enjoyed playing last week?
27. _____ Which book did Maria say her teacher read it very carefully?
28. _____ Nancy questioned whether they are really monks.
29. _____ Jason asked Carol that she wanted for her birthday.
30. _____ Daniel explained that dinosaurs dominated the earth for 250 million years.

VITA

Pairoj Kunanupatham earned his B.A. in English (first-class honors) from the Faculty of Liberal Arts, Mahidol University, and is currently pursuing an M.A. in English at the Faculty of Arts, Chulalongkorn University. His thesis entitled “L2 Acquisition of Wh-operator Movement in English Open Interrogatives by L1 Thai Learners: A Case of the Failed Functional Features Hypothesis” is supported by the 90th Year Anniversary of Chulalongkorn University Fund (Ratchadaphiseksomphot Endowment Fund). His areas of interest include second language acquisition of English syntax and morphology, descriptive English grammar, and corpus linguistics.

