



**A STUDY OF ENGLISH REFLEXIVE INTERPRETATION
BY THAI UNIVERSITY ENGLISH MAJORS**

JARUNEE ANUPAN

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UNIVERSITY ENGLISH MAJORS

NAME MRS. JARUNEE ANUPAN

THIS THESIS HAS BEEN ACCEPTED BY

.....*Sirintip Boonmee*..... CHAIR
(DR. SIRINTIP BOONMEE)

.....*Supath Kookiatthoon*..... COMMITTEE
(ASST. PROF. DR. SUPATH KOOKIATTIKOON)

.....*Wutti Leenam*..... COMMITTEE
(DR. WUTTI LEENAM)

.....*S. Thaweesit*..... DEAN
(ASST. PROF. DR. SUCHADA THAWEESIT)

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.....*Utith Inprasit*.....
(ASST. PROF. DR. UTITH INPRASIT)

VICE PRESIDENT FOR ACADEMIC AFFAIRS

FOR THE PRESIDENT OF UBON RAJATHANEE UNIVERSITY

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Jarunee A.

(Mrs. Jarunee Anupan)

Researcher

บทคัดย่อ

ชื่อเรื่อง : การศึกษาการตีความสรรพนามสะท้อนในภาษาอังกฤษของนักศึกษาวิชา
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ชื่อปริญญา : ศิลปศาสตรมหาบัณฑิต
สาขาวิชา : การสอนภาษาอังกฤษเป็นภาษาต่างประเทศ
ประธานกรรมการที่ปรึกษา : ดร. สิรินทร์ทิพย์ บุญมี

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การศึกษาวิจัยนี้จัดทำขึ้นเพื่อศึกษานักศึกษาวิชาเอกภาษาอังกฤษตีความสรรพนามสะท้อนในภาษาอังกฤษอย่างไร และการตีความนั้นมีความแตกต่างกันหรือไม่ในกลุ่มผู้เรียนที่มีระดับความสามารถด้านภาษาที่แตกต่างกัน ผู้เรียนที่มีความสามารถด้านภาษาแตกต่างกัน 4 กลุ่ม (กลุ่มตัวอย่าง 117 คน) ได้ทำข้อสอบตีความสรรพนามสะท้อนภาษาอังกฤษในระดับประโยค 2 ประเภท ได้แก่ ประโยคที่ประกอบด้วยอนุประโยคที่มี that (That-clause) และประโยคที่ประกอบด้วยอนุประโยคที่มีคำกริยาที่ไม่ผันตามกาลเวลา (Infinitive clause)

ผลจากการศึกษาพบว่าผู้เรียนได้รับอิทธิพลจากภาษาแม่ ตลอดจนประสบการณ์ชีวิตในการตีความสรรพนามสะท้อนในภาษาอังกฤษ ผู้เรียนทั้งกลุ่มที่มีความสามารถทางภาษาในระดับเริ่มต้นและกลุ่มอื่นๆ ที่มีความสามารถด้านภาษาสูงกว่าตีความสรรพนามสะท้อนในภาษาอังกฤษในประโยคที่ประกอบด้วยอนุประโยคที่มี that ได้ดีกว่าประโยคที่ประกอบด้วยอนุประโยคที่มีคำกริยาที่ไม่ผันตามกาลเวลา อย่างมีนัยสำคัญทางสถิติทุกกลุ่ม ผู้เรียน 58.83% ไม่ผ่านการทดสอบนี้ ซึ่งอาจอนุมานได้ว่าผู้เรียนยังไม่สามารถเรียนรู้กฎการผูกยึดของสรรพนามสะท้อนในภาษาอังกฤษ อย่างไรก็ตามก็ตีผลการศึกษาบ่งชี้ว่าผู้เรียนกลุ่มที่เรียนภาษาอังกฤษในชั้นเรียนนานที่สุดมีการตีความสรรพนามสะท้อนภาษาอังกฤษถูกต้องมากที่สุด ดังนั้นการสอนอย่างชัดเจนในชั้นเรียนเรื่องกฎสรรพนามสะท้อนในภาษาอังกฤษจึงน่าจะจำเป็นเพื่อให้ผู้เรียนสื่อสารภาษาอังกฤษได้ถูกต้องและประสบความสำเร็จมากขึ้น

ABSTRACT

TITLE : A STUDY OF ENGLISH REFLEXIVE INTERPRETATION
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This study explores how Thai university English majors interpret English reflexives and if there is different interpretation across different language proficiency groups. Multiple-choice test of English reflexive interpretation was designed to deal with two sentence types: sentences with that-clauses and infinitive clauses and administered to Thai learners of English at four proficiency levels ($n = 117$).

Results from the learners indicate that L1 transfer with learners' world experience influence the learners' interpretation of English reflexives. Correct interpretation in sentences with that-clauses is significantly better than those in sentences with infinitive clauses. This asymmetry exists even in the beginning group and persists through out the higher proficiency groups. 58.83% of the subjects failed the test which can be inferred that they did not yet acquire the binding principle. The results were better with those subjects with more years of formal instruction. The study concludes that the learners need explicit instruction of reflexive interpretation rules in class so that they can learn and communicate more accurately and successfully.

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CHAPTER 1

INTRODUCTION

This chapter includes the study's rationale, problems, purposes, research questions, hypotheses, significance, and definitions of key terms.

1.1 Rationale

Studies of second language acquisition (SLA) have provided useful information for pedagogical implication (Ellis, 1985). Researchers have explored many areas of SLA such as syntax, discourse, pragmatics, and learning strategies since 1970s (Ellis, 1997). These investigations assist educators in improving second and foreign language teaching. Studies of English reflexive acquisition have been conducted and found that many English as a Second or Foreign Language (ESL/EFL) learners have problems acquiring the reflexives, and the first language transfer (LT) has been found as one of the influencing factors (Wales, 1996). To use and interpret English reflexives in object positions correctly, the learners need to acquire the Binding principles.

Although Thai university students majoring in English have learnt English for more than 12 years, they still seem to misuse and misinterpret English reflexives. Based on the curriculum of the Ministry of Education, 2001, the students were taught about reflexives when they were in grade 1 (<http://school.obec.go.th/wattha/1205laksoot.htm>). In addition, it is likely that they are also exposed to English outside class since English is more widely used in Thailand. Interestingly, however, the learners still seem to have problems using and interpreting these English reflexives.

This study aims to find out how Thai university students interpret English reflexives, whether the interpretation differs among different groups of students whose years of formal instruction differ, and if so, how it differs.

1.2 Problems

Both Thai and English have reflexive pronouns; however, the rules that govern the use of reflexive pronouns in the two languages are not the same. The problems for Thai EFL learners involve the forms and interpretation of their references. Some Thai students might have problems using singular and plural, such as ‘yourself’ and ‘yourselves’; however, this may not cause a serious communication problem. Reflexive interpretation seems to be more challenging for Thai learners. For example:

- b. Terry_i knows that Michael_j hates *himself*_{*i,j}.

In sentence (1), Thai learners might think the reflexive ‘himself’ may refer to both Terry and Michael; while in English the reflexive can refer only to ‘Michael’.

Based on Principle A of the Binding Theory, a reflexive pronoun and a reciprocal pronoun (e.g. each other) require the antecedent within the same minimal clause or in its government category, or what is called ‘a local antecedent’, as in the following sentences.

- (2) a. Terry_i blames *himself*_i.
 b. Terry_i and Michael_j blame *each other*_{i,j}.
- (3) a. Terry_i told Michael_j [that John_k hated *himself*_{*i/*j/k}.]
 b. Terry_i wanted [John_j to hate *himself*_{*i/j}.]

In (3) (adapted from Wilawan, 1991), for English native speakers *himself* can refer only to ‘John’. In contrast, Thai speakers allow ‘long-distance antecedent’ for reflexives. The pronoun ‘*himself*’ in these sentences may refer to ‘Terry’, ‘Michael’, and ‘John’.

The sentence (3a) is a sentence with a that-clause (in the bracket), while sentence (3b) is a sentence with an infinitive clause (in the bracket). The clauses in the brackets above are the minimal clauses for the reflexives; therefore, the reflexive *himself* can refer only to ‘John’ (a local antecedent), but not ‘Terry’ (long-distance antecedent). Long distance binding, however, is acceptable for Thai learners of English in these two sentences.

Interpretation of reference of the English reflexive pronouns may be problematic for Thai learners although they are one of the most frequently used words in the English language (Wales, 1996). How native speakers resolve what the reflexive pronoun refers to is difficult for EFL/ESL students.

This study will focus only on acquisition of this syntactic aspect of English reflexives since it helps L2 learners to communicate appropriately with and without contexts. In particular, the study aims to explore how Thai university English majors with different lengths of language instruction would interpret sentences with reflexive pronouns, and whether the interpretation is different across the groups. It emphasizes acquisition of reflexive binding of Thai adult EFL learners of 4 different lengths of language instruction to see if the students acquire English reflexives differently over time.

1.3 Purposes of the study

This study aims to investigate:

1.3.1 How Thai university English majors of Ubon Ratchathani University interpret English reflexives, and

1.3.2 If their reflexive interpretation differs, i.e. if their acquisition of reflexive binding differs over time, after taking more English courses in the university.

1.4 Research questions and hypotheses

1.4.1 Research Questions:

1.4.1.1 How do Thai EFL learners of different degrees of English exposure interpret English reflexives?

1.4.1.2 What types of errors occur in the learners' interpretation?

1.4.1.3 Does the interpretation of different groups differ?

1.4.2 Hypotheses:

1.4.2.1 The interpretation and types of errors made will be influenced by L1, especially at the beginning.

1.4.2.2 The interpretation would differ among different groups of learners. The group of more language exposure would be better as their knowledge develops.

1.5 Significance of the study

It is expected that the results of this study would provide useful information for teaching English reflexives to Thai students.

1.6 Definitions of key terms

In this study the terms:

Acquisition means comprehension, not production. It involves the interpretation of reflexive pronouns in the sentences given.

Language exposure means language input gained through formal teaching and learning in class.

Proficiency levels mean the assumed levels of language ability based on degrees of formal instruction.

CHAPTER 2

LITERATURE REVIEW

This chapter presents a review of literature related to this study. It is organized into two main parts: theories related to the study and Thai reflexive rules.

2.1 Relevant theories of L2 syntactic acquisition

Second language acquisition (SLA) deals with what second language learners acquire when learning the target language and how they acquire it (Ellis 1994, 1997; Gass and Selinker 2001 and Selinker 1992). SLA researchers have studied acquisition of different aspects of L2 grammar such as phonology, morphology, syntax and semantics (Selinker and Gass, 2001). Some of the important issues discussed in SLA research are Universal Grammar (UG), Government and Binding Theory (GB) and Language Transfer (LT) in the Universal Hypothesis (Ellis, 1985).

2.1.1 Universal grammar

Universal Grammar (UG) is defined by Chomsky (from Gass and Selinker, 2001) as ‘the system of principles, conditions and rules that are elements or properties of all human languages’. Universal Grammar is innate, which functions as the ‘language acquisition device’. It consists of an abstract set of principles and parameters, which identify core aspects of all languages (Gass and Selinker, 2001). In other words, all natural languages are subject to the same universal principles under the rubric of parameter.

Similarities of UG principles and parameters and driving a car (P&P) are interestingly addressed by Cook (1997) pp. 250-251.

Overall there is a principle that drivers have to keep consistently to one side of the road, which is taken for granted by all drivers in all countries. Exceptions to this principle, such as people driving down motorways on the wrong side, rare stories in the media or car chases in action movies. The principle does not, however, say, which side of the road people should drive on. A parameter of driving allows the

side to be the left in England and Japan and the right in the USA and France. The parameter has two values or 'settings'—left and right. Once a country has opted for one side or the other, it sticks to its choice: a change of setting is a massively complex operation, whether it happens for a whole country, as in Sweden, or for the individual traveling from England to France. So, a universal principle states the universal requirement on driving; the parameter specifies the variation between countries.

At first this theory was applied to only first language acquisition such as in the studies of Corder (1967), Selinker (1972) and Dulay et al (1982) and later UG has been claimed to involve even in SLA, which takes place after childhood as well. This idea leads SLA researchers to explore how it is related to L2 acquisition. And it has been hypothesized that if the parameter settings of two languages are the same, the L2 learners of both languages could learn the other language with ease, or what is called positive settings. Similarly, if the two languages have different parameter settings, the L2 learners of both languages could learn the other language with difficulty, or what is called negative settings.

Many studies (e.g. Akiyama, 1999, 2002; Broselow and Finer, 1991; Cook, 1990; Finer and Broselow, 1986; Hirakawa, 1990; Wakabayashi, 1996) explore if there is accessibility of UG in second language learners. Such research into the accessibility of UG principles and parameters has centered on four basic areas: binding theory, pro-drop, branching direction and subjacency.

Besides, UG confines the meaning relationships between nouns and other nominal constructions like anaphors or reflexives (e.g., himself, themselves and herself). This component is recognized as Binding Theory (BT) specifying the syntactic domains within which nominal constructions are allowed to refer to each other. The theory will be mainly discussed in the next part.

2.1.1.1 The government and binding theory (GB)

The Government and Binding theory of syntax is developed by Noam Chomsky. One claim of the theory is relevant to distinct coreferential relationship between noun phrases, pronouns and anaphors, or what is called binding (Haegeman, 1994), which is explored in this study.

The Binding Theory (BT) contains the following three principles:

Principle A: An anaphor must be bound in its governing category.

The president_i heard the famous actor_j talked about himself_{*i/j} on TV.

Principle B: A pronoun must be free in its governing category.

The president_i heard the famous actor_j talked about him_{i/*j} on TV.

Principle C: An R-expression must be free everywhere.

The president_i heard the famous actor_j talked about Bill_{*i/*j} on TV.

The present research, however, focuses on Principle A only. According to Chomsky (1986b), reflexives have narrower domains than personal pronouns. Each reflexive must be bound within its clause (governing category), while each personal pronoun must be free within its minimal clause. These rules are probably problematic for EFL learners who have different rules like Japanese, Chinese, Korean and Thai. These languages allow both local and long-distance bindings for reflexives; each reflexive can be bound both within and outside its clause.

Many SLA researchers have investigated whether or not L2 learners can acquire the principles when learning L2. Bennett (1994), Hirakawa (1990), Thomas (1993) and White (1995), for instance, concluded that some learners completely acquire BT but some, especially the lower proficiency learners, partially acquire BT with some L1 transfer.

2.1.2 First language transfer (LT)

First language transfer is originally from contrastive analysis (CA) hypothesis based on behavioral psychology and structural linguistics and used to be common in language teaching (Ellis, 1997). Lado (1957) claims that teachers can predict problematic forms in L2 learning by making comparison of the structures of L1 and L2. The fundamental hypothesis is that in L2 acquisition, the learner will transfer L1 elements to L2. According to Lado, the learning difficulties, therefore, can be predicted from the differences between L1 and L2. For example, the Thai learner of English will have difficulty interpreting the English pronoun, using subject-verb inversion to signal a question and applying tense aspects because these grammatical aspects in Thai and English are different. It was believed that these predictions could be made based solely on the detailed comparison of the two languages.

Although most language professionals have confirmed that L1 does play a role in L2 acquisition, the extent to which a learner's L1 affects L2 acquisition process has been a continuing debate since the rise of error analysis (EA) and creative construction in the 1960s and 1970s and the issues in the debate have changed somewhat over the years (Gass 1988; Martohardjono and Flynn 1995).

To apply the idea of L1 transfer in terms of the acquisition of the English binding, predictions of English misinterpretation of Thai L2 learners might be as follows:

Terry_i knew that Michael_j cleaned up himself_{i/j}.

According to Thai rules, long-distance binding is possible; himself can refer to both Terry and Michael.

Although L1 transfer has been generally accepted to have influence on L2 acquisition, some errors might not be from L1 transfer. Schachter and Celce-Mucia (1977) point out that many errors may be ambiguous – that is they may be the result of transfer or, alternatively, an example of a developmental process of L2 acquisition.

In addition, Schachter (1983) has indicated that it is more difficult to claim that there is more transfer of syntax than transfer in other areas such as phonology, because L2 learners can more easily avoid difficult syntactic structures whereas difficult sounds are not easy to avoid.

In brief, identification of L1 transfer is not clear-cut. L1 transfer may appear obvious in a variety of ways; however, research has also shown many other factors involved in L2 acquisition that need to be taken into account in the analysis of learners' data.

2.1.3 Interlanguage (IL) and language development

Apart from UG and first language transfer, second language acquisition researchers also pay attention to interlanguage, the language of the second language learners during the acquisition process. Interlanguage includes borrowing patterns from the L1, extending patterns from L2 and expressing meanings by applying known words and structures (Richards et al., 1992). The L2 learner's pattern is called interlanguage system or approximative system.

Learners' interlanguage is a unique linguistic system because it is neither the learner's L1 nor the target language (Selinker, 1972). The rules are influenced by the outside factors such as input and are transitional. They gradually develop over time. The systems L2 learners construct contain variable rules at any stage of development. L2 learners apply various learning strategies to develop their interlanguage and their interlanguage grammar may probably stop developing or be fossilized.

Interlanguage and language development have also been explored in SLA studies to see how L2 learners acquire the target language in sequence, what affects the acquisition and if there is fossilization at any stages. In studies of English binding acquisition, some researchers (e.g. Akiyama 1999; Hamilton 1998; Hirakawa 1990; and Mashimura 1994) find no developmental pattern when L2 learners acquire local binding of English reflexives. Others such as Akiyama (1999), Eckman (1994), Thomas (1993, 1995) and Wakabayashi (1996), however, find that the higher language proficiency groups better acquire it than the lower ones. Still, there is not clear conclusion of how L2 learners acquire English binding in the interlanguage stage.

2.2 Thai reflexive rules

Thai has many ways to say ‘-self’ (Campell, 1969; Iwasaki and Ingkaphirom 2005; Palakornkul, 1972). Thai reflexive pronouns are similar to ‘myself’, ‘himself’ in English, in terms of word form. They consist of a noun ตัว /tua/ ‘body’ or คน /ton/ ‘person’ with the emphatic word เอง /eeŋ/: ตัวเอง /tua eeŋ/ ‘oneself’ and ตนเอง /ton eeŋ/ in some written texts. Also they can be formed as ตัว /tua/ ‘body’+ personal pronoun + เอง /eeŋ/: such as ตัวเธอเอง /tua thəə eeŋ/ ‘herself’, ตัวเขาเอง /tua kháw eeŋ/ ‘himself’ and ตัวมันเอง /tua man eeŋ/ ‘itself’, as shown in the following table. Thai reflexives can be a subject, object, possessor, or oblique (Iwasaki and Ingkaphirom, 2005).

Table 2.1 Thai reflexive forms

English reflexives	Type one /tua eeŋ/	Type two /tua/+personal pronoun+/eeŋ/
Myself	/tua eeŋ/ ตัวเอง	/tua chan eeŋ/ ตัวฉันเอง, /tua khaw eeŋ/ ตัวข้าเอง
Ourselves	/tua eeŋ/ ตัวเอง	/tua raw eeŋ/ ตัวเราเอง, /tua puak raw eeŋ/ ตัวพวกเราเอง
Yourself	/tua eeŋ/ ตัวเอง	/tua thəə eeŋ/ ตัวเธอเอง, /tua khun eeŋ/ ตัวคุณเอง
Yourselves	/tua eeŋ/ ตัวเอง	/tua puak khun eeŋ/ ตัวพวกคุณเอง, /tua khun eeŋ/ ตัวคุณเอง, /tua puak thəə eeŋ/ ตัวพวกเธอเอง
Themselves	/tua eeŋ/ ตัวเอง	/tua puak khaw eeŋ/ ตัวพวกเขาเอง
Himself	/tua eeŋ/ ตัวเอง	/tua khaw eeŋ/ ตัวเขาเอง
Herself	/tua eeŋ/ ตัวเอง	/tua thəə eeŋ/ ตัวเธอเอง
Itself	/tua eeŋ/ ตัวเอง	/tua man eeŋ/ ตัวมันเอง

Thai reflexives are different from English ones in terms of usage; Thai allows both long-distance and local binding while English allows only local binding. See the following sentences (from Iwasaki and Ingkaphirom 2005):

a1) ทอง มอง ดู ตัวเอง ใน กระจก

๓๖๗ ๓๖๗ duu tua een nay kracok

Tong stare look REF in mirror

‘Tong_i looked at himself_i in the mirror.’

a2) ทอง มอง ดู ตัวเขาเอง ใน กระจก

๓๖๗ ๓๖๗ duu tua khaw een nay kracok

Tong stare look REF in mirror

‘Tong_i looked at himself_i in the mirror.’

b1) ทอง รู้ ว่า เล็ก ไม่ ชอบ ตัวเอง

๓๖๗ ruu wa lek may t๓๖๖b tua een

Tong know that Lek not like REF

‘Tong_i knows that Lek_j dislikes himself_{i/j}.’

b2) ทอง รู้ ว่า เล็ก ไม่ ชอบ ตัวเขาเอง

๓๖๗ ruu wa lek may t๓๖๖b tua khaw een

Tong know that Lek not like REF

‘Tong_i knows that Lek_j dislikes himself_{i/j}.’

(a1) and (a2) have only one possible antecedent, Tong, for both types of reflexive ‘himself’. When it is more than one possible antecedent with equal number, gender and persons in (b1) and (b2), interpretation of Thai reflexives can be both long-distance and local bindings. Thai native speakers tend to refer ‘himself’ to both Tong and Lek in (b1) and (b2). Therefore, it is very appealing to investigate how Thai learners of English interpret English reflexives. To explore if the learners acquire the

binding of English reflexives and how much they can acquire it over time is truly interesting.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter discusses how the study was carried out. It consists of four parts: subjects, research design, instruments and data analysis.

3.1 Subjects

The subjects of this study consisted of four groups of randomly selected first, second, third and fourth year English majors at Ubon Ratchathani University. The total number of the subject is 117 comprised of 30 first year, 30 second year, 27 third year and 30 fourth year students. All of the subjects speak Thai as their mother tongue. None have English-speaking parents and none had lived outside Thailand.

The students had formally learnt English in schools for at least 8 years according to the curriculum of the Thai Ministry of Education before taking courses at the university. The following is the description of each group of the subjects:

3.1.1 Group 1 consisted of 30 first year students. They were enrolled in one English course at the university level for a semester (1/2006).

3.1.2 Group 2 consisted of 30 second year students. They were enrolled in six English courses at the university level for three semesters (1/2005, 2/2005 and 1/2006).

3.1.3 Group 3 consisted of 27 third year students. They were enrolled in thirteen English courses at the university level for five semesters (1/2004, 2/2004, 1/2005, 2/2005 and 1/2006).

3.1.4 Group 4 consisted of 30 fourth year students. They were enrolled in twenty-two English courses at the university level for seven semesters (1/2003, 2/2003, 1/2004, 2/2004, 1/2005, 2/2005 and 1/2006).

3.2 Research design

This study investigated the students' interpretation of English reflexive pronouns. It was a pseudolongitudinal study whose emphasis was on second language development, with data being collected at a single point in time, but with different proficiency levels represented (Gass and Selinker, 2001). The data were collected from the four subject groups using the same research tool.

3.3 Research instrument

The instrument used in this study included a multiple-choice test of 20 items. The test contained sentences with reflexives; the students were to select possible antecedents of the underlined reflexive (see Appendix A). The instrument was tried out with a pilot group with similar qualifications at Ubon Ratchathani Rajabhat University (UBRU) and adjusted.

The test aimed to test how the subjects interpret sentences containing reflexives in two different conditions: 10 items with the reflexive contained in the infinitive clauses (items 1, 2, 5, 8, 9, 11, 12, 15, 18 and 19) and 10 items with the reflexive contained in the that-clauses (items 3, 4, 6, 7, 10, 13, 14, 16, 17 and 20). All sentences were in past simple tense. In addition, the test contained only third person reflexives (himself, herself and themselves) so that the characteristics of the choices in terms of gender, number and person could be controlled.

The data were collected during the first semester of academic year 2006.

3.4 Data analysis and statistical techniques

After the data were collected, they were analyzed. The Statistical Package for Social Science (SPSS program) was used to analyze the data for accuracy and inaccuracy rates, percentage values and the means. ANOVA was applied to compare the results across the four groups and the outcome is calculated to find out if there was any significant difference across the groups ($P = 0.05$).

The misinterpretation types from the data collected were also analyzed. Inaccuracy types were counted based on the students answers. Misinterpretation type X means the students wrongly stated that only long distance binding was

allowed; or when the subjects selected the NP in the subject position of the main clause or when the subjects chose choice (a). Misinterpretation type Y means the students wrongly stated both local and long distance binding were permitted, or when the subjects selected choice (c) in the test. Misinterpretation type Z means the subjects thought the anaphor did not have any antecedent within a sentence, or when the subjects selected choice (d).

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1 Results

The following table shows mean scores of the students' interpretation: correct interpretation and misinterpretation of the reflexives.

Table 4.1 Mean scores of the students' correct and incorrect interpretations

Year	Correct Interpretation (out of 20)	%	Misinterpretation (out of 20)			%
			Type X	Type Y	Type Z	
1	6.00	30.0%	11.43	1.47	1.10	70.0%
2	9.23	46.2%	8.40	2.03	0.33	53.8%
3	8.93	44.7%	8.89	2.04	0.15	55.3%
4	10.20	51.0%	6.53	3.20	0.07	49.0%
Mean of total	8.58	42.9%	8.81	2.19	0.42	57.1%

Note: Misinterpretation type X means the students wrongly stated that only long distance binding was allowed; or when the subjects selected the NP in the subject position of the main clause. Misinterpretation type Y means the students wrongly stated both local and long distance binding were permitted, or when the subjects selected choice (c) in the test. Misinterpretation type Z means the subjects thought the anaphor did not have any antecedent within a sentence, or when the subjects selected choice (d).

In total the students could interpret the referents correctly at 42.9%, while they misinterpreted 57.1% of the items. Group 1 could do the lowest and group 4 could do the best. Groups 1, 2 and 3 failed with the mean scores of 6.00, 9.23 and 8.93 out of 20, respectively. Only group 4 passed the test with the mean score of 10.20 or 51.0%.

As for the nature of the misinterpretation, misinterpretation type X was found most often among the four subject groups (8.81). Misinterpretation type Y was the second (2.19) and misinterpretation type Z was the third (0.42).

When each subject group was compared, it was found that the beginners could do the least (mean score of 6.00) and they mostly had misinterpretation type X with the mean scores of 11.43. They rarely had types Y and Z misinterpretations, means score of 1.47 and 1.10, respectively.

Group 2 could do a little better than group 3; their mean scores were 9.23 and 8.93, respectively. They, like the other groups, mostly had misinterpretations type X with the mean scores of 8.40. Year 3 students also had misinterpretations type X the most, with the mean score of 8.89. Year 4 students could do the best with the mean score of 10.20. Their most often found misinterpretations were also of type X with the mean score of 6.53.

Table 4.2 Mean score of correct interpretation of each sentence type

Year	Sentences with that-clauses (10 out of 20 sentences)		Sentences with infinitive clauses (10 out of 20 sentences)		TOTAL (20 sentences)	
	Mean	% of total sum	Mean	% of total sum	Mean	% of total sum
1	3.60	18.0 %	2.40	12.0 %	6.00	30.0 %
2	5.50	27.6 %	3.73	18.7 %	9.23	46.2 %
3	5.52	27.6 %	3.41	17.1 %	8.93	44.7 %
4	5.89	29.5 %	4.33	21.7 %	10.20	51.0 %
Mean of total	5.11	25.6 %	3.47	17.4 %	8.58	27.9 %

Overall, the students could better interpret the referents of reflexives in sentences with that-clauses than sentences with infinitive clauses. The mean scores are 5.11 and 3.47, respectively. The total mean scores of each group seem to vary according to the students' exposure time to the target language as shown in Table 4.2.

Group 4 has the highest mean score on both sentences with that-clauses and ones with infinitive clauses, 5.89 and 4.33 respectively. Group 1 has the lowest, 3.60 and 2.40 respectively. Notably, however, group 2 could do little better than group 3 in sentences with infinitive clauses; their mean scores in sentences with that-clauses are very close.

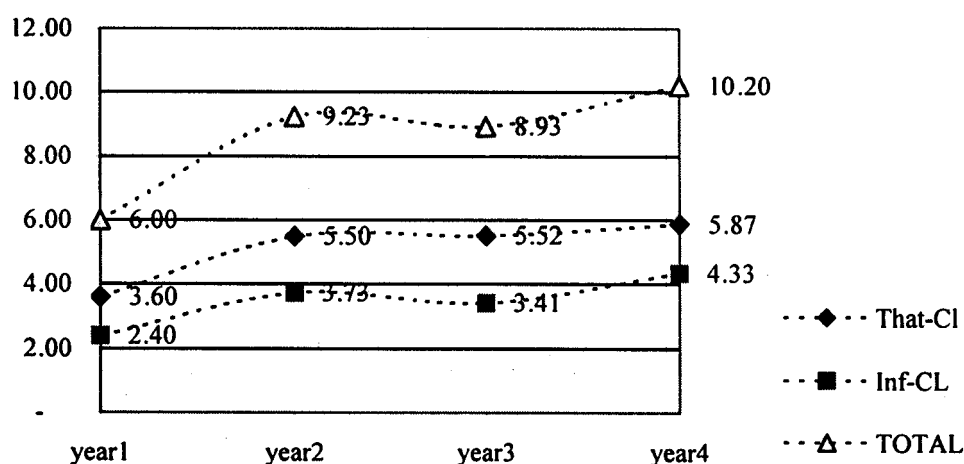


Figure 1 Language development by the mean scores of correct interpretation

After taking English courses in the university, the students seemed to better interpret the antecedents of English reflexives. The students' interpretations were slightly improved; their mean scores were higher over time. Interestingly, however, their mean scores in sentences with infinitive clauses fell down a bit during year 2 to year 3.

Table 4.3 Comparisons between sentences with that-clauses and sentences with infinitive clauses of the students' correct interpretation

Year	Means of sentences with		Differences	SD	Sig.
	that-clauses	infinitive clauses			
1	3.60	2.40	1.20	1.83	0.001*
2	5.50	3.73	2.13	2.16	0.000**
3	5.52	3.41	1.99	1.91	0.000**
4	5.87	4.33	1.54	2.43	0.002*
Total	5.11	3.47	1.64	2.10	0.000**

* Significantly different ($P \leq 0.05$) ** Significantly different ($P \leq 0.01$)

Table 4.3 shows that the means of reflexive interpretations in sentences with that-clauses and sentences with infinitive clauses of each group are very significantly different, $P \leq 0.001 - 0.002$.

The following tables show differences across the four groups (see ANOVA tables in appendix B). Table 4.4 shows significant differences across the groups, in total, in sentences with that-clauses and in sentences with infinitive clauses ($P \leq 0.05$). By Scheffe's test, the tables below (Table 4.4 – Table 4.6) show the differences between the groups.

Table 4.4 Multi-comparisons: correct interpretation in both sentence types

Year		4	2	3	1
	\bar{X}	10.20	9.23	8.93	6.00
4	10.20	-			
2	9.23	0.806	-		
3	8.93	0.657	0.993	-	
1	6.00	0.001**	0.041*	0.015*	-

* Significantly different ($P \leq 0.05$) ** Significantly different ($P \leq 0.01$)

Table 4.4 shows group 1 is significantly different from groups 2, 3 and 4 ($P \leq 0.05$). Groups 2, 3 and 4, however, are not significantly different from each other.

Table 4.5 Multi-comparisons: correct interpretation in sentences with that-clauses

Year		4	3	2	1
	\bar{X}	5.87	5.52	5.50	3.60
4	5.87	-			
3	5.52	0.947	-		
2	5.50	0.934	1.000	-	
1	3.60	0.002*	0.014*	0.012*	-

* Significantly different ($P \leq 0.05$)

Table 4.5 presents group 1 is significantly different from groups 2, 3 and 4 ($P \leq 0.05$), while groups 2, 3 and 4 are not significantly different from each other in interpreting the referents of reflexives in that-clauses.

Table 4.6 Multi-comparisons: correct interpretation in sentences with infinitive clauses

Year		4	2	3	1
	\bar{X}	4.33	3.73	3.41	2.40
4	4.33	-			
2	3.73	0.763	-		
3	3.41	0.458	0.955	-	
1	2.40	0.009*	0.132	0.381	-

* Significantly different ($P \leq 0.05$)

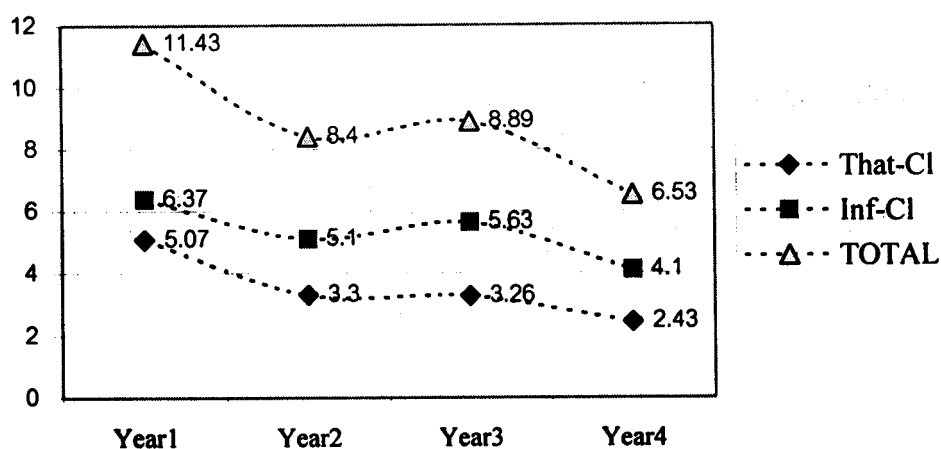
Table 4.6 shows group 1 was significantly different from group 4 only. The other groups are not significantly different.

The results presented below are relevant to the three types of misinterpretation. The students' selections might acquaint with the rule they use for reflexive interpretation. Table 4.7 demonstrates misinterpretation type X, which means the students wrongly stated that only long distance binding was allowed; or when the subjects selected the NP in the subject position of the main clause as the referent of the reflexive. Table 4.8 shows misinterpretation type Y, which means the students wrongly stated both local and long distance binding were permitted, or when the subjects selected choice (c) in the test. Table 4.9 demonstrates misinterpretation type Z, which means the subjects thought the anaphor did not have any antecedent within a sentence, or when the subjects selected choice (d).

The subjects of the present study showed all misinterpretation types.

Table 4.7 Means of misinterpretation type X

Year	Sentences with that-clauses (10 out of 20 sentences)		Sentences with infinitive clauses (10 out of 20 sentences)		TOTAL (20 sentences)	
	Mean	%	Mean	%	Mean	%
1	5.07	25.35	6.37	31.85	11.43	57.15
2	3.30	16.50	5.10	25.50	8.40	42.00
3	3.26	16.30	5.63	28.15	8.89	44.45
4	2.43	12.15	4.10	20.50	6.53	32.65
Mean of total	3.52	17.60	5.29	26.45	8.81	44.05

**Figure 2** Developmental lines by the mean scores of misinterpretation type X

According to the mean scores of misinterpretation type X in table 4.7, only long-distance binding is allowed most by group 1, group 3 and group 2 (11.43, 8.89 and 8.40, respectively); it is permitted the least by group 4 (6.53). The developmental line of misinterpretation type X tends to be down over time.

Table 4.8 Comparisons between sentences with that-clauses and sentences with infinitive clauses of the students' misinterpretation type X

Year	Means of sentences with		Differences	SD	Sig.
	that-clauses	infinitive clauses			
1	5.07	6.37	-1.30	1.73	0.000*
2	3.30	5.10	-1.80	2.33	0.000*
3	3.26	5.63	-2.37	1.71	0.000*
4	2.43	4.10	-1.67	2.23	0.000*
Total	3.52	5.29	-1.77	2.04	0.000*

The mean scores of misinterpretation type X in both sentence types across groups are very significantly different, $P \leq 0.001$.

Misinterpretation type X selected in sentences with that-clauses, sentences with infinitive clauses and in total are significantly different across the four groups (see ANOVA table in appendix B). The groups are significantly different as shown in the tables below.

Table 4.9 Multi-comparisons: Misinterpretation type X in both sentence types

Year		1	3	2	4
	\bar{X}	11.43	8.89	8.40	6.53
1	11.43	-			
3	8.89	0.078	-		
2	8.40	0.018*	0.968	-	
4	6.53	0.000*	0.118	0.270	-

* Significantly different ($P \leq 0.05$)

In both sentence types group 1 did significantly worse than group 2 and 4 ($P \leq 0.05$).

Table 4.10 Multi-comparisons: Misinterpretation type X in sentences with that-clauses

Year		1	2	3	4
	\bar{X}	5.07	3.30	3.26	2.43
1	5.07	-			
2	3.30	0.006*	-		
3	3.26	0.006*	1.000	-	
4	2.43	0.000*	0.372	0.440	-

* Significantly different ($P \leq 0.05$)

The mean of misinterpretation type X in the sentences with that-clauses of group 1 is significantly worse than those of groups 2, 3 and 4 ($P \leq 0.05$).

Table 4.11 Multi-comparisons: Misinterpretation type X in sentences with infinitive clauses

Year		1	3	2	4
	\bar{X}	6.37	5.10	5.63	4.10
1	6.37	-			
3	5.10	0.678	-		
2	5.63	0.197	0.853	-	
4	4.10	0.002*	0.093	0.402	-

* Significantly different ($P \leq 0.05$)

The means of misinterpretation type X in the sentences with infinitive clauses of group 1 and group 4 are significantly different ($P \leq 0.05$).

Table 4.12 Means of misinterpretation type Y

Year	Sentences with that-clauses (10 out of 20 sentences)		Sentences with infinitive clauses (10 out of 20 sentences)		TOTAL (20 sentences)	
	Mean	%	Mean	%	Mean	%
1	0.67	3.35	0.80	4.00	1.47	7.35
2	0.97	4.85	1.07	5.35	2.03	10.15
3	1.07	5.35	0.96	4.80	2.04	10.20
4	1.60	8.00	1.60	8.00	3.20	16.00
Mean of total	1.08	5.40	1.11	5.55	2.19	10.95

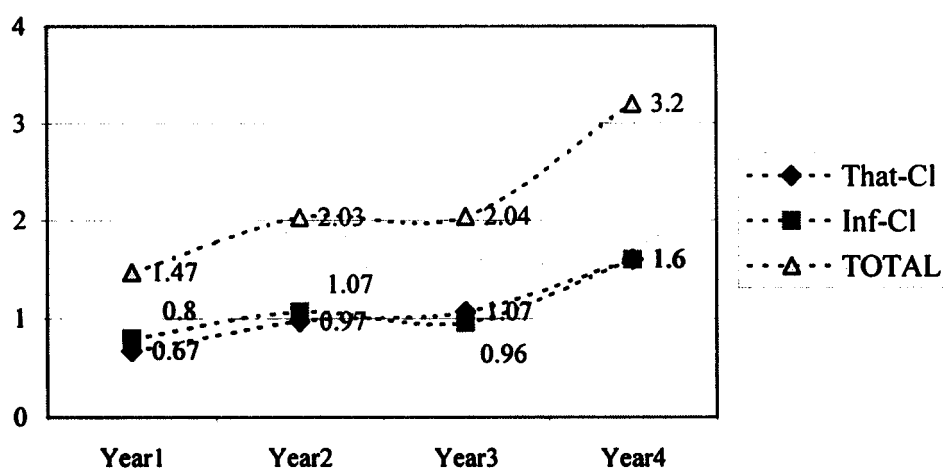
**Figure 3** Developmental lines by the mean scores of misinterpretation type Y

Table 4.12 shows that group 4 had the highest number of misinterpretation type Y, both local and long-distance bindings are permitted, with the mean score of 3.27. Groups 3, 2 and 1's means were 2.04, 2.03 and 1.47, respectively. According to Figure 3, developmental lines rise over time; however, there is no significant difference across the groups (as shown in ANOVA table in Appendix B). Obviously, the developmental lines of misinterpretation type Y in sentences with that-clause and sentences with infinitive clauses are very close to each other.

Table 4.13 Multi-comparisons: misinterpretation type Y in both sentences types

Year		4	3	2	1
	\bar{X}	3.20	2.04	2.03	1.47
4	3.20	-			
3	2.04	0.403	-		
2	2.03	0.376	1.000	-	
1	1.47	0.081	0.871	0.864	-

(P \geq 0.05)**Table 4.14** Multi-comparisons: Misinterpretation type Y in sentences with that-clauses

Year		4	3	2	1
	\bar{X}	1.60	1.07	0.97	0.67
4	1.60	-			
3	1.07	0.575	-		
2	0.97	0.388	0.994	-	
1	0.67	0.091	0.754	0.876	-

(P \geq 0.05)**Table 4.15** Multi-comparisons: Misinterpretation type Y in sentences with infinitive Clauses

Year		4	2	3	1
	\bar{X}	1.60	1.07	0.96	0.80
4	1.60	-			
2	1.07	0.567	-		
3	0.96	0.435	0.995	-	
1	0.80	0.211	0.917	0.981	-

(P \geq 0.05)

No significant difference of misinterpretation type Y across the four groups is shown in table 4.13 - table 4.15.

Table 4.16 Comparisons between sentences with that-clauses and sentences with infinitive clauses of the students' misinterpretation type Y

Year	Means of sentences with		Differences	SD	Sig.
	that-clauses	infinitive clauses			
1	0.67	0.80	-0.13	0.97	0.45
2	.97	1.07	-0.10	1.06	0.61
3	1.07	0.96	0.11	1.25	0.62
4	1.60	1.60	0.00	1.68	1.00
Total	1.08	1.11	-0.03	1.26	0.77

No significant difference between the mean scores of misinterpretation type Y in sentences with that-clauses and sentences with infinitive clauses among the four groups is shown in table 4.16.

Table 4.17 Means of misinterpretation type Z

Year	Sentences with that-clauses		Sentences with infinitive clauses		TOTAL (20 sentences)	
	(10 out of 20 sentences)		(10 out of 20 sentences)			
	Mean	%	Mean	%	Mean	%
1	0.67	3.35	0.43	2.15	1.10	5.50
2	0.23	1.15	0.10	0.50	0.33	1.65
3	0.15	0.75	0.00	0.00	0.15	0.75
4	0.03	0.15	0.03	0.15	0.07	0.35
Mean of total	0.27	1.35	0.15	0.75	0.42	2.10

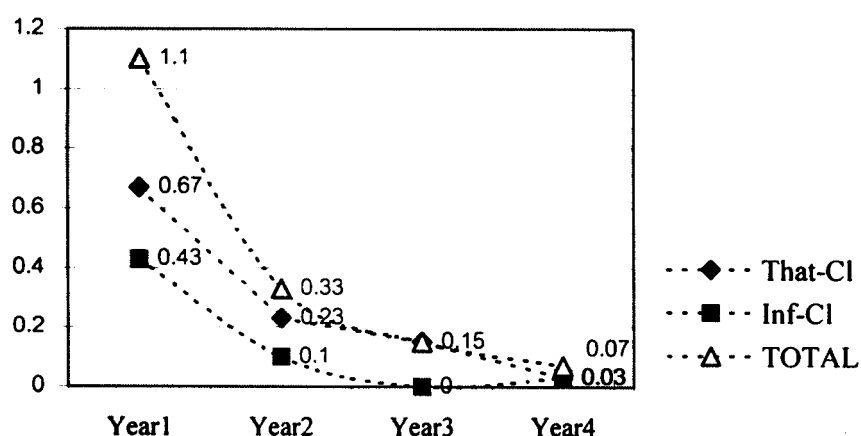


Figure 4 Developmental by the mean scores of misinterpretation type Z

Table 4.17 above shows misinterpretation type Z occurs the least compared with other misinterpretation types, with a total mean score of 0.42. Group 1 allowed this type the most (1.10), while the other groups allowed it very little (groups 2, 3 and 4's means are 0.33, 0.15 and 0.07, respectively). Over time, the developmental line of misinterpretation falls. All the three lines drop rapidly after year 1. After that they go down slightly.

Table 4.18 Multi-comparisons: Misinterpretation type Z in both sentence types

Year		1	2	3	4
	\bar{X}	1.10	0.33	0.15	0.07
1	1.10	-			
2	0.33	0.112	-		
3	0.15	0.034*	0.952	-	
4	0.07	0.014*	0.863	0.996	-

* Significantly different ($P \leq 0.05$)

Table 4.19 Multi-comparisons: Sentences with that-clauses in misinterpretation type Z

Year		1	2	3	4
	\bar{X}	0.67	0.23	0.15	0.03
1	0.67	-			
2	0.23	0.137	-		
3	0.15	0.059	0.976	-	
4	0.03	0.009*	0.753	0.945	-

* Significantly different ($P \leq 0.05$)

Table 4.20 Multi-comparisons: Sentences with infinitive-clauses in misinterpretation type Z

Year		1	2	4	3
	\bar{X}	0.43	0.10	0.03	0.00
1	0.43	-			
2	0.10	0.211	-		
4	0.03	0.092	0.980	-	
3	0.00	0.067	0.942	0.998	-

$P \geq 0.05$

Table 4.18 – table 4.20 above show that group 1 had significantly different misinterpretation type Y from groups 3 and 4 ($P \leq 0.05$). In addition, the group has significantly different mean score from group 4 in sentences with that-clauses, $P \leq 0.05$. In the sentences with infinitive clauses, no significant difference across the groups is found.

Table 4.21 Comparisons between sentences with that-clauses and sentences with infinitive clauses of the students' misinterpretation type Z

Year	Means of sentences with		Differences	SD	Sig.
	that-clauses	infinitive clauses			
1	0.67	0.43	0.24	0.81	0.13
2	0.23	0.10	0.13	0.57	0.21
3	0.15	0.00	0.15	0.36	0.43
4	0.03	0.03	0.00	÷	÷
Total	0.27	0.15	0.12	0.53	0.01*

÷ = t cannot be computed because the sum of caseweights is less than or equal 1.

(See Appendix B)

* Significantly different ($P \leq 0.05$)

The means of both sentence types are not significantly different, $P \leq 0.05$, by years 1, 2 and 3. The result of year 4 cannot be calculated because the means are too little. The total mean scores of both sentence types, however, are significantly different.

4.2 Discussions

Research Question 1: How do Thai EFL learners interpret English reflexives?

According to table 4.1, the students had both correct interpretation and misinterpretation of English reflexives; they, however, had fewer correct interpretations (8.58 or 42.9%) than misinterpretation (11.43 or 57.1%). The students allowed all kinds of bindings. But, interestingly, they were more likely to allow only long-distance binding.

Generally, the students clearly allow both local and long-distance bindings. This seems supportive to Yuan (1994) that L1 transfer should be explanation for the reflexive binding results, because L1s of the learners have both local and long-distance bindings. However, Eckman 1994; Hirakawa 1990; Lakshamanan and Teranisji 1994, Thomas 1989, 1991a, for examples, claim that it is not only L1 transfer. Parameter

setting of reflexive binding could also be an alternative explanation. The learners might be able to acquire local binding. L2 learners are able to reset parameters.

The results of this study show that the learners' interpretation and types of errors made were influenced by L1, especially at the beginning level. Year 1 has the least exposure to English and they have the lowest mean score of correct interpretation.

Additionally, some development has taken place. The students are able to reset reflexive parameter after they have more exposure to the target language. Language development of the students rapidly increases after year 1. During year 2 to year 4, correct interpretation becomes gradually greater.

The most often found error is misinterpretation type X, wrong selection of long-distance binding only. The learners might think about their own experience or knowledge of the world to decide which one could be a possible antecedent. For example, they may think commanders regularly want to be respected by soldiers, so in 'The commander ordered the soldier to respect himself.', they think 'himself' should refer to commander. The test used in this study might forced the learners to select the long-distance antecedent more if the learners use their world knowledge or experience in interpreting the reflexives.

In brief, the learners are still influenced by their L1 since in L1 the interpretation of reflexive is determined by pragmatics although, over time, their interpretation seems to be slightly better. English binding, therefore, needs to be taught directly in class so that Thai students communicate in English more appropriately.

Analysis of individual sentence:

When we consider the sentence types, the subjects could do significantly better in the sentences with that-clauses than the ones with infinitive clauses (Table 4.3). The finding agrees with some previous studies (e.g. Akiyama, 1991; Thomas, 1989; Wexler and Manzini, 1987; and Yuan, 1994).

It has been reported that L2 learners, when identifying antecedents for English reflexives, perform better on sentences with that-clauses than on sentences with infinitive clauses. Students interpret a reflexive more correctly in a sentence with a that-clause. In a sentence with an infinitive clause, they tend to take the NP in long-

distance position (Akiyama, 1999, 2002; Yuan, 1994). Yuan called this observable fact the tensed-infinitive asymmetry. In order to account for this asymmetry, Akiyama (1999: 33) proposed a scenario consisting of the following two processing principles:

- a. Saliency Principle: Choose a more important NP as a binder, i.e. the subject of the main clause,
- b. Closeness Principle: Choose a closer NP as a binder

Akiyama (1991) suggests that when learners encounter a sentence with an infinitive clause, they may interpret that the reflexive refers to the NP in the long-distance position, because they follow the Salient Principle. Consider the following sentence:

- (2) a. Windy and Monica_i wanted to read a book to themselves_i.
- b. Windy and Monica_i wanted [PRO_i to read a book to themselves_i.]

In (2), L2 learners may interpret that reflexive themselves refers to 'Windy and Monica', if they follow the Saliency Principle (1a) rather than the Closeness Principle (1b), although it is an invisible PRO that is actually referred to. This might be applied to explain how the subjects of this study interpret English reflexives in, for example, Q.14:

Q.14 Windy and Monica_i wanted [their parents_j to read a book to themselves_{*i/j}.]

89 out of 117 or 76.10% of the students thought the reflexive themselves refers to 'Windy and Monica' in long distance binding position rather than the NP in local binding position. The Saliency Principle might lead them to conclude that long-distance binding is possible in this sentence with an infinitive clause.

On the other hand, 105 out of 117 or 89.70% of the students correctly identified the binder of reflexive as 'Sophia', but not 'Tanya' in Q.9:

Q.9 Tanya_i thought [Sophia_j sprayed herself_{*i/j} with perfume.]

Since the actual binder 'Sophia' is salient and closer, both the Saliency and Closeness Principles would lead the students to interpret that 'Sophia' rather than 'Tanya', is the binder.

This might explain why the Thai university learners of English accept long-distance binding in sentences with infinitive clauses more often than that in sentences

with that-clauses. However, the mean scores indicate the students still misinterpreted both sentence types.

Other interpretation of sentences in this study might be influenced by the learners' L1 and experience, for instance:

A sentence with an infinitive clause:

Q. 20 Joey and Alex_i wanted [their employees_j to introduce themselves_{•ij} to their friends.]

85 out of 117 or 72.60% of the participants could correctly interpret that the reflexive themselves refers to 'their employees' in a sentence with infinitive clause. But in item 7 which is of the same sentence structure as item 20, Barbara wanted Angela to cook for herself, 59 out of 117 or 50.40% of the subjects wrongly selected the antecedent.

A sentence with a that-clause:

Q.15 The president_i heard [the famous actor_j talked about himself_{•ij} on TV.]

70 out of 177 or 59.80% of the students inaccurately choose 'the president' as the binder of the reflexive himself. The students may pragmatically interpret the reflexive although the antecedent 'the famous actor' is both salient and closer. This might give explanation about how and why students selected wrong answers in items 4 (The commander ordered the soldier to respect himself.), 12 (Jane said the nurse washed herself.) and 19 (The super star saw Annie took a picture of herself.)

Overall, the students tended to be influenced by their L1 rule, which accepts both local and long distance binding. Frequency of (a) selecting is the highest by group 1, while it is the lowest by group 4. Frequency of (b) selecting is the highest by group 2, 3 and 4, while it is the lowest by group 1. These may be influenced by the learners' experiences or world knowledge. For example, nurses normally take care of patients; the learners might think about possible persons taking an action in a sentence 'Jane said the nurse washed herself', for example.

Other choices, (c) and (d), were selected as the third and the fourth in rank. Choice (c) selection can be affected by L1 transfer too, because the students may think that either local binder or long-distance binder is a possible antecedent. Choice (d) was rarely chosen; however, 14 out of 117 or 12% of the students chose (d) in item 11, Avila and John believed the old men shot themselves. There seem to be no good

reason why the students interpreted the reflexive themselves to refer to other people outside the sentence. Guessing might be the only reason; or if they think their interpretation is possible (for both bindings), they might just arbitrarily choose any binding.

In brief, the Salient Principle and the Closeness Principle might explain some sentences why the students interpreted correctly and incorrectly; however, personal world experience is an additional reason. The participants of the present study are likely to acquire more English reflexive after taking English courses according to their total mean score. However, only 47 (40.1%) out of 117 students passed the test. That means the students still applied other reflexive rules like Thai reflexive binding, which allows both local and long-distance bindings. The students' interpretation is the most manipulated by L1 transfer and their knowledge of the world. This partially supports the first research hypothesis which says that the interpretation will be influenced by L1 especially at the beginning level. Principle A, which says an anaphor must be bound in its governing category, might be barely acquired by Thai students who have exposed to English more than eight years; however, the students might acquire more in the long future after they have more exposure to English.

Research Question 2: What types of errors occur in the learners' interpretation?

The students chose all misinterpretation types with different degrees. Misinterpretation type X, which means the students wrongly stated that only long distance binding was allowed, was selected the most (mean =8.81), type Y, the students wrongly stated both local and long distance binding were permitted, was the second (mean =2.19) and type Z, the subjects thought the anaphor did not have any antecedent within a sentence, was selected the least (mean =0.42).

Misinterpretation type X may be due to world experience and/or L1 transfer. This type was selected the most with a total mean score of 8.81 or 44.05% which is even more than the correct interpretation (8.58 or 42.9%). This shows that the subjects still allowed long-distance binding. Notably, this type of error decreases over time although the lowest total mean of group 4 is still somewhat high (6.53 or 32.65%).

Misinterpretation type X might have been chosen because of a long-distance binding forced test based on their experience, for example:

Q. 12 Jane said [the nurse washed herself.]

Q. 14 Windy and Monica wanted [their parents to read a book to themselves.]

The learners may choose NPs in long-distance positions if they think about the possibility in real world that nurses usually help patients and parents usually help their children.

Misinterpretation type Y, which means the students wrongly stated both local and long distance binding were permitted, might be due to L1 transfer factor because Thai allows both local and long-distance bindings. Although misinterpretation type Y seems to decrease over time, the means of this misinterpretation type show nothing significantly changes.

Although misinterpretation type Z, which means the subjects thought the anaphor is out of a sentence, showed incomprehensible rule governing the students' interpretation and it could be a serious problem. It was rarely selected by the subjects, the mean score = 0.42 or 2.10%. In addition, this misinterpretation type very rarely occurred over time.

The misinterpretation results of the present study show that the high proficiency students tended to have more misinterpretation type Y than the lower ones. In contrast, misinterpretation types X and Z- the antecedents are in long-distance position only and out of sentences only, respectively- were most selected by the lowest proficiency students, group 1. These support both hypotheses that the interpretation will be manipulated by L1 and the higher language proficiency group would be better as they have more exposure to English.

All misinterpretation types can lead the learners to miscommunication; therefore, teaching local binding in English reflexive explicitly with negative evidence is important for Thai learners.

Research Question 3: Does the interpretation differ among learners of different language proficiency levels?

Table 4.2 shows that group 4 had the highest mean score of correct interpretation (11.17). Groups 2, 3 and 1's means were 9.23, 8.93 and 6.00, respectively. Group 4 had the highest mean scores of both sentences with that-clauses and infinitive clauses; group 1 has the lowest of both sentence types. These results are not surprising. They support hypothesis (2), which says the interpretation would differ among different groups of learners. The higher language proficiency group would be better as their knowledge develops.

Exposure time to English in formal class of group 4 is the longest; the mean scores of this group are the best. On the other hand, the beginners, group 1, had the lowest mean scores. They had the shortest exposure time to the target language. Interestingly, group 3 had a little lower score than group 2 although group 3 has longer exposure to the target language. This may be because, when this study was conducted, the group 2 students were taking the course of introduction to linguistics which covered some information about English reflexives. They have just exposed to English binding in class and they could do better than group 3 students, who might not have studied this or have forgotten what they had studied. Nevertheless, the mean scores of correct interpretation of the two groups are not significantly different.

Based on these results, we may, therefore, conclude that the more L2 learners are exposed to the target language, the better they become in finding the antecedents of the reflexives.

4.3 Pedagogical implications of the study

It cannot be denied that there is connection between language acquisition and language teaching (Braid, 1999). The present research can provide teachers with an awareness of grammatical details and difficulty our learners may have in learning to communicate in L2.

Based on the findings of this study, the students with longer exposure time to English seem to acquire better English reflexive binding principles as they could perform the best. However, the data shows 59.83% (70 out of 117 students) still fail the test of English reflexive interpretation. This suggests that English reflexive binding theory should be explicitly taught. The students may need explicit teaching of

English reflexive binding in class so that they can learn to correctly interpret English reflexive.

White (1995) discussed whether binding could be taught or not. She mentioned that adult language learners are surrounded by negative evidence, or correction. White (1995) suggested that teachers should control negative evidence so that it is most useful to the learner. Teachers of English should correct learners' English reflexive usage especially those influenced by L1, like Thai long-distance binding. This might help the learners to notice and reset their parameter of long-distance and local binding to be only local one.

Furthermore, teaching sentence and clause concepts is truly essential for Thai students to see clearer minimal clauses inside a sentence and apply the knowledge of English reflexive rules for better English communication.

CHAPTER 5

CONCLUSION

This chapter presents the conclusion of the study, limitations and recommendations for further studies.

5.1 Conclusion

This study aims to find out how Thai EFL learners of different language proficiency levels interpret English reflexives and how they acquire the binding of reflexives over time, after taking English courses in the university level; and to help teaching English reflexives to enable Thai students to communicate effectively in English.

The study was conducted at Ubon Ratchathani University to find out how 4 different English proficiency groups of Thai students majoring in English interpret English reflexives. The subjects of this study were 117 English major students of Ubon Ratchathani University. They were year 1, year 2, year 3 and year 4 students (30, 30, 27 and 30, respectively). Their English proficiency levels were assumed to be different according to their exposure time to English. The subjects took a 20 multiple choice item test of reflexive interpretation consisting of sentences with that-clauses and infinitive clauses, in the first semester of academic year 2006. The data were analyzed in accordance with the three research questions: (1) How do Thai EFL learners interpret English reflexives? (2) What types of errors occur in the learners' interpretation? and (3) Does the interpretation differ among learners of different language proficiency levels?

The results of the study show that English reflexive interpretation of the Thai EFL learners in four different language proficiency levels was influenced by Thai reflexive rules (allowing both local and long-distance bindings) and the learners' world experience. These lead them to misinterpretation of English reflexives. The long-distance binding is permitted most by the students, especially the lowest

proficiency group. Both local and long-distance bindings were allowed most by the highest proficiency students, group 4.

The acquisition of binding is still quite low as 58.83% of the subjects fail the test. However, the acquisition seems to be more when exposure is more. The learners may need explicit teaching of English reflexive rules in class so that they can learn and communicate more quickly and successfully.

5.2 Limitations of the study

Although it was carefully planned, this study might have some limitations.

First, the students' language proficiency levels were assumed by considering their in-class-exposure time to English. This assumption might not be so correct as a student in year 1 may be in a higher proficiency level than some who are in year 3. Accordingly, it is hard to conclude language development of the subjects.

Second, the test of this study is in the sentence level; however, in real life communication reflexives are used in contexts, which might make it easier for students to have correct interpretation.

Additionally, there was no interview after the test to ask the subjects why each antecedent was chosen, which might have prevented us from having a more understandable and valid conclusion.

5.3 Recommendations for further study

Based on the limitations above, the following are recommendations for further research.

First, a placement test should be done before collecting the data so that students' language proficiency levels are more accurate.

Second, further research should provide a test of English reflexives for interpretation in contexts or with stories as research instrument so that the test is similar to real life English communication.

Third, further research should include an interview to find out what actually happened in the subjects' minds, in case the data are not clear.

Lastly, a test of production should be conducted to see if there will be any difference between language perception and production.

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APPENDICES

APPENDIX A
English Reflexive Interpretation Test

Year _____

Test taker _____

คำสั่ง: สรรพนามสะท้อนที่ขีดเส้นใต้หมายถึงนามวลีในข้อใด เลือกได้เพียงข้อเดียว ท่านสามารถ
ยกมือถามความหมายของคำศัพท์ที่ไม่ได้มีคำแปลไว้ให้ได้ (ข้อสอบ 20 ข้อ เวลา 20 นาที)

- 1) The soldier dreamed the doctor killed himself.
ทหาร ฝัน แพทย์ ช่าง
(a) the soldier (b) the doctor
(c) can be both (a) and (b) (d) another person
- 2) The hosts thought Beck and Victoria would introduce themselves.
เจ้าภาพ คิด แนะนำตัว
(a) the hosts (b) Beck and Victoria
(c) can be both (a) and (b) (d) other people
- 3) His little brother told Terry to cover himself with a jacket.
บอก กลุม เสื้อแจ็คเก็ต
(a) his little brother (b) Terry
(c) can be both (a) and (b) (d) another person
- 4) The commander ordered the soldier to respect himself.
ผู้บังคับบัญชา ตั้ง ทหาร เคารพ
(a) the commander (b) the soldier
(c) can be both (a) and (b) (d) another person
- 5) Bobby imagined Lenny hit himself.
จินตนาการ ดี
(a) Bobby (b) Lenny
(c) can be both (a) and (b) (d) another person

6) Wendy asked Tanya not to criticize herself.

ขอ วิพากษ์วิจารณ์

- (a) Wendy (b) Tanya
(c) can be both (a) and (b) (d) another person

7) Barbara wanted Angela to cook for herself.

ต้องการ ทำอาหาร

- (a) Barbara (b) Angela
(c) can be both (a) and (b) (d) another person

8) Jenny's sister believed Gina talked to herself.

เชื่อ พูด

- (a) Jenny's sister (b) Gina
(c) can be both (a) and (b) (d) another person

9) Tanya thought Sophia sprayed herself with perfume.

คิด ฉีด น้ำหอม

- (a) Tanya (b) Sophia
(c) can be both (a) and (b) (d) another person

10) Kenneth convinced Jimmy's brother to believe in himself.

โน้มน้าว เชื่อ

- (a) Kenneth (b) Jimmy's brother
(c) can be both (a) and (b) (d) another person

11) Avila and John believed the old men shot **themselves**.

ເງື່ອ

ຍିଏ

- (a) Avila and John (b) the old men
- (c) can be both (a) and (b) (d) other people

12) Jane said the nurse washed herself.

พูด

พยายาม ทำความสะอาด

- (a) Jane (b) the nurse
(c) can be both (a) and (b) (d) another person

13) Tom ordered Robin to look at himself.

၆၂

ນອງຄູ

- (a) Tom (b) Robin
- (c) can be both (a) and (b) (d) another person

14) Windy and Monica wanted their parents to read a book to **themselves**.

ต้องการ

พ่อแม่

อ่านหนังสือ

- (a) Windy and Monica (b) their parents
(c) can be both (a) and (b) (d) other people

15) The president heard the famous actor talked about **himself** on TV.

ประธานาธิบดี

ได้ยื่น

มีชื่อเต็ม

แสดง หุด

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

- (a) The president (b) the famous actor
- (c) can be both (a) and (b) (d) another person

16) Bill wanted his son to accept himself.

ต้องการ ลูกชาย ยอมรับ

- (a) Bill (b) his son
(c) can be both (a) and (b) (d) another person

17) Helen expected Crystal to buy new shoes for herself.

คาดหวัง ซื้อ รองเท้า

- (a) Helen (b) Crystal
(c) can be both (a) and (b) (d) another person

18) Catherine said the teacher hurt herself.

พูด ทำร้าย

- (a) Catherine (b) the teacher
(c) can be both (a) and (b) (d) another person

19) The super star saw Annie took a picture of herself.

ดารา เห็น ถ่ายภาพ

- (a) The super star (b) Annie
(c) can be both (a) and (b) (d) another person

20) Joey and Alex wanted their employees to introduce themselves to their friends.

ต้องการ ลูกจ้าง แนะนำตัว

- (a) Joey and Alex (b) their employees
(c) can be both (a) and (b) (d) other people

APPENDIX B

Statistical Tables

STATISTICAL TABLES

(1) Results of the sentences with that-clauses:

Table 1 The interpretation of question 1

Q.1 The soldier dreamed the doctor killed <u>himself</u> .										
Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	17	56.70	8	26.70	6	22.20	5	16.70	36	30.80
Ⓑ	9	30.00	20	66.70	17	63.00	15	50.00	61	52.10
c	4	13.30	2	6.70	4	14.80	10	33.30	20	17.10
d	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

Ⓑ = the correct answer

Table 2 The interpretation of question 2

Q.2 The hosts thought Beck and Victoria would introduce <u>themselves</u> .										
Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	2	6.70	0	0.00	0	0.00	1	3.30	3	2.60
Ⓑ	27	90.00	29	96.70	27	100.00	29	96.70	112	95.70
c	1	3.30	1	3.30	0	0.00	0	0.00	2	1.70
d	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

Ⓑ = the correct answer

Table 3 The interpretation of question 5

Q.5 Bobby imagined Lenny hit <u>himself</u> .										
Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	17	56.70	7	23.30	10	37.00	10	33.30	44	37.60
Ⓑ	8	26.70	17	56.70	16	59.30	15	50.00	56	47.90
c	3	10.00	6	20.00	1	3.70	5	16.70	15	12.80
d	2	6.70	0	0.00	0	0.00	0	0.00	2	1.70

Ⓑ = the correct answer

Table 4 The interpretation of question 8

Q.8 Jenny's sister believed Gina talked to <u>herself</u> .										
Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	14	46.70	9	30.00	4	14.80	3	10.00	30	25.60
Ⓑ	12	40.00	20	66.70	20	47.10	24	80.00	76	65.00
c	1	3.30	1	3.30	3	11.10	2	6.70	7	6.00
d	3	10.00	0	0.00	0	0.00	1	3.30	4	3.40

Ⓑ = the correct answer

Table 5 The interpretation of question 9

Q.9 Tanya thought Sophia sprayed herself with perfume.

Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	7	23.30	0	0.00	0	0.00	0	0.00	7	6.00
ⓑ	22	73.30	26	86.70	27	100.00	30	100.00	105	89.70
c	1	3.30	3	10.00	0	0.00	0	0.00	3	2.60
d	0	0.00	1	3.30	0	0.00	0	0.00	2	1.70

ⓑ = the correct answer

Table 6 The interpretation of question 11

Q.11 Avila and John believed the old men shot themselves.

Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	18	60.00	13	43.30	5	18.50	9	30.00	45	38.50
ⓑ	5	16.70	12	40.00	17	63.00	21	70.00	55	47.00
c	1	3.30	1	3.30	1	3.70	0	0.00	3	2.60
d	6	20.00	4	13.30	4	14.80	0	0.00	14	12.00

ⓑ = the correct answer

Table 7 The interpretation of question 12

Q12 Jane said the nurse washed <u>herself</u> .										
Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	20	66.70	15	50.00	17	63.00	12	40.00	64	54.70
Ⓐ	5	16.70	9	30.00	3	11.10	11	36.70	28	23.90
c	1	3.30	4	13.30	7	25.90	5	16.70	17	14.50
d	4	13.30	2	6.70	0	0.00	2	6.70	8	6.80

Ⓐ = the correct answer

Table 8 The interpretation of question 15

Q.15 The president heard the famous actor talked about <u>himself</u> on TV.										
Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	20	66.70	20	66.70	19	70.40	11	36.70	70	59.80
Ⓐ	4	13.30	5	16.70	3	11.10	13	43.30	25	21.40
c	3	10.00	5	16.70	5	18.50	6	20.00	19	16.20
d	3	10.00	0	0.00	0	0.00	0	0.00	3	2.60

Ⓐ = the correct answer

Table 9 The interpretation of question 18

Q.18 Catherine said the teacher hurt <u>herself</u> .										
Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	15	50.00	13	43.30	10	37.00	8	26.70	46	39.30
ⓑ	10	33.30	14	46.70	12	44.40	18	60.00	54	46.20
c	4	13.30	3	10.00	5	18.50	4	13.30	16	13.70
d	1	3.30	0	0.00	0	0.00	0	0.00	1	0.90

ⓑ = the correct answer

Table 10 The interpretation of question 19

Q.19 The super star saw Annie took a picture of <u>herself</u> .										
Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	22	73.30	14	46.70	17	63.00	13	43.30	66	56.40
ⓑ	6	20.00	13	43.30	7	25.90	15	50.00	41	35.00
c	2	6.70	3	10.00	3	11.10	2	6.70	10	8.50
d	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

ⓑ = the correct answer

(2) Results of the sentences with that-clauses:

Table 11 The interpretation of question 3

Q.3 His little brother told Terry to cover himself with a jacket.

Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	8	26.70	8	26.70	4	14.80	1	3.30	21	17.90
Ⓐ	18	60.00	18	60.00	19	70.40	24	80.00	79	67.50
c	3	10.00	4	13.30	4	14.80	5	16.70	16	13.70
d	1	3.30	0	0.00	0	0.00	0	0.00	1	0.90

Ⓐ = the correct answer

Table 12 The interpretation of question 4

Q.4 The commander ordered the soldier to respect himself.

Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	25	83.30	19	63.30	21	77.80	16	53.30	81	69.20
Ⓐ	1	3.30	9	30.00	6	22.20	10	33.30	26	22.20
c	3	10.00	2	6.70	0	0.00	4	13.30	9	7.70
d	1	3.30	0	0.00	0	0.00	0	0.00	1	0.90

Ⓐ = the correct answer

Table 13 The interpretation of question 6

Q.6 Wendy asked Tanya not to criticize <u>herself</u> .										
Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	25	83.30	15	50.00	21	77.80	13	43.30	74	63.20
Ⓐ	3	10.00	9	30.00	4	14.80	12	40.00	28	23.90
c	1	3.30	5	16.70	2	7.40	5	16.70	13	11.10
d	1	3.30	1	3.30	0	0.00	0	0.00	2	1.70

Ⓐ = the correct answer

Table 14 The interpretation of question 7

Q.7 Barbara wanted Angela to cook for <u>herself</u> .										
Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	21	70.00	16	53.30	11	40.70	11	36.70	59	50.40
Ⓐ	4	13.30	11	36.70	14	51.90	14	46.70	43	36.80
c	4	13.30	3	10.00	2	7.40	5	16.70	14	12.00
d	1	3.30	0	0.00	0	0.00	0	0.00	1	0.90

Ⓐ = the correct answer

Table 15 The interpretation of question 10

Q.10 Kenneth convinced Jimmy's brother to believe in <u>himself</u> .										
Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	22	73.30	19	63.30	15	55.60	11	36.70	67	57.30
ⓑ	7	23.30	6	20.00	11	40.70	15	50.00	39	33.30
c	1	3.30	5	16.70	1	3.70	4	13.30	11	9.40
d	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

ⓑ = the correct answer

Table 16 The interpretation of question 13

Q.13 Tom ordered Robin to look at <u>himself</u> .										
Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	17	56.70	11	36.70	12	44.40	4	13.30	44	37.60
ⓑ	5	16.70	15	50.00	7	25.90	20	66.70	47	40.20
c	5	16.70	3	10.00	8	29.60	5	16.70	21	17.90
d	3	10.00	1	3.30	0	0.00	1	3.30	5	4.30

ⓑ = the correct answer

Table 17 The interpretation of question 14

Q.14 Windy and Monica wanted their parents to read a book to themselves.

Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	21	70.00	21	70.00	23	85.20	24	80.00	89	76.10
ⓑ	4	13.30	5	16.70	3	11.10	5	16.70	17	14.50
c	1	3.30	4	13.30	1	3.70	1	3.30	7	6.00
d	4	13.30	0	0.00	0	0.00	0	0.00	4	3.40

ⓑ = the correct answer

Table 18 The interpretation of question 16

Q.16 Bill wanted his son to accept himself.

Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	24	80.00	20	66.70	20	74.10	15	50.00	79	67.50
ⓑ	4	3.30	9	30.00	4	14.80	11	36.70	28	23.90
c	2	6.70	1	3.30	3	11.10	4	13.30	10	8.50
d	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

ⓑ = the correct answer

Table 19 The interpretation of question 17

Q.17 Helen expected Crystal to buy new shoes for herself.

Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	22	73.30	18	60.00	20	74.10	16	53.30	76	65.00
Ⓑ	4	13.30	9	30.00	5	18.50	10	33.30	28	23.90
c	4	13.30	3	10.00	2	7.40	4	13.30	13	11.10
d	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

Ⓑ = the correct answer

Table 20 The interpretation of question 20

Q.20 Joey and Alex wanted their employees to introduce themselves to their friends.

Year Choice	Year 1	%	Year 2	%	Year 3	%	Year 4	%	Total	%
a	6	20.00	6	20.00	5	18.50	4	13.30	21	17.90
Ⓑ	22	73.30	21	70.00	19	70.40	23	76.70	85	72.60
c	2	6.70	2	6.70	3	11.10	3	10.00	8	6.80
d	0	0.00	1	3.30	0	0.00	0	0.00	3	2.60

Ⓑ = the correct answer

(3) Tables of comparisons between sentences with that-clauses and sentences with infinitive clauses

Table 21 Comparison between sentences with that-clauses and sentences with infinitive clauses of students' correct interpretation

Year	Paired differences mean	SD	SE	95% Confidence Interval of the Difference		t	df	Sig.
				Lower	Upper			
1	1.20	1.82	0.33	0.52	1.89	3.60	29	0.001**
2	1.77	2.16	0.39	0.96	2.57	4.48	29	0.000**
3	2.11	1.91	0.37	1.36	2.90	5.75	26	0.000**
4	1.53	2.43	0.44	0.63	2.44	3.45	29	0.000**
Total	1.64	2.10	0.19	1.26	2.03	8.46	116	0.000**

** Significantly different ($P \leq 0.01$)

Table 22 Comparison between sentences with that-clauses and sentences with infinitive clauses of students' misinterpretation type X

Year	Paired differences mean	SD	SE	95% Confidence Interval of the Difference		t	df	Sig.
				Lower	Upper			
1	-1.30	1.73	0.31	-1.94	-0.66	-4.13	29	0.000**
2	-1.80	2.33	0.42	-2.67	-0.93	-4.24	29	0.000**
3	-2.37	1.71	0.33	-3.05	-1.70	-7.19	26	0.000**
4	-1.67	2.23	0.41	-2.50	-0.83	-4.09	29	0.000**
Total	-1.77	2.04	0.19	-2.14	-1.40	-9.40	116	0.000**

** Significantly different ($P \leq 0.01$)

Table 23 Comparison between sentences with that-clauses and sentences with infinitive clauses of students' misinterpretation type X

Year	Paired differences mean	SD	SE	95% Confidence Interval of the Difference		t	df	Sig.
				Lower	Upper			
1	-0.13	0.97	0.18	-0.50	0.23	-0.75	29	0.45*
2	-0.10	1.06	0.19	-0.50	0.30	-0.52	29	0.61
3	0.11	1.25	0.24	-0.38	0.61	0.46	26	0.62
4	0.00	1.68	0.31	-0.63	0.63	0	29	1.00
Total	-0.03	1.26	0.12	-0.26	0.20	-0.29	116	0.77

* Significantly different ($P \leq 0.05$)

Table 24 Comparison between sentences with that-clauses and sentences with infinitive clauses of students' misinterpretation type Z

Year	Paired differences mean	SD	SE	95% Confidence Interval of the Difference		t	df	Sig.
				Lower	Upper			
1	0.24	0.81	0.15	-0.07	0.54	1.56	29	0.13*
2	0.13	0.57	0.10	-0.08	0.35	1.28	29	0.21*
3	0.15	0.36	0.07	0.00	0.29	2.13	26	0.43*
4	÷	÷	÷	÷	÷	÷	÷	÷
Total	0.12	0.53	0.05	0.03	0.23	2.60	116	0.01*

÷ = t cannot be computed because the sum of caseweights is less than or equal 1.

* Significantly different ($P \leq 0.05$)

(4) Tables of ANOVA for group 1 to group 4

Table 25 ANOVA for group 1 to group 4: Correct interpretation

	df	Sum of squares	Mean square	F	Sig.
TOTAL					
Between groups	3	294.46	98.15	6.86	.000**
Within groups	113	1616.02	14.30		
Total	116	1910.48			
St. with that-clauses:					
Between groups	3	94.65	31.55	6.72	.000**
Within groups	113	530.91	4.69		
Total	116	625.56			
St. with infinitive clauses:					
Between groups	3	58.89	19.63	4.22	.007*
Within groups	113	526.25	4.66		
Total	116	585.15			

* Significantly different ($P \leq 0.05$) ** Significantly different ($P \leq 0.01$)

Table 26 ANOVA for group 1 to group 4: Misinterpretation type X

	df	Sum of squares	Mean square	F	Sig.
TOTAL					
Between groups	3	367.16	112.39	9.30	.000**
Within groups	113	1486.70	13.16		
Total	116	1853.86			
St. with that-clauses:					
Between groups	3	110.48	36.83	10.33	.002*
Within groups	113	402.72	3.56		
Total	116	513.20			
St. with infinitive clauses:					
Between groups	3	81.46	27.15	5.36	.000**
Within groups	113	572.66	5.07		
Total	116	654.12			

* Significantly different ($P \leq 0.05$) ** Significantly different ($P \leq 0.01$)

Table 27 ANOVA for group 1 to group 4: Misinterpretation type Y

	df	Sum of squares	Mean square	F	Sig.
TOTAL					
Between groups	3	47.67	15.89	2.44	.068
Within groups	113	736.20	6.52		
Total	116	783.86			
St. with that-clauses:					
Between groups	3	13.62	4.54	2.30	.081
Within groups	113	222.69	1.97		
Total	116	236.31			
St. with infinitive clauses:					
Between groups	3	10.73	3.58	1.71	.170
Within groups	113	236.83	2.097		
Total	116	247.556			

Table 28 ANOVA for group 1 to group 4: Misinterpretation type Z

	df	Sum of squares	Mean square	F	Sig.
TOTAL					
Between groups	3	19.84	6.61	4.59	.005*
Within groups	113	162.84	1.44		
Total	116	182.48			
St. with that-clauses:					
Between groups	3	6.84	2.28	4.57	.005*
Within groups	113	56.41	.50		
Total	116	63.25			
St. with infinitive clauses:					
Between groups	3	3.50	1.17	3.21	.026*
Within groups	113	41.03	.36		
Total	116	44.53			

* Significantly different ($P \leq 0.05$)

(5) Students' interpretations**Table 29** The students' interpretation

Year	Correct Interpretation		Misinterpretation		TOTAL
	Number	%	Number	%	
1 (n = 30)	5	16.67%	25	83.33%	100%
2 (n = 30)	11	36.67%	19	63.33%	100%
3 (n = 27)	14	51.85%	13	48.15%	100%
4 (n = 30)	17	56.67%	13	43.33%	100%
TOTAL (N = 117)	47	40.17%	70	59.83%	100%

VITAE**NAME**

Jarunee Anupan

INSTITUTE ATTENDED

1999

Bachelor of Arts (English)

Ubon Ratchathani Rajabhat University

2005

Certificate (Intensive English)

University of Iowa

POSITION HELD

1998 – 2000

Assistant Administrator

SHARE Thailand, a Japanese NGO working on
HIV/AIDS projects in Ubon. and Amnat.

2000-2003

English Lecturer

English Program

Faculty of Humanities and Societies

Ubon Ratchathani Rajabhat University

