**RESEARCH REPORT**

**ความแตกต่างของรูปแบบการหยุดเว้นระยะในการอ่านภาษาอังกฤษของ
เจ้าของภาษาและผู้เรียนไทย**

**VARIABILITY OF PAUSE PATTERNS IN ENGLISH READ SPEECH OF NATIVE
SPEAKERS AND THAI LEARNERS OF ENGLISH**

**BY**

**SOISITHORN ISARANKURA**

**DHURAKIJ PUNDIT UNIVERSITY**

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# ACKNOWLEDGEMENTS

# TABLE OF CONTENTS

**Page**

# LIST OF TABLES

# LIST OF FIGURES

**Page**

## บทคัดย่อ

การวิจัยได้ชี้ให้เห็นว่าการหยุดเว้นระยะมีความสำคัญต่อการสื่อสารด้วยวาจา เนื่องจากการหยุดเว้นระยะทำให้การสื่อสารของผู้พูดเป็นที่เข้าใจได้ง่ายขึ้น และยังช่วยพัฒนาความสามารถในการฟังภาษาของผู้เรียนภาษาให้เข้าใจได้ดียิ่งขึ้นด้วย แต่เป็นที่น่าเสียดายว่าการสอนการหยุดเว้นระยะอย่างถูกต้องนั้นได้รับความสนใจในการนำไปสอนในชั้นเรียนน้อยมาก จึงทำให้นักเรียนไทยจำนวนมากไม่สามารถแบ่งกลุ่มคำเพื่อการหยุดเว้นระยะได้อย่างเหมาะสม ซึ่งเป็นสาเหตุให้ผู้เรียนออกเสียงไม่เป็นธรรมชาติหรือบางครั้งยังอาจก่อให้เกิดอุปสรรคต่อการสื่อสารอีกด้วย งานวิจัยเรื่องนี้จึงมุ่งที่จะศึกษารูปแบบการหยุดเว้นระยะจากการอ่านออกเสียงของผู้เรียนไทยโดยเปรียบเทียบกับรูปแบบการหยุดของเจ้าของภาษา กลุ่มตัวอย่างประกอบด้วยผู้เรียนไทยจำนวน    30 คน ซึ่งถูกจำแนกออกเป็น 2 กลุ่มตามความสามารถทางภาษาอังกฤษเป็นกลุ่มที่มีความสามารถระดับสูงและระดับต่ำ และกลุ่มเจ้าของภาษา 1 กลุ่ม จำนวน 7 คน โดยผู้เข้าร่วมการวิจัยทั้งหมดได้บันทึกเสียงการอ่านนิทานอิสป ที่ใช้เป็นแบบทดสอบจำนวน 1 เรื่องในห้องปฏิบัติการทางภาษา จากนั้นจึงวิเคราะห์เสียงที่บันทึกไว้โดยใช้การฟังร่วมไปกับการใช้โปรแกรมคอมพิวเตอร์เพื่อหาตำแหน่งการหยุดและวัดค่าระยะเวลาการหยุดในแต่ละตำแหน่ง

ผลการวิจัยพบว่า เจ้าของภาษาหยุดเว้นระยะพร้อมเพรียงกันที่ตำแหน่งระหว่างประโยคและระหว่างอนุประโยคหลัก แต่ได้พบความแตกต่างของรูปแบบการหยุดเป็นรายบุคคลเกิดขึ้นในตำแหน่งระหว่างข้อความที่มีความสัมพันธ์ทางไวยากรณ์ระดับรองลงไป ในกลุ่มผู้เรียนไทยพบว่า กลุ่มที่มีความสามารถทางภาษาระดับต่ำกว่ามีการหยุดเว้นระยะมากครั้งกว่าและหน่วยระหว่างช่วงการหยุดมีจำนวนคำน้อยกว่ากลุ่มที่มีความสามารถทางภาษาระดับสูง ซึ่งในกลุ่มนี้นอกจากหน่วยระหว่างช่วงหยุดจะมีจำนวนคำมากกว่าแล้ว คำในหน่วยหยุดยังแสดงความสัมพันธ์เชิงไวยากรณ์และอรรถศาสตร์ได้ชัดเจนมากกว่าด้วย การหยุดที่น้อยครั้งกว่าของกลุ่มความสามารถทางภาษาสูงกว่านี้ทำให้รู้สึกถึงการสื่อสารที่ราบรื่นมากกว่า ซึ่งผลการวิจัยครั้งนี้สอดคล้องกับการวิจัยในอดีตที่แสดงให้เห็นว่าการหยุดมีความสัมพันธ์กับหน้าที่ทางไวยากรณ์เป็นอย่างมาก และเนื่องจากการหยุดเว้นระยะอย่างถูกต้องจะช่วยพัฒนาการพูดของผู้เรียนให้ผู้ฟังเข้าใจได้ง่ายขึ้น การวิจัยนี้จึงมุ่งหวังที่จะเน้นให้เห็นถึงความสำคัญของการนำกิจกรรมการอ่านออกเสียงภาษาอังกฤษมาใช้ในการเรียนการสอนภาษาอังกฤษในชั้นเรียนอย่างสม่ำเสมอต่อไป

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## Abstract

Research suggests that pauses are essential in oral communication in that they render intelligibility and contribute to the improvement of speech comprehension. Unfortunately, the teaching of correct pausing has received little attention in EFL classes. As a result, many Thai learners of English tend to use inappropriate phrasing and pausing, which makes their speech sound unnatural or even hinders communication. This study investigated Thai learners' pause patterns in read speech in comparison with those produced by native English speakers. Participants included 30 undergraduate students, classified into the high- and low-proficiency groups based on their English proficiency test scores. Seven native English-speaking teachers represented NS controls. The participants read an Aesop fable and recorded their speech in a laboratory. Individual recordings were analyzed by means of auditory and acoustic analyses to identify pause locations and measure pause durations.

The results reveal that native speakers paused exclusively at sentence ends. Additional pauses were made at major syntactic boundaries. Inter-speaker variability existed at minor syntactic boundaries. Among Thai learners, the low group paused more frequently and produced shorter lengths of pause-defined units (PDU) than the high group, who read with longer and more syntactically and semantically unified PDUs. The high group also paused less, which gave the impression of faster and more fluent speech. The findings support previous studies that pausing is, to a large extent, affected by syntactic structures. Since correct use of pauses can make a marked improvement of intelligibility in speech production, the pedagogical implication offered from the findings is to support the importance of introducing read-aloud tasks in EFL classes.

# CHAPTER I

# INTRODUCTION

## 1.1 Background of the Study

Human speech communication consists of both sounds and silences. A speaker organizes his speech flow with a number of silent intervals of various lengths. Pauses can be viewed from the productive domain and the perceptive domain. Pauses in the productive domain refer to physical pauses produced by a speaker, which can be observed as a period of silence in the acoustic signal. Pauses viewed from the perceptive domain refer to pauses perceived by the hearer in connected speech, which may not really be the equivalent of physical pauses in the productive domain. This study focuses on the speaker's aspect or physical pauses in the productive domain only.

Physical pauses normally occur either in spontaneous or read speech in all languages. The functions of a physical pause differ in several respects. Firstly, pauses are constrained by physiological and cognitive factors. In speech production, pauses are necessary for the speech motor activity to be accomplished and for speakers to regain their breath. In addition, by using pauses, a speaker speaking spontaneously can also make time available for the cognitive processes of speech planning such as selecting lexical items, sorting out appropriate syntactic structures, and so on. Pauses caused by the natural breathing mechanism of a speaker is referred to as '*breath pauses*'. Secondly, pauses are used to serve linguistic functions. A speaker can use pauses to segment an utterance into smaller stretches on the basis of syntactic and

semantic factors, which aids the hearer in the task of understanding the speaker (Bila & Dzambova, 2009). Moreover, effective speakers use appropriate pauses to draw the hearer's attention to meaningful chunks of information they would like to convey (Bada, 2006).

Zvonik (2004) classifies pauses into grammatical pauses and non-grammatical pauses. Grammatical pauses are those separating grammatical constructs from each other on the basis of syntactic and semantic factors, which may to some degree relate to cognitive and physiological factors. Non-grammatical pauses are those not related to dividing sentences into grammatical units, such as hesitation pauses or conversational turn management in conversational speech. Several studies (e.g. Tedlock, 1983, as cited in Riazantseva, 2001) investigated the relation between breath pause and syntactic structures and reported that breath pauses seemed to satisfy both the physiological need and the linguistic need of the speaker at the same time.

Pauses can also be classified into the so-called '*silent*' and '*filled*' pauses. '*Silent*' pauses correspond to the perception of a silent portion in the speech signal; 'filled' pauses, on the other hand, are sounds like *um*, *ar*, *er*, etc. or other linguistic units that a speaker employs to fill gaps in speech, mostly to indicate uncertainty or to maintain control of a conversation while thinking of what to say next. Most filled pauses in a language such as English are drawls, repetitions of utterances, words, syllables, sounds, and false starts.

From the experience of the researcher teaching English courses to Thai undergraduate students in Thailand, the problems of the students' oral production are primarily occurring at the supra-segmental level (or prosody), which also includes the

use of *pause*. Many scholars (e.g. Anderson-Hsieh &Venkatagiri 1994; Zellner, 1994; Johnson & Moore, 1997; Van Loon, 2002) in applied linguistics have emphasized the importance of prosody in the intelligibility of speech. Research has shown that improvement in oral communication is greater when prosody is improved than when errors in consonant and vowel sounds are reduced. In a stress-timed language such as English, prosody is essential in that it directs the hearer's attention to the information that the speaker regards as important. Unfortunately, prosody, particularly the correct use of *pause*, has been given little attention in speaking and pronunciation classes in Thailand.

It has been observed that many Thai learners tend to use inappropriate phrasing and irregular pausing. Several empirical studies of pauses produced by non-native English speakers revealed that their pause patterns were different from those observed among native English speakers (Riazantseva, 2001; Bada, 2006; Bada & Genc, 2008). A more informed description of pause patterns between native English speakers and Thai learners is crucial for a better understanding of learners' semantic-syntactic competence, which influences pause location. Consequently, this study attempts to investigate the production of pauses exhibited in read speech of native English speakers and to compare their patterns with those of Thai learners at two English proficiency levels: *high* and *low*. The study is concerned with examining grammatical pauses or pauses that occur between grammatical units within an utterance, signaled by silent intervals in the speech stream. In other words, the focus of the study is on the production of silent pauses in relations to the groupings of words into syntactic units. Furthermore, this study also aims to highlight the importance of introducing read-aloud tasks in EFL classes in order to enhance the learner's ability to

recognize relationships between structural parts of a sentence and to read language using appropriate pausing.

The organization of this study is as follows. Chapter one discusses the background, research questions, objectives, hypotheses, key term definitions, scope of the study, and the significance of the study. In Chapter two, the literature relevant to the study of pause is reviewed. Chapter three explains the methodology of this research study, which includes the research instruments, the sample groups, data collection, and data analysis. In Chapter four, the quantitative and qualitative results of the study are presented and discussed. Chapter five provides the conclusions, implications and recommendations for future research.

**1.2 Research Questions**

The goal of the present study was to examine Thai learners' pause patterns in read speech in relation to syntactic structures of English sentences, and compare them to those produced by native English speakers. In so doing, the problems of Thai learners' inappropriate pausing can be identified. Therefore, this study sought to answer the following questions:

(1) What are the pause patterns in read speech of Thai learners with *high* and *low* English proficiency levels in comparison with those of native English speakers?

(2) To what extent do the pause patterns of native English speakers and Thai learners of *high* and *low* English proficiency levels exhibit similarities and differences?

(3) To what extent are the positions of pauses produced by the three sample groups related to syntactic structures of English?

## 1.3 Objective of the Study

The objectives of this study are threefold:

(1) To investigate the pause patterns in read speech of Thai learners of English in comparison with those of native English speakers;

(2) To compare the pause patterns in read speech produced by native English speakers and Thai learners of *high* and *low* English proficiency levels so that problems of Thai learners' inappropriate pausing can be identified;

(3) To examine the relations between pause positions and syntactic structures in English read speech of the three sample groups.

## 1.4 Statement of Hypotheses

To carry out the objectives of this study, the following hypotheses were formulated and tested.

(1) Pause patterns produced by Thai learners are different from those of native English speakers. However, the pause patterns of Thai learners with higher English proficiency are more similar to those produced by native English speakers in terms of number of pauses, size of pause-defined units (PDU), and pause locations.

(2) Thai learners of lower English proficiency pause more frequently and produce shorter size of PDUs than the more proficient learners, who read in longer, but more semantically- and semantically-unified units and therefore pause less.

(3) Pause locations produced by native English speakers display relations with syntactic structures in that the syntactic structure influences the likelihood that a pause may occur at the boundaries of syntactic constituents, with greater probability for major syntactic boundaries such as sentence and clause boundaries than for minor syntactic boundaries such as phrases. Participants in the high group produce pause patterns that are more syntactically related than those in the low group, who tend to pause at inappropriate pause sites because they may divide sentences into pause-defined units (PDU) that do not correlate English syntactic units.

## 1.5 Scope of the Study

The aim of the present study was to examine the developmental patterns in the use of pauses among Thai learners at different stages of interlanguage. The main purpose was to identify Thai learners' potential problems in phrasing and pausing in English read speech. Thus, the research was undertaken as follows.

(1) The data-gathering process was conducted in a cross-sectional design using two groups of Thai speakers of English at high and low proficiency levels. Pause patterns produced by these two groups were then compared with those of native English speakers. Research methodology will be discussed in Chapter 3.

(2) This study was limited to investigating only physical pauses in the production domain, signified by acoustic silence in the speech streams in the text read-aloud task produced by three groups of participants. The study did not consider the perceptual aspect of pauses (i.e. how pauses are perceived by listeners).

(3) The main focus of the present study was to explore the participants' pause patterns with regard to the relationship between pause placement and syntactic structure of sentences. Thus, the study concentrated only on the location, not the duration, of pause. The acoustic measurement of pause duration conducted in the study was merely to determine the threshold criterion for pausing, not for the purpose of data analysis.

## 1.6 Limitations of the Study

Although the present study aimed to provide a clearer picture of the ways in which Thai learners use pause in their interlanguage, it had the following limitations.

(1) The cross-sectional design of this study could be viewed as reflecting only one phase of the interlanguage development, which may limit one's ability to draw strong inferences about the learner's actual developmental process in using pauses in read speech.

(2) A criterion for the division of Thai learners into the high and low English proficiency levels may not provide a basis for replication by other researchers. However, viable alternatives to other resources were not available. Despite this limitation, care was taken to assess English proficiency of students classified into the two groups of high and low English abilities. The classification was based on their scores on DPU-TEP (DPU Test of English Proficiency) taken by 195 English Major students (80 seniors and 115 freshmen). Among these 195 students, 15 students with the highest scores and 15 students with the lowest scores were recruited to represent the high- and low-English proficiency groups in the study.

(3) The third limitation concerns generalizability of the findings. As the study focused on the performance of the read-aloud speech in two different English-ability groups with relative homogeneity in their EFL learning environment, the results may not be generalizable to students in other contexts. However, it is hoped that the findings will shed some lights into common errors in the pause patterns in speech read aloud among EFL learners, which may help teachers to develop a more informed method to teach their students to pause more appropriately further.

**1.7 Definitions of Key Terms**

For the purpose of the study, the key terms are defined as follows.

**1.7.1 Pause**

Pause is a perceptible stop and start in the speaker's speech production. There are two types of pause: physical and psychological (mental) pauses (Zellner, 1994). In the present study, only physical pauses were investigated. Physical pauses depend on linguistic contexts and can occur within sentences as well as at sentence boundaries. In written texts, punctuation is traditionally used to mark important pauses.

Pauses can also be classified as '*silent*' and '*filled*' pauses. '*Silent*' pauses correspond to the perception of a silent portion in the speech stream, whereas '*filled*' pauses (or pause fillers) refer to sounds that a speaker employs to fill gaps in speech to indicate uncertainty, hesitation or to maintain control of a conversation while thinking of what to say next. Filled pauses may be sounds such as *um*, *uh*, and *well*, repetitions of sounds, syllables, words, phrases, drawls and false starts. This study

aims to investigate only '*silent*' pauses in the read speech of native English speakers and Thai learners of English.

### 1.7.2 Prosody

Prosody refers to the tune or intonation of an utterance. Prosody can be a tool that speakers exploit in order to highlight the distinction that is to be conveyed to the hearer. Prosody is as important as the other means in human understanding of utterances as it aids to syntactic and semantic analysis of spoken English. Pitch and pause are among other prosodic features that are potentially useful in speech comprehension. Pauses often indicate prosodic sense groups which highlight the organization of the message.

### 1.7.3 Sense groups/Thought groups

A sense group (sometimes referred to as a *thought group*) refers to a meaningful unit of words that are grammatically and semantically related with each other (Crystal, 1997). The clue to identifying a sense group is the pause (or silence) that occurs before and after it. In principle, no pause appears within a sense group; in other words, a sense group is usually not to be interrupted within the group. The meaning of text is related to a reader's ability to group words into meaningful phrases (sense/thought groups), which aids language comprehension. Taylor (1981) argues that uneven, jerky rhythm results "from faulty division into sense groups" (p. 237). If sense group boundaries are marked inappropriately by non-native speakers (NNS), the result is difficulty on the part of the listener to follow the thread of speech (Wennerstrom, 1994).

Second language (L2) learners may have difficulty reading in the L2 because they may not know how to chunk properly. The speaker's ability to chunk the language so that it is more readily accessible to the hearer may have a parallel in one's ability to read language in chunks (i.e. sequences of words between boundaries) and process it more readily. Higher reading abilities tend to be dependent upon the abilities to process chunks effectively (Johnson & Moore, 1997). Learners who do not chunk well may not be able to read as well.

### 1.7.4 Pause-Defined Unit (PDU)

A pause-defined unit is a phonetic term used to refer to the hearer's division of speech from larger units to smaller ones, that is, from an utterance to sentences, clauses, phrases and words, based on the speaker's thought or the syntactic rules (Luksaneeyanawin, 1988). A pause-defined unit is thus a unit bounded by perceived pauses. Pause-defined units have been taken as boundary signals for constituents and they are claimed to be related to both syntax and semantics. The units are used for the analysis of pause patterns and the term will be used mainly in this study.

### 1.7.5 Constituents

A constituent refers to any word or construction that enters into some larger construction. Constituents may be words or phrases such as nouns, verbs and prepositional phrases, as well as to clauses and sentences which belong to specific syntactic categories and which cohere semantically. In linguistics, a system of grammatical analysis that divides sentences into successive layers, or constituents, is called *Immediate Constituent (IC) Analysis*.

### 1.7.6 Reading-aloud

The reading-aloud ability is defined as the ability to read aloud in correct sense groups, which implies the ability to correctly recognize boundaries between sense groups based on grammatical and semantic cues and reflect it on reading-aloud performance.

### 1.7.7 English as a Foreign Language

English as a foreign language refers to English language learning that takes place where English is neither the native language nor the official language of the society, and where learners have few opportunities to practice the target language outside the classroom. This situation is common in countries such as Thailand, Japan, or Korea, where learning English is usually confined to the classroom.

### 1.7.8 Interlanguage

Interlanguage is a language system created by second language learners in the process of learning and trying to reach the target language (Nemser, 1969). Learners' errors can be caused by a number of factors, one of which is the transfer of their native language onto the target language system (Selinker, 1972).

## 1.8 Significance of the Study

The present study is worth conducting because of the following reasons.

(1) There has been no study to date that investigates differences in pause patterns between native English speakers and Thai learners of English. In order for

teachers to correct learner errors in using pause, it is important to understand where native English speakers pause when they read aloud written texts.

(2) It has been suggested that many Thai learners use pauses improperly. The pedagogical implication of this present study is to support the teaching of read-aloud tasks in EFL classes. As asserted by Anderson-Hsieh & Venkatagiri (1994), appropriate use of pausing is learnable. Teachers should develop learners' awareness of the importance of using appropriate pauses, since the correct use of pause can make a marked improvement of intelligibility in speech production. It is, therefore, hoped that the findings will shed some lights into the teaching of proper models of pause patterns by integrating reading aloud as part of the EFL teaching/learning process.

## CHAPTER II

## LITERATURE REVIEW

This chapter reviews theories and research studies that are relevant to the present study. It consists of six sections as follows:

(1) Interlanguage

(2) The Classification of Pauses

(3) Major Characteristics of Pauses

(4) Pauses and Syntactic Structure

(5) Pauses and Read Speech

(6) Relevant Research Studies

## 2.1 Interlanguage

The term 'interlanguage' is defined as an '*approximative linguistic system*' that a second language (L2) learner uses in order to reach the target language (Nemser, 1969). It is a kind of language system created by learners in the process of learning a second language. When learners' L2 proficiency develops, their performance will be closer to that of the native speaker of the target language. James (1980: 4-5) presented the diagram to illustrate this concept as shown below:
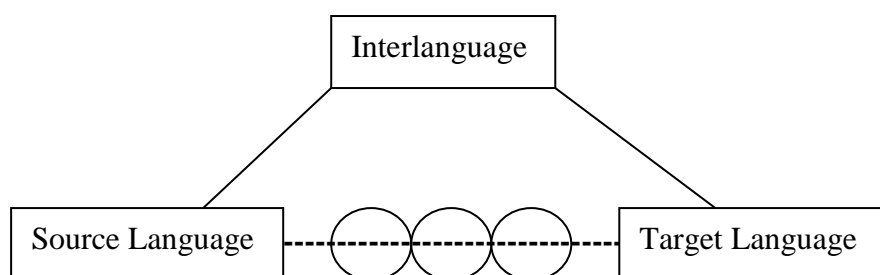


Figure 2.1: *Interlanguage System (James, 1980, 4-5)*

In the learner's developmental process, it is found that learners make errors at varying interlanguage stages. These errors are caused by a number of factors. Selinker (1972) claimed that there are five factors that may influence the learners' performance during their evolving interlanguage. Such factors are: transfer of the learner's first language (L1), transfer of training, strategy of second language learning, strategy of second language communication, and overgeneralization of the target language linguistic elements.

*First Language (L1) Transfer* refers to the phenomenon when there is a carry-over of items or patterns from the learner's first language (L1) to the second language (L2). As a matter of fact, the effects of L1 transfer can be both positive and negative. When a form in an L2 resembles a form in the learner's L1, the transfer is likely to yield a positive effect. On the contrary, when the patterns or systems of the two languages differ, learners tend to make errors that are mainly influenced by their first language (L1). This situation is referred to as negative transfer or L1 interference. Negative L1 transfer is often referred to as the major source of learners' errors when their L1 does not have this form. However, when errors appear, it does not always mean that the learners apply their first language rules. Rather, these errors may be caused by other factors such as the following.

*Transfer of training* refers to the situation where learners' errors are influenced by what they have learned in the second language classroom, and where the learners might have formed incorrect concepts of some problematic elements that they learned from their teachers.

*Strategy of second language learning* refers to the situation where the learners try to simplify complicated concept in a second language. For instance, a learner who is familiar with the verb "feel" in its *–ing* form may have a concept that this verb has to end with *–ing*. As a result, this learner tends to continually add *–ing* to this verb, as in the sentence "I'm feeling hungry."

*Strategy of second language communication* is the strategy that learners use when communicating in a second language. For example, the learner may refrain themselves from language difficulties by avoiding difficult vocabulary, structures or unfamiliar linguistic elements. This strategy is commonly referred to as '*avoidance strategy*'.

*Overgeneralization of the target language linguistic elements* is normally found when a learner tries to apply a rule that he or she has learned to every situation. For example, when learners have learned the rule of adding *–ed* to English verbs to indicate the past tense, they overgeneralize this rule to include irregular verbs. As a result, errors such as *goed*, *runned* and *swimmed* may appear at an early stage in the learners' interlanguage development.

In terms of pauses, the learners' patterns may be affected by one or more of the above factors, causing their performance to deviate from the native speaker norms. One of the causes is hypothesized to arise from the differences in the linguistic systems of the two languages, resulting in the negative transfer of the learners' L1 when performing L2 English. Such differences include prosodic patterns, syntactic and graphetic systems. Prosodic patterns of English differ from those of Thai because Thai is spoken with each syllable being pronounced almost equally with regard to

prominence and loudness. Thai is, thus, classified as a syllable-timed language. English, on the other hand, is a stress-timed language; only stressed syllables in connected speech create beats or stress pulses which follow each other at roughly equal intervals of time. When reading an English text, Thai learners, particularly those at an early interlanguage stage, are inclined to pronounce each syllable in English with no perceptibly distinguishable pitch and pause.

Further, the difference in the graphetic (writing) systems of the two languages may also account for variability in Thai learners' pause patterns when reading aloud in English. In the Thai writing system, words are normally written continuously with no space between words. A space only exists between sentences, clauses, or thought groups and it signals a pause in speech. In English, on the other hand, a space exists between words in written texts. Thus, when reading aloud in English many Thai learners tend to make short pauses between words.

Space in Thai writing relates to a large extent to syntactic organization of the language. An example can be seen in Wongchompoo's (2013) study of pausing patterns in the '*that-noun clause*' structure in English. He reported that while native English speakers paused longer before '*that*', the reverse pattern was found among Thai learners in his study. Wongchompoo demonstrated that the noun clause complementizer '*that*' is translated into '*waa*' in Thai. However, the syntactic function of '*waa*' is different from '*that*' in English. In Thai grammar, '*waa*' functions as a particle attached to a verb in a Thai serial verb construction and cannot be separated from the verb by a pause. Accordingly, when speaking or reading a sentence with the '*waa*' noun clause, Thai speakers do not pause before '*waa*'; instead a pause normally appears after it. The occurrence of pause following the word '*waa*'

corresponds to the existence of a space when this type of sentence is written in Thai. From the findings, Wongchompoo concluded that the Thai syntactic and graphetic systems of using '*waa*' may have caused Thai learners to pause differently from the native English speaker norm.

## 2.2 The Classification of Pauses

According to Zellner (1994), pauses are classified into two main types: (1) a *physical and linguistic* pause, and (2) a *psychological and psycholinguistic* pause.

A *physical pause* refers to an interruption in the normal speech flow by a brief silence which can be observed in the acoustic signal as a segment with no significant amplitude. The location and duration of a physical pause depends on a number of factors such as physiological constraint (e.g. for breathing), cognitive factors (e.g. the need to provide time for the planning of new material) as well as linguistic function (e.g. to mark grammatical boundaries).

A *psycholinguistic pause* refers to a pause perceived by the hearer in connected speech, which may not really be the equivalence of a physical pause. Zellner (1994) asserts that pauses can be more easily perceived if their duration is around 200 – 250 milliseconds (ms), which appears to be the standard auditory threshold for the perception of pauses (Grosjean, 1991).

A distinction has also been drawn between *silent pauses* and *filled pauses*. *Silent pauses* correspond to the perception of a silent portion in the speech signal, whereas *filled pauses* correspond to sounds a speaker employs to fill gaps in the speech flow. Filled pauses are found mostly in spontaneous speech. This type of pause include sounds such as *ah, er, um*, drawls, repetitions of sounds, syllables,

words, phrases, and false starts (Grosjean & Deschamps, 1975, as cited in Zellner, 1994). In some studies, filled pauses are grouped with other non-linguistic elements such as laughter and coughing. In other cases, they are grouped with coordinating conjunctions and discourse markers and are referred to as '*fillers*'. Normally, both silent and filled pauses appear *between* words. They are called *inter-lexical* pauses.

## 2.3 Major Characteristics of Pauses

### 2.3.1 Physiological Function of Pauses

Speech production, like other human activities, cannot be performed continuously. Interruptions are necessary so that other successive stages of the speech motor activity can be accomplished. The speech motor behavior has been said to be subjected to individual physiological constraints. Speech sounds in almost all languages are made as the air is expelled from the body while breathing out, referred to as '*egressive pulmonic airstream*'. Once a speaker starts to speak, the amount of air in the lungs reduces to the extent that a pause is required for the speaker to breathe in more air into the lungs. The frequency and duration of pauses depend to a great extent on the respiratory capacity and articulation rate of a particular speaker. A speaker with good respiratory capacity and fast articulation usually produce fewer pauses than a speaker with weak respiratory and slow articulatory rate.

There are many studies (e.g. Grosjean & Collins, 1979, as cited in Zvonik, 2004) that investigate the relationship and interaction between the so-called *breath pauses* (i.e. pauses caused by the natural breathing rhythm of each individual speaker occurring during the inhalation phase of respiration) and the location of major linguistic boundaries. The findings from Grosjean & Collins (1979, as cited in

Zvonik, 2004) suggest that the frequency and duration of breath pauses is correlated with the "syntactic nature of pause location" (p.111). In their study, breath pauses occur mostly at major linguistic breaks and are found to be longer than non-breath pauses. The more important a syntactic boundary is, the longer the pause will be. Non-breath pauses appear at minor linguistic break and are reported to be shorter than breath pauses. Zellner (1994) noted that the location and duration of breath pauses also depends on speaking rate, but the speaker often balances the need to breathe with speaking rate and pausing patterns. For example, as the speaking rate increases, both breath and non-breath pauses are reported to become shorter and occur less frequently than when speaking with a slower rate.

As can be seen, the physiological aspects of pauses are quite complicated and are subjected to individual differences. Although some conclusions can be drawn regarding the relationship between linguistic breaks (sometimes referred to as *grammatical pauses* or *juncture pauses*) and physiological factors (e.g. the need to breathe, speaking rate, respiratory patterns), many questions still remain unanswered. For example, whether breath pauses depend mainly on syntax, what type of clause boundary is preferred by the speaker when inserting a breath pause, how sentence planning is combined with the speaker's respiratory pattern, and so on.

### 2.3.2 Linguistic Functions of Pauses

According to Abercrombie (1968, as cited in Luksaneeyanawin, 1988), pauses perform 5 linguistic functions; (1) syntactic function, (2) emphatic function, (3) terminal function, (4) tentative/pseudotentative function, and (5) rhetoric function. Pauses performing the *syntactic function* are those that separate grammatical units

from each other on the basis of syntactic structures of sentences. *Emphatic pauses* are those that create effects and are emphatic or expressive elements in a discourse. Pauses can be used to serve the *terminal function*, that is, a pause used by the speaker to signal an end to an utterance. A *tentative* or *pseudotentative function* of pause refers to the use of pause to indicate the speaker's uncertainty, doubt, or hesitation. This type of pause may be perceived either as a 'silent' pause or as 'filler' in speech stream. Finally, pauses contribute to create rhythmic and *rhetoric effect*. A pause can be used to mark a word or phrase rhetorically to create discourse prosody along with intonations and stresses.

As this study focuses on the syntactic function of pause, in the next section pauses as related to syntactic structures will be discussed.

## 2.4 Pauses and Syntactic Structure

One of the basic themes in studying pause patterns in speech has been the relationship between pauses and syntactic structure. Grosjean et al (1979) asserted that pause occurrence and duration are strongly correlated with the degree of cohesion between words in the utterance. Multiple studies (e.g. Wu, 2003; Zvonik, 2004; Strangert, 2004) have also demonstrated a correlation between pause patterns and syntactic structure. The results of those studies show that pause location tends to occur at major syntactic boundaries. Gustafson-Čapkova and Megyesi (2001, 2002) found that in non-professional readings speakers tended to locate pauses at sentence and clause boundaries and in front of conjunctions.

Grosjean et al (1979), in their analyses of pausing patterns between all structural constituents, found that the surface structure of a sentence could be a good

predictor of pause patterns. The results of Grosjean et al. suggested that the complexity and the length of a syntactic constituent affected pause placement. When reading, speakers tended to balance the need to respect syntactic boundaries and, at the same time, the need to break sentences into groups of words of more or less equal length. In terms of pause duration, the strength of syntactic boundary is found to affect the length of a pause, i.e. pauses tend to be longer at strong boundaries than at weak boundaries. This is in line with Strangert's (2004) findings which suggested that pause behavior might indicate a possible link to syntax and that pause duration was affected to a greater extent by the strength of a syntactic constituent rather than by its length.

Contrary to Strangert's (2004) findings, Terken and Collier (1992, as cited in Zvonik, 2004), investigating pause duration at the NP-VP boundary, reported that the length of a pause increased with the syntactic complexity as well as the length of the preceding NP and the following VP. Moreover, the effect of both factors was additive.

In an attempt to investigate the relationship between syntactic structure and *breath pause*, Grosjean & Collins (1979, as cited in Zvonik, 2004) found the correlation between the two variables, suggesting that breathing was not the primary determinant control of pausing. Their findings suggested that breath pauses occurred mostly at major syntactic breaks—the more important a syntactic boundary was, the longer the pause. Non-breath pauses, on the other hand, appeared primarily at minor constituent breaks and were reported to be shorter than breath pauses. Tedlock's (1983, as cited in Riazantseva, 2001) stated that breath pauses seemed to satisfy both the physiological need (i.e. breathing) and the linguistic need of the speaker at the same time.

As demonstrated above, one can see that the syntactic structure plays an important role in boundary placement and pause location. Results of numerous studies suggest that in second language learning, knowledge of constituent grammar or the ability to recognize relationships between structural parts of a sentence could play a crucial part in the ability to read in appropriate pause-defined units. This study was motivated by this proposition. Accordingly, the analysis of the present paper was restricted to consideration of the relationship between pause placements and syntactic structures of sentences in the read speech of Thai EFL learners at two English proficiency levels in contrast with the performance of native English speakers.

## 2.5 Pauses and Read Speech

As was discussed earlier, the occurrence of pauses is constrained by numerous factors. Pause is influenced by physiological constraints of each individual speaker, such as articulation rate and respiratory capacity. Linguistic factors, such as syntactic structure, boundary strength, and phrase length, have been reported to affect pause occurrence and duration. Additionally, several studies (e.g. Gustafson-Čapkova & Megyesi, 2001; Zvonik, 2004; Strangert, 2004) report that pause patterns also vary by speaking tasks and different genres of spoken language; for example, whether the utterance is spoken spontaneously or read. Conversational speech, which is spontaneous in nature, differs in many respects from speech elicited under the constraint of reading a text aloud. According to Goldman-Eisler (1972), spontaneous speech is much more conducive to pauses of cognitive origin than is read speech. In speaking spontaneously, speech generally races ahead of cognitive activity; therefore, pauses are necessary in spontaneous speech in that they are used to reflect additional time needed for the cognitive planning process to catch up with such speech (ibid).

The planning decisions that a speaker is normally confronted with concern such activities as deciding on a topic, selecting ways to present his topic, sorting out appropriate syntactic structures, managing turn-taking, selecting lexical items, and so on. Such planning decisions as well as lexical search result in hesitations, restarts and repetitions, which affect drastically on how boundaries and pauses are realized. It should be noted that variables related to cognitive constraints tend to vary depending on each individual speaker. As a result, many speakers may produce non-fluent speech with more frequent pauses than others.

Krivokapi (2008) argued that factors determining pause patterns in read-aloud speech, which is often termed as *read speech*, are fewer and can be more easily controlled than variables affecting pauses in spontaneous speech. The reader performing a read-aloud task is not confronted by most of the planning decisions that a speaker speaking spontaneously is confronted with. Thus, cognitive factors and information load (which involves the time required for the retrieval of words from the speaker's memory) in read speech are likely to be minimal when compared with a higher demand for speech processing spontaneously. Because a speaker is given a prepared text in advance, the read-aloud task allows for control over the content of the whole utterance and the predictability of sense groups; i.e. the groups of words that are grammatically and semantically related with each other (Crystal, 1997). Correct pausing in read speech should therefore be much more well-defined than in spontaneous speech.

Findings from many studies suggest that pauses in read speech are affected to a large extent by syntactic structures. Krivokapi (2008) found that these pauses mainly coincide with syntactic boundaries (i.e. sentence, clause and phrase

boundaries). These results are in accord with earlier research (e.g. Goldman-Eisler, 1972) stating that pauses in read speech occur mainly at grammatical junctures, whereas in spoken speech pauses can be present elsewhere in the utterance.

Given that pauses in read speech are mainly influenced by syntactic structures, the variable involved in performing a read-aloud task from a prepared text would be limited to a division of sentences into syntactic units and the assignment of pauses between those units. Other uncontrollable variables causing inter-speaker variability in pause patterns should be reduced to a minimum. This study, therefore, sought to examine pauses in read speech in relation to syntactic structures of sentences.

In order to understand how language is processed when a reader is performing the read-aloud task, refer to Figure 2.2 below.
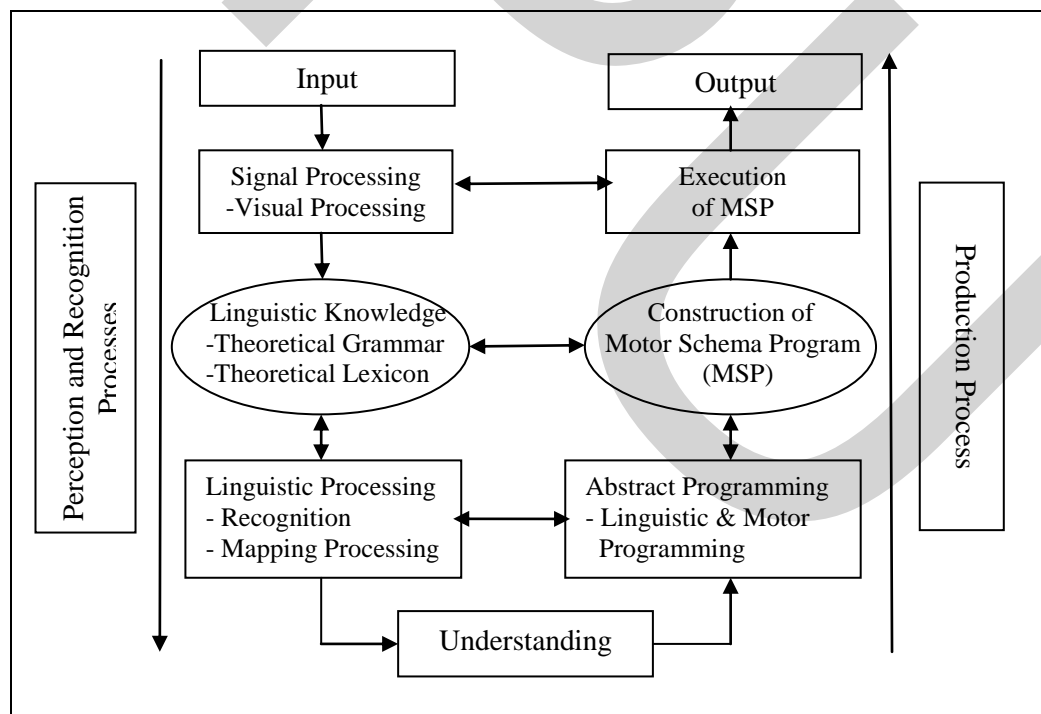
Figure 2.2: *The Perception and Production Processes in the Read-Aloud Task*
*(Adapted from Luksaneeyanawin, 2007)*

As demonstrated in the above figure, one can imagine that language processing when performing a read-aloud task involves both the perception and the production processes. Once new linguistic information (i.e. what was written in the text) is received, the reader starts processing the first chunk of information in the perceptive domain. The short term memory will match the received information with linguistic knowledge (i.e. theoretical grammar and theoretical lexicon) stored in the long term memory in order to understand the message. The reader then starts the linguistic and motor programming in the productive domain to create the output. Through construction and execution of the Motor Schema Program (MSP), the reader reads the first chunk of processed information out loud. To get new information from the text, the reader starts reading again and processing the next chunk of information. The reader repeats the same process until the whole text is read out.

It has been claimed that learners' ability to process information in a second language (L2) depends to a large extent on different amount of knowledge about the second language stored in their long term memory. In the read-aloud task, utilizing short term memory (STM) is also necessary for learners to recognize what was written in the text during the time learners scan their eyes to perceive information. Then, STM will interact with long term memory (LTM) in order to retrieve linguistic knowledge and match information from the two sources. Accordingly, it may be questioned whether learners with different levels of second language proficiency also process language in STM differently. It is assumed, in this study, that the explicit evidence of the processed information could be measured in terms of the number of pauses as well as the size of pause-defined units (PDU) that learners produce in reading the text aloud. The size of PDU (or the number of words per pause) is

assumed to indicate the number of words a learner can process in STM at a time. It is hypothesized that lower-level proficiency learners will produce smaller chunks of PDU than those with higher English proficiency and thus make a higher number of pauses. Moreover, with less syntactic knowledge, the division of words into PDUs among learners with lower proficiency may not rely on syntactic structures of English.

## 2.6 Relevant Research Studies

Several research studies have been conducted to investigate pause patterns of second language learners. For example, Rianzantseva (2001) examined the relationship between second language (L2) proficiency and pause patterns (i.e. pause duration, frequency, and distribution) in the speech of 30 Russians speakers of English, classified into high and intermediate English proficiency groups. The participants performed two oral tasks—a topic narrative and a cartoon description—in Russian and English. Baseline data was collected from a control group of 20 native English speakers. The results indicated that English and Russian monologue speech can be characterized as having different pause-duration patterns. When speaking their first language (L1), native speakers of Russian paused for longer durations than did native speakers of English. However, when speaking L2 English, the Russian participants with high English proficiency produced pauses of the same duration as the native speakers of English, whereas the Russian participants with intermediate English proficiency made considerably longer pauses. This suggests that the Russian speakers with high English proficiency made pauses of shorter duration (i.e. more native-like pauses) in L2 English than they did in their L1 Russian, which implies that L2 proficiency tended to affect the pause duration of advanced nonnative speakers in that they were able to adjust their pause duration in English to fit the conventions of

the target language. The Russian participants with intermediate English proficiency, on the contrary, tended to maintain the same pause length when speaking the two languages and thus produced pauses of significantly longer than those of the Russian speakers with high English proficiency when speaking English.

With regard to the number of pauses, the findings led to a tentative conclusion that Russian speakers and English speakers made the same number of pauses when they spoke their native languages. However, when speaking in English, the level of L2 proficiency could affect this variable to a certain extent. In a task that allowed more freedom of lexical and grammatical choice, the Russian participants with high English proficiency made the same number of pauses as did the native English speakers, whereas Russian participants with intermediate English proficiency made considerably more pauses than did the native English speakers. In a more highly structured task, on the other hand, even the Russian participants of high English proficiency paused significantly more often than did the native English speakers. This suggests that the number of pauses tended to increase in relation to a higher demand for more complex structures and vocabulary. In terms of pause placement, it was found that when speaking L2 English, Russian speakers placed more within-constituent pauses, independent of their level of English proficiency, than when they spoke their L1 Russian. However, their performance was still within the native norm for the English language.

In the literature, multiple studies have been conducted to examine the size (or duration) of a pause between words or phrases in native speakers' speech. Other studies have attempted to investigate the likelihood of producing a pause (or pause placement) between words or phrases. One of the basic themes has been to study the

influence of syntactic structure and semantic coherence on pause location and duration at hierarchical levels of syntactic boundaries.

Wu (2003) investigated the relations between syntactic structure and pause placement in speech of 120 isolated declarative sentences read by a male speaker. The findings suggest that there is a close relation between the placement of pause and the types of syntactic structure. Most pauses occur between the subject and predicate in the subject-predicate (SP) structure, between the adverbial modifier and the head in adverbial-head (AH) structure and between the verb and the object in verb-object (VO) structure. Wu also found that pause participated directly in differentiating the syntactic levels in sentences, i.e. the more complex the structure, the higher the frequency of pause occurrence.

Strangert (1997) investigated how pause behavior depends on syntactic structure. She found that pause duration tended to be influenced by the complexity of noun phrases (NPs) and verb phrases (VPs) in a sentence. As NP complexity increased, pause duration increased accordingly. In addition, the length of the words immediately preceding the boundary had significant influence on pause duration, i.e. the length of a pause tended to increase when longer words preceded the boundary.

In examining pause patterns among Thai learners of English, Wongchompoo (2013) investigated pause preceding and following '*that*' in '*that-noun clauses*' and found that all 5 native English participants produced significantly longer pauses at the preceding position in all 10 target sentences. The results of the 50 Thai learners were quite the opposite. Thai learners paused significantly longer after the complementizer '*that*' in 9 sentences. The reverse pattern was observed in 1 sentence, but with no

statistical significance. Wongchompoo asserted that the pattern performed by Thai learners, which deviated from the native English speaker norm, could be due to L1 transfer as a result of the difference in the syntactic systems between the two languages. The Thai word '*waa*' is used as an equivalent to '*that*' in English. However, '*waa*' does not function as a noun clause complementizer in the same way '*that*' does in English. In Thai grammar, '*waa*' is claimed to function as a particle attached to a verb in a Thai serial verb construction and cannot be separated from the verb by a pause. Verbs that are normally attached by '*waa*' when preceding a noun clause include verbs of utterance such as *say, state, argue, announce*, and mental verbs such as *think, know, wonder, understand*. When Thai speakers say a sentence with the-'*waa*' noun clause, a pause will appear after the particle '*waa*', and not within the serial verb construction.

The main conclusion to be drawn from these studies is that although syntax may not be the only factor that determines pause patterns, researchers have proven that it has a great impact on pause placement and duration. The present study was motivated by the findings from the above-mentioned research work. It thus sought to investigate the pause patterns in read speech of Thai EFL learners in comparison with those of native English speakers. In addition, it also aimed to examine the relations between pause patterns and syntactic structures of sentences in the prepared text. In light of these objectives, the number of PDU, size of PDU and characteristics of PDU will be analyzed both quantitatively and qualitatively.

# CHAPTER III

# RESEARCH METHODOLOGY

This chapter introduces the research design and methodology. It consists of five sections:

(1) The Sample Groups

(2) Research Instruments

(3) Syntactic Analysis of the Instrument

(4) Data Collection

(5) Data Analysis

## 3.1 The Sample Groups

The study utilized 3 sample groups. Participants in 2 non-native speaker (NNS) groups consisted of thirty Thai undergraduate students in the English Major Program at Dhurakij Pundit University (DPU), which is a private Thai university located in Bangkok, Thailand. These students were selected and divided into two English proficiency groups, *high* and *low*, based on their relative English proficiency, with 15 students placed in each group, referred to as non-native speaker-high (NNS-H) and non-native speaker-low (NNS-L), respectively. The classification was based on their scores on an in-house test of English proficiency referred to as Dhurakij Pundit University Test of English Proficiency (DPU-TEP). The decision to use the in-house proficiency test was due to the fact that it was the most convenient method and that viable alternatives to other resources were not available. Although it cannot be

claimed that the DPU-TEP is a standardized test, the reliability of this instrument has been reported at the Cronbach's alpha of .901. This should serve well for the purpose of this present study. In the classification process, 80 fourth-year English major students and 115 first-year English major students, totaling 195, took the test simultaneously. With the total score of 100, scores obtained by the students were ranked from the highest to the lowest following the test. Fifteen students with the highest scores and 15 students with the lowest scores were selected to participate in the study. Scores of the 15 participants in the high group ranged from 74 to 88, whereas scores of the 15 low-group students ranged from 30 to 38. The high proficiency group included 5 males and 10 females, ages ranging from 21 – 26. These students had the minimum of 10 years up to the maximum of 18 years of formal English instruction. The low proficiency group comprised 3 males and 12 females, ages ranging from 17 to 22. Their length of formal English instruction ranged from 6 to 13 years.

The third group consisted of 7 native English speakers representing native speaker (NS) controls. All of them were English instructors at the university level in Thailand, 2 from the International College of Dhurakij Pundit University, 4 from the English Department of Dhurakij Pundit University, and 1 from the Language Institute of Thammasat University. All of them were male.

Prior to the experiment, all participants in this study were not informed of the objectives of the study.

**3.2 Research Instruments**

The present study utilized two instruments for data collection:

(1) An Aesop fable, *The North Wind and The Sun*, a U.S. version, transcribed by Dr. Lucinda Hart-Gonzalez and adapted for the purpose of the experiment;

(2) The PRAAT sound analyzing software, version 5.1.15.

The first instrument was used for the read-aloud task. The text contained 119 words, which included 1 title phrase and 5 sentences divided into 3 paragraphs. The selection of the Aesop fable, *The North Wind and The Sun*, was based on two requirements: first, the vocabulary and content were at an appropriate level for learners of low English proficiency to be able to read without much difficulty; and second, the sentences in the text contain various types of structure (i.e. compound and complex sentences with independent and dependent clauses).

The second instrument, the *PRAAT program version 5.1.15*, is a free software computer program for acoustic analysis of speech sound. It was designed and developed in 1995 by Paul Boersma and David Weenink of the University of Amsterdam. In this study, the PRAAT program was utilized to detect pause location and measure pause duration in individual recordings of the three sample groups.

**3.3 Syntactic Analysis of the Text**

To predict potential pause locations, the text was analyzed by means of *Immediate Constituent (IC) Analysis* and *Phrase Structure Rules* by two experts who earned doctoral degrees in linguistics, and the researcher. Sentence, clause and phrase boundaries were determined to predict potential pause locations. Predicted boundaries were also ranked for boundary strength as extra-strong, strong, and weak boundaries. Previous pause research (e.g. Ferreira, 1991) suggests that the strongest

syntactic boundary should be the most likely pause site for speakers. The more deeply embedded boundaries are regarded as weak and are less likely for pause sites. At the discourse level, the strongest boundaries include inter-sentential boundaries, defined by punctuation such as a full-stop and a semicolon (Zvonik, 2004). Cases of 'a sentence within a sentence' are also considered strong boundaries (ibid). Weak boundaries include most intra-sentential boundaries at lower-level constituents such as those between phrases. It should be noted that boundaries between phrases that contain a small number of words are, in most cases, less likely pause sites. Examples are those at the subject-predicate juncture, especially when the subject is a pronoun or a simple noun phrase. According to the findings of Wu (2003), the likelihood of a pause at the S-P juncture increases when the subject becomes more complex.

Following the syntactic analysis, the text was marked with double slashes (//) between words at strong boundaries and a single slash (/) between words at weak boundaries. The assumed boundary strength was ranked by the number 3, 2, or 1 at each pause location, representing the boundary strength. Sentence boundary was assigned a strength value of 3 for extra-strong boundary; clause boundary was ranked by the number 2 for strong boundary; and phrase boundary was ranked by 1 to represent a weak boundary. It should be noted that weak boundaries are regarded as potential pause sites, but they may be optional depending on inter-speaker variability in rhetoric and stylistic preferences as mentioned in the linguistic functions of pauses in Section 2.3.2.

Table 3.1 below illustrates the text with predicted pause sites marked with boundary strengths.

Table 3.1: *Potential Pauses at Strong and Weak Boundaries*

```
                        The North Wind / and The Sun //
                                       1              3

        One day,/ the North Wind and the Sun / were arguing / about which of them was
             1                   1                    1

stronger, // when a traveler came along / wrapped up in an overcoat. // They agreed //
     2                   1                        3                  2

that the one / who could make the traveler take his coat off // would be considered / stronger
        1                                              2                         1

than the other one. //
           3

        Then / the North Wind / blew as hard as he could, // but the harder he blew, //
          1           1                    2                          2

the tighter / the traveler wrapped his coat around him; // and at last / the North Wind  /
      1                                              3          1              1

gave up trying. //
        3

        Then / the Sun began to shine hot, // and right away / the traveler took his coat off. //
          1                    2                  1                                      3

And so / the North Wind / had to admit // that the Sun was stronger / than he was. //
   1            1              2                       1                   3
```

Table 3 above shows 31 locations predetermined for potential pauses. There are 6 locations at sentence boundaries marked with number 3 representing extra-strong boundaries. These locations are predicted to be the most likely pause sites for speakers. Eight locations at major clause junctures are marked with number 2 to represent strong boundaries. These locations are also likely pause sites. The remaining 17 locations ranked by 1 are regarded as weak boundaries between phrases. They are potential, but optional, pause sites.

## 3.4 Data Collection

The data gathering process was conducted in two phases.

(1) In the first phase, the NS participants were asked to record their read-aloud speech in a laboratory. Prior to the start of the recording, the participants were given a copy of the text and were instructed to individually read the text silently with no time constraint. The purpose was to allow them to familiarize themselves with the text so as to keep information load to the minimum. After the familiarization period, the participants started recording their speech read-aloud at normal speaking rate.

(2) The second phase of data collection was conducted with Thai learners recruited under the process as described in Section 3.1. The high English proficiency (NNS-H) group and the low English proficiency (NNS-L) group recorded their read-aloud speech in the laboratory in two separate occasions. The process was identical to the first phase of data collection mentioned above. Although there was no time limit for the participants to complete the task, the average time utilized by the participants was 12 minutes.

## 3.5 Data Analysis

The study focused on the number of pause-defined units (PDU), size of PDU and characteristics of PDU in English read speech on the basis of syntactic aspects of information chunking. The analysis was conducted in the following stages:

### 3.5.1 Identification of Pause Locations

(1) To identify pauses placement of the participants, the researcher and two other listeners, who were graduate students in the field of English, listened

to each recording and marked the symbol (/) on a copy of printed transcript where they heard a pause.

(2) To support the preliminary auditory analysis mentioned in (1), the PRAAT sound analyzing software, version 5.1.15, was used for acoustic analysis to automatically detect pause locations and measure the duration of all the pauses. The data sets obtained from the auditory analysis by the three listeners were compared with pause locations and duration obtained from the PRAAT acoustic analysis. At the locations where inconsistencies existed among the three listeners in the auditory analysis performed in stage 1, the PRAAT program was conducted manually to verify the results and obtain consistency.

Figure 3.1 below shows silent intervals illustrated by the PRAAT acoustic analysis.

Figure 3.1: *Silent Interval displayed by the PRAAT program*
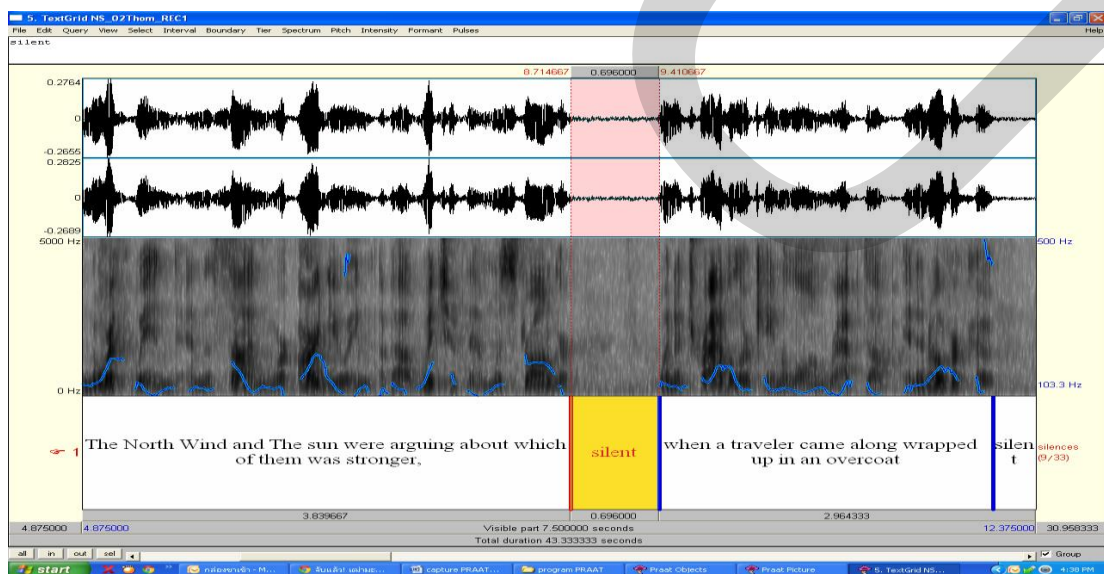
It should be noted that the standard criterion of pause duration to be set as a threshold for acoustic analysis varies among scholars. Goldman-Eisler (1968), for example, considered a pause of 250 milliseconds (ms) as the standard criterion because she claimed that a pause of less than 250 ms was regarded as a necessary factor in articulation. Campione & Veronis (2002) classified silent pauses into three categories, namely brief (< 200 ms), medium (200 – 1000 ms), and long (> 1000 ms). According to Compione & Veronis, it was difficult to discriminate silences of less than about 200 ms from the effect of plosive consonants and final lengthening and it would take huge manual effort.

From the preliminary auditory analysis performed by the three listeners as mentioned above, the decision was made for pauses of 200 ms or greater to be considered the threshold for data analysis in this study.  As suggested by Campione & Veronis (2002), although short pauses of less than 200 ms do exist and they may have their structural role, it is necessary to cut them off by applying the threshold of 200 ms or longer as acoustic correlate for pausing. Therefore, in the present study, silent intervals of less than 200 ms were excluded from consideration.

### 3.5.2 Statistical Analysis

The quantitative analyses focused on the investigation of the number of pause-defined units and size of PDU produced by the 3 sample groups. The number of PDU was calculated by counting pauses of 200 ms or greater per participant. The size of PDU (or the number of words per PDU) was calculated as the proportion of words in total divided by the number of PDU per participant. The analyses were conducted using the following statistics.

(1) percentage

(2) mean scores

(3) standard deviation

(4) one-way ANOVA

(5) post hoc pairwise scheffe's method

### 3.5.3 Qualitative Analysis

Following the statistical analyses, qualitative analysis was conducted to examine characteristics of pause-defined units in terms of relations between pause positions and syntactic structures.

# CHAPTER IV

# RESULTS

The results of the analyses in this study are both quantitative and qualitative in nature. The aim of the quantitative analyses was to test the hypothesis that Thai learners pause differently from native English speakers. Such differences are assumed to be evidenced by examining the number of pauses and the number of words per pause (size of PDU) produced by participants in the three sample groups. With regard to the relations between pause positions and syntactic structures, the results will be presented and discussed qualitatively.

The organization of the present chapter is as follows. First, the number of pauses of the three groups will be compared using descriptive statistics, one-way ANOVA and the Scheffe's method. Second, the same analyses are conducted to demonstrate the size of PDU across the groups. Finally, the positions of pauses of the 3 groups will be compared and discussed qualitatively in order to illustrate the extent to which the participants' PDUs correlate of English syntactic structures.

## 4.1 Number of Pause-Defined Units (PDU)

To obtain the number of PDU per participant, pauses of equal or longer than 200 ms in each recording were identified by means of auditory and acoustic analyses as described in Section 3.5.1 of Chapter 3. Then all chunks between pauses, termed as '*pause-defined units*' (PDU) in Luksaneeyanawin (1988), were counted per participant and calculated for mean values and standard deviation, using descriptive statistics. Table 4.1 shows the number of PDU of the 3 sample groups and Table 4.2

displays with the minimum, maximum, mean values and standard deviation of PDU by group.

Table 4.1: *Number of PDU by Participant*

| Participant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NS (n=7) | 14 | 16 | 16 | 23 | 16 | 20 | 16 | | | | | | | | |
| NNS-H (n=15) | 24 | 25 | 24 | 19 | 24 | 21 | 22 | 27 | 22 | 16 | 19 | 32 | 23 | 22 | 27 |
| NNS-L (n=15) | 31 | 34 | 37 | 26 | 19 | 47 | 32 | 37 | 19 | 26 | 38 | 19 | 33 | 42 | 20 |

Table 4.2: *Minimum, Maximum and Mean Values of PDU Number by Group*

| Group | Min PDUs | Max PDUs | $\overline{x}$ | Std. | Sig. |
|---|---|---|---|---|---|
| NS (n=7) | 14 | 23 | 17.29 | 3.094 | .000* |
| NNS-H (n=15) | 16 | 32 | 23.13 | 3.852 | |
| NNS-L (n=15) | 19 | 47 | 30.67 | 8.918 | |

It can be observed, from Table 4.1 above, that the number of PDU varied among all participants. Statistical analyses displayed in Table 4.2 reveal that variability in the minimum number of PDUs among the 3 sample groups (i.e. NS < NNS-H < NNS-L = 14 < 16 < 19) was not as high as variability in the maximum values (i.e. NS < NNS-H < NNS-L = 23 < 32 < 47). A major observation is that of a substantial difference in the maximum PDU between the NS group and the NNS-L group. The maximum number of pauses in the low group was 47, which was twice as many as that performed by native English speakers (i.e. 23). The maximum PDU produced by the high group was placed in between those two polarities (i.e. 32). In terms of mean values among the 3 groups, one may observe that the values were in linear order in relation to proficiency levels. The value is lowest in the NS group and

highest in the low-proficiency group, with the value of the high-proficiency group placed in the middle. The data indicate that the native speakers divided the 119-word text into 17.29 PDUs on average, whereas Thai learners with high proficiency produced 23.13 PDUs on average, and the low-proficiency group read the text with an average of 30.67 PDUs. This means that, between the 2 Thai learner groups, those with a lower level of English proficiency paused more frequently than learners with higher English proficiency. In addition, a broader range of PDUs and the higher standard deviation in the low group suggest that the performance of the low-proficiency learners varied more substantially.

It should be noted that a sizable range in the number of PDUs also existed within the native speaker group (i.e. ranging from 14 to 23). In addition, one can observe that there was an overlap of PDU numbers across the groups. That is, the highest number of PDU in the NS group was higher than the lowest number in the high group (i.e. 23 > 16), which suggests that some native speakers may have paused more frequently than some learners in the high group due to stylistic preferences. From the interview with the NS who paused most frequently following the recording, he reasoned that he habitually paused frequently to aid comprehension and create expressive meanings when reading stories to his kids. Likewise, the highest number of PDU in the high group was also higher than the lowest number in the low group (i.e. 32 > 19). This also indicates inter-speaker variability within and across the groups.

One-way ANOVA was conducted to test significant differences in the mean values of the 3 sample groups, and the Scheffe's post hoc pairwise comparisons were used to further investigate the difference between groups. Statistical testing results showed that the number of PDU between the NS group and the low group as well as

between the two groups of Thai learners differed significantly. The difference between the NS group and the high group was not statistically significant at the alpha .05 level, as shown in Table 4.3.

Table 4.3: *Comparisons of the Mean Values of PDU Number across Groups*

| Group | Mean Diff | Std. | Sig. |
|---|---|---|---|
| NS vs. NNS-H | 5.85 | 2.915 | .149 |
| NS vs. NNS-L | 13.38* | 2.915 | .000 |
| NNS-H vs. NNS-L | 7.53* | 2.325 | .010 |

$*p < .05$

## 4.2 Size of Pause-Defined Units (PDU)

The size of PDU (or the number of words per pause) was calculated per participant as the proportion of words in total (i.e. 119 words) divided by the number of PDU. Table 4.4 shows PDU size produced by each participant. The calculation of mean values and standard deviation was demonstrated in Table 4.5.

Table 4.4: *Size of PDU by Participant*

| Participant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NS (n=7) | 8.5 | 7.4 | 7.4 | 5.2 | 7.4 | 5.9 | 7.4 | | | | | | | | |
| NNS-H (n=15) | 4.9 | 4.8 | 4.9 | 6.3 | 4.9 | 5.7 | 5.4 | 4.4 | 5.4 | 7.4 | 6.3 | 3.7 | 5.2 | 5.4 | 4.4 |
| NNS-L (n=15) | 3.8 | 3.5 | 3.2 | 4.6 | 6.3 | 2.5 | 3.7 | 3.2 | 6.3 | 4.6 | 3.1 | 6.3 | 3.6 | 2.8 | 5.9 |

Table 4.5: *Minimum, Maximum and Mean Values of PDU Size by Group*

| Group | Min PDU Size | Max PDU Size | $\overline{x}$ | Std. | Sig. |
|---|---|---|---|---|---|
| NS (n=7) | 5.17 | 8.50 | 7.05 | 1.113 | .000* |
| NNS-H (n=15) | 3.72 | 7.44 | 5.28 | .900 | |
| NNS-L (n=15) | 2.53 | 6.26 | 4.23 | 1.337 | |

With respect to the average words per pause ratio (PDU size), it was found that the NS group read the text at the average of 7.05 words per pause, whereas the high group and the low group read the text at the average of 5.28 and 4.23 words per pause, respectively. As one can see, there is an inverse relationship between the number of PDU and PDU size. When the number of PDU becomes larger, PDU size becomes smaller, and vice versa. The inverse proportion of the two variables suggests that as native speakers read in smaller numbers of PDU, they produced longer chunks of information than the Thai participants. Between the two Thai learners groups, the high group read in fewer units, suggesting that they tended to have the ability to produce bigger and longer chunks of information than lower proficiency learners, who paused more frequently and thus produced shorter lengths of PDU. As discussed in Section 2.5 of Chapter 2, lower proficiency learners are assumed to have the ability to recognize and process fewer words at a time. Quite evidently, they divide the text into more number of smaller chunks than those with higher English proficiency.

The results from one-way ANOVA and the Scheffe's post hoc pairwise comparisons revealed significant differences in PDU size between the NS group and the high group as well as between the NS group and the low group, but no significant difference was found between the two groups of Thai learners as shown in Table 4.6.

Table 4.6: *Comparisons of the Mean Values of PDU Size across Groups*

| Group | Mean Diff | Std. | Sig. |
|---|---|---|---|
| NS vs. NNS-H | 1.77* | .519 | .007 |
| NS vs. NNS-L | 2.82* | .519 | .000 |
| NNS-H vs. NNS-L | 1.05 | .414 | .054 |

$*p < .05$

The quantitative results of pause number and PDU size among the three groups suggest that although pause patterns of Thai learners are different from those of native English speaker, the patterns of learners with higher English proficiency are more native-like than learners with lower proficiency level. However, as the performance in relation to PDU size between the NS group and the high group still differed significantly, the result implies that the ability to process language in proper chunk size may require a more advanced level of language proficiency.

In order to observe the extent to which the chunks of information correlate with syntactic units, it is necessary that we examine in more detail the participants' pause positions and compare them with predicted pause locations as described in Chapter 3. The results of pause positions are reported and discussed qualitatively in the following section.

**4.3 Pause Positions**

In the analyses of pause positions, the reading text was initially analyzed to predict the positions of potential pauses based on syntactic structures. (Please refer to Text Analysis in Section 3.3 of Chapter 3.) The predicted pause sites were used as the framework to identify the extent to which the high and low groups used grammatically appropriate pausing.

The data set below shows pause locations of participants in each group. The numbers in parentheses indicate the percentage of participants producing pauses. The single slash (/) and double slash (//) indicate pauses predicted on the basis of syntactic structures. There are 14 locations predetermined to be strong boundaries (i.e. 6 at sentence finals and 8 at major clause boundaries) and are marked with (//). Seventeen

other locations (i.e. at weak boundaries between phrases) are marked with (/), representing potential but optional pause sites. The text contains 119 words in total.

1. <u>NS Group</u> (n=7)

[Title] The North Wind (28.6)/ and The Sun (100)//

[S1] One day, (42.9)/ the North Wind and the Sun / were arguing / about which of them was stronger, (100)// when a traveler came along (28.6)/ wrapped up in an overcoat.(100)// [S2] They agreed (100)// that the one / who could make the traveler (14.3) take his coat off (100)// would be considered / stronger than the other one. (100)//

[S3] Then (14.3)/ the North Wind (14.3)/ blew as hard as he could, (100)// but the harder he blew, (100)// the tighter (14.3)/ the traveler wrapped his coat around him; (100)// and at last (57.1)/ the North Wind (14.3)/gave up trying. (100)//

[S4] Then (14.3)/ the Sun began to shine hot, (100)// and right away / the traveler (14.3) took his coat off. (100)// [S5] And so (42.9)/ the North Wind (28.6)/ had to admit (100)// that the Sun was stronger / than he was. (100)//

From the data of the NS group, one can observe that pauses of 100% agreement occurred at all 14 locations predetermined to be extra-strong and strong boundaries (i.e. at sentence ends and major clause boundaries, marked with double slash). At weak boundaries between phrases (i.e., those marked with single slash), pauses that were consistent with predetermined pauses were found at 11 locations. Almost all pauses occurring at weak boundaries were made by less than 50% of the participants. NSs did not pause at 6 other predetermined potential pause sites. This could be because pausing at these sites would result in having many PDUs with too small number of words. One may recall that the average size of PDU produced by the

NS group in this study was 7, consistent with George A. Miller's "chunking" concept: *the magical number seven, plus or minus two*, which holds that short-term (or working) memory has the capacity to process approximately 7 words at a time. One point worth noting in the data is that there were 2 pauses occurring at the SP juncture (i.e., *the traveler / take (took) his coat off…*) in Sentences 2 and 4. These 2 pauses were made by the same NS who paused most frequently among the participants in the NS group and reasoned that his frequent pauses could have resulted from his stylistic preference as he habitually paused frequently when reading bedtime stories to his children.

2.  <u>NNS-H Group</u> (n=15)

[Title] The North Wind (13.3)/ and The Sun (100)//

[S1] One day, (86.7)/ the North Wind (6.7) and the Sun (33.3)/ were arguing / about (53.3) which of them (13.3) was stronger, (100)// when a traveler came along (53.3)/ wrapped up (33.3) in an overcoat. (100)// [S2] They agreed // that (93.3) the one (6.7)/ who could make the traveler (13.3) take his coat off (100)// would be considered (40.0) / stronger (13.3) than the other one. (100)//

[S3] Then (80.0)/ the North Wind / blew (6.7) as hard as he could, (100)// but (33.3) the harder he blew, (100)// the tighter (20.0)/ the traveler (6.7) wrapped (6.7) his coat (13.3) around him; (100)// and at last (100)/ the North Wind (6.7)/ gave up trying. (100)//

[S4] Then (66.7)/ the Sun began (6.7) to shine hot, (100)// and (6.7) right away (66.7)/ the traveler (20.0) took his coat off. (100)// [S5] And so (66.7)/ the North Wind (6.7)/ had to admit (13.3)// that (86.7) the Sun (13.3) was stronger (26.7)/ than he was. (100)//

The results of pause locations among learners in the high group revealed that pauses of 100% agreement occurred at 13 locations, 12 of which were in accord with the locations predetermined to be extra-strong and strong boundaries (i.e. at sentence ends and major clause boundaries). Another unanimous pause occurred at a boundary judged as weak (i.e. following the adverb *at last* /…) in Sentence 3. At two other predetermined strong pause sites, it was found that no learners in the high group paused at the junctures between the verb *agreed* and the '*that*-noun clause' in Sentence 2, and only 13.3% of learners paused at the juncture between the verb *admit* and the '*that*-noun clause' in Sentence 5. This will be discussed in Section 4.3.4 and Section 4.3.6. Varying percentages of learners in the high-group made pauses at 32 other locations, mostly at phrase boundaries, 15 of which were consistent with predetermined weak boundary pauses. Among the 17 pauses that did not agree with predetermined pause locations, it was found that only a small number of pauses were regarded as syntactically inappropriate. This will be discussed qualitatively in later sections.

3. <u>NNS-L Group</u> (n=15)

[Title] The North Wind (6.7)/ and The Sun (100)//

[S1] One day, (66.7)/ the North Wind (6.7) and the Sun (40.0)/ were (13.3) arguing (13.3)/ about (13.3) which (33.3) of (13.3) them (40.0) was (20.0) stronger, (100)// when (20.0) a traveler (33.3) came along / wrapped (46.7) up (60.0) in (13.3) an (6.7) overcoat. (100)// [S2] They (13.3) agreed (33.3)// that (33.3) the one (46.7)/ who (6.7) could (33.3) make (6.7) the (6.7) traveler (40.0) take (13.3) his (13.3) coat (20.0) off (53.3)// would (6.7) be (6.7) considered (60.0)/ stronger (13.3) than (20.0) the other one. (100)//

[S3] Then (13.3)/ the North (6.7) Wind / blew (40.0) as (20.0) hard (60.0) as (26.7) he (13.3) could, (100)// but (46.7) the harder (26.7) he blew, (100)// the (13.3) tighter (46.7)/ the (13.3) traveler (33.3) wrapped (66.7) his (20.0) coat (6.7) around him; (100)// and (13.3) at last (40.0)/ the North (13.3) Wind (26.7)/ gave (6.7) up trying. (100)//

[S4] Then (13.3)/ the Sun (26.7) began (20.0) to shine hot, (100)// and (6.7) right (6.7) away (33.3)/ the (6.7) traveler (40.0) took (26.7) his (33.3) coat (13.3) off. (100)// [S5] And (13.3) so (20.0)/ the North (13.3) Wind (33.3)/ had (40.0) to admit (60.0)// that (46.7) the Sun (13.3) was (6.7) stronger (46.7)/ than (13.3) he (6.7) was. (100)//

In the low group, unanimous pauses were found at 11 locations, all of which agreed with the predetermined pauses at extra-strong and strong boundaries (6 at sentence boundaries and 5 at major clause boundaries). At three other predetermined strong pause sites, it was found that 33.3% of learners in the low group paused at the junctures between the verb *agreed* and the '*that*-noun clause' in Sentence 3, 53.3% of learners paused between the complex subject and the verb phrase *the one who*…. // *would be considered*…in Sentence 2, and 60% of learners paused at the juncture between the verb *admit* and the '*that*-noun clause' in Sentence 5. Other pauses made by varying percentages of learners in the low group were found at 76 other locations, 15 of which were in accord with predetermined pauses at phrase boundaries. Pauses of 61 locations did not agree with potential pause sites. Among these 61 locations, only 3 of them were made by more than 50% of learners; 58 locations had less than 50% agreement among learners in the low group. A large number of pauses positions were syntactically inappropriate, such as those occurring in the following environments.

1. Within a verb phrase

2. Between an adjective and the noun it modified

3. Between a noun and its determiner

4. Between a preposition and its object

5. Between a verb and its direct object

6. Between a copula verb and a complement

7. Between a simple subject and a verb

8. Before a prepositional phrase

9. After the conjunction

In comparing pause positions of the 3 groups from the data set above, one may observe that pauses of 100% agreement in all groups occurred at sentence boundaries (marked with a full stop) without exception. Variability existed at various locations within sentences. In the NS group, unanimous pauses occurred at all 14 locations predetermined as strong and extra-strong boundaries (6 at sentence ends and 8 at major clause boundaries). Almost all cases of inconsistency within the NS group occurred at weak boundaries between phrases. The results of NSs' pause locations indicate that pauses correlate with syntactic structures, especially those at boundaries with the strength values of 2 and 3. In the high group, uniformity existed at 13 locations, 12 of which were in accord with the predetermined pauses at strong and extra-strong boundaries. One uniform pattern of pause in the high group was made at a boundary judged as weak. In the low group, pauses of 100% agreement existed at 11 locations: 6 at sentence boundaries and 5 at major clause boundaries. As a whole, pause positions of learners in the low group were substantially more varied. A large number of pauses occurred at positions which were syntactically inappropriate.

For ease of examining pause positions of participants in the 3 groups against the predetermined potential pauses, the analysis was conducted at the sentence level. The results will be presented and discussed qualitatively in the following sub-sections.

**4.3.1 Pause Positions in the Title Statement**

The data set below shows pause locations in the title statement of the 3 sample groups in comparison with the predetermined pauses. The numbers in parentheses show the percentage of participants placing pauses at certain locations. The title phrase contains six words with two conjoined noun phrases (NP). There are two predicted pause sites; one at the extra-strong boundary marked with (//) and ranked by number 3, and the other before the coordinating conjunction, marked with number 1 representing a potential but optional pause position.

```
Title:              The North Wind / and The Sun //
                                    1              3
NS (n=7):                       /(28.6)/      //(100)//

NNS-H (n=15):                   /(13.3)/      //(100)//

NNS-L (n=15):                    /(6.7)/      //(100)//
```

The data set above shows that all participants in each group paused at the title end. This is because the title is typically treated as a paragraph. An additional pause was made at the weak boundary between the two noun phrases by some participants. It is noticeable that native speakers paused at this location in the highest percentage. It may be hypothesized that native speakers used more frequent pauses in the title statement to serve the emphatic function. In other words, native speakers intentionally used pauses to emphasize a specific word or phrase to draw the hearer's attention to particular subject matters signaled in the title. Comparatively, a smaller percentage of

Thai participants read the title in 2 PDUs. This could be because most Thai learners in this study did not consider the use of pause to create expressive elements in the way native speakers did. They merely read the title to convey its referential meaning.

### 4.3.2 Pause Positions in the First Sentence

The data set below shows pause locations in the first sentence of the three sample groups. Again, the numbers in parentheses show the percentage of participants placing pauses at certain locations. The asterisk (*) indicates pauses made by the participants at positions regarded as syntactically inappropriate.

```
[S1]    One day,/ the North Wind and the Sun / were arguing / about which of  them   was   stronger //
           1                                  1              1                                        2
NS         /(42.9)/                                                                           //(100)//

NNS-H      /(86.7)/          (6.7)    /(33.3)/              (53.3)*              (13.3)        //(100)//

NNS-L      /(66.7)/          (6.7)    /(40)/  (13.3)* /(13.3)/ (13.3)*(33.3)*(13.3)* (40) (20)*//(100)//


           when   a traveler   came along / wrapped   up   in   an   overcoat. //
                               1                                         3
NS                             /(28.6)/                          //(100)//

NNS-H                          /(53.3)/           (33.3)         //(100)//

NNS-L      (20)*     (33.3)               (46.7)* (60) (13.3)* (6.7)*  //(100)//
```

(*) inappropriate pause positions

The first sentence has 26 words and is marked with 1 extra-strong pause site at the sentence final, 1 strong pause site at a major clause boundary, and 4 potential pause sites at weak boundaries.

The data set above shows that all participants regardless of proficiency groups paused uniformly at sentence and major clause boundaries. Native speakers made 2 additional pauses at weak boundaries that were consistent with predetermined pauses. It is interesting to note that less than 50% of native readers paused at the adverbial-

head (Adv-H) juncture (i.e. *one day, / the North Wind…*). This location is marked for a potential pause due to the existence of a comma. Theoretically, a pause is expected to coincide with punctuation in written text. However, one might argue by the fact that even writers may differ in the amount of punctuation used in their writings. Likewise, different speakers may also use pauses more or less frequently than others.

Learners in the high group made more frequent pauses than the native readers. Pauses at strong boundaries were in agreement with predetermined pauses. Pauses at 4 other locations were not predicted as potential pauses. Although one might argue that some of these pauses tend to correlate with syntactic units as they occur between phrases, these positions are less likely pause sites because the 2 phrases are closely related to one another as shown in the following examples.

NP + NP        *the North Wind /*        *and the Sun*

NP + VP        *which of them /*         *was stronger*

VP + PP        *wrapped up /*            *in an overcoat*

A syntactically inappropriate pause made by 53.3% of the participants occurred within a prepositional phrase (i.e., between the preposition and its object: *about /\* which of them…*) in Sentence 1. This location was an inappropriate pause site because the preposition, which functions as the head of the prepositional phrase, should not be separated from its complement by a pause. This faulty division of syntactic units among learners in the high group may have been caused partly by the transfer of the learners' first language. The Thai equivalent of '*about*' is normally attached to the verb in spoken Thai language. Consequently, many Thai speakers tend to pause after '*about*' in English sentences.

In the low group, pauses that coincided with predicted pauses were found at sentence and major clause boundaries and at 3 other locations at weak boundaries between phrases. One can observe that many learners in the low group made pauses between almost all words. Pauses occurred at numerous syntactically inappropriate locations and the characteristics of PDU are more varied as shown.

(1) Within VP:     *were /\*     arguing,     wrapped /\* up*

(2) Within PP:     *about /\*     which ...*

                      *of /\*     them,     in /\*     an …*

(3) Within NP:     *which /\*     of them*

                      *an /\*     overcoat*

In comparing pauses made by the 2 groups of Thai learners, one can see that the low group paused more frequently and a large number of pauses were put in syntactically inappropriate positions; their PDU size was smaller and several PDUs did not correlate with syntactic units.

**4.3.3 Pause Positions in the Second Sentence**

Pause locations in the second sentence produced by the participants are shown in the data set below. The asterisk (\*) indicates pauses made at grammatically inappropriate positions.

[S2]    They agreed // that the one / who could make the traveler take his coat off //
               2             1                               2

NS         //(100)//             (14.3)        //(100)//

NNS-H     (93.3)\* /(6.7)/        (13.3)       //(100)//

NNS-L    (13.3)\*//(33.3)// (33.3)\* /(46.7)/ (6.7)\* (33.3)\* (6.7) (6.7)\* (40) (13.3)\* (13.3)\* (20)\* //(53.3)//

| | would | be | considered | / | stronger | than | the other one. // | |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | | | | 3 | |
| NS | | | | | | | | //(100)// |
| NNS-H | | | | /(40)/ | (13.3)* | | | //(100)// |
| NNS-L | (6.7)* | (6.7)* | | /(60)/ | (13.3)* | (20)* | | //(100)// |

The second sentence contains 22 words, with an extra-strong pause site at sentence final, 2 strong pause positions at clause boundaries, and 2 potential pause sites at phrase boundaries.

In this sentence, the uniform pattern of pause placement among the 3 sample groups existed at the sentence final. At one major clause boundary (between *off* and *would be considered*), a pause of 100% agreement existed in the NS group and the high group. At another strong boundary marked with strength value of 2 (i.e. the juncture between the verb *agreed* and the '*that*-noun clause'), variability of pause patterns was observed among the 3 groups. At this location, all native readers paused unanimously. Thai learners, on the contrary, paused differently from that the native speaker norm. As one can see, no pause occurred at this position among participants in the high group; instead, 93.3% of the high-group participants placed a pause after the complementizer '*that*'. This finding is consistent with the results of Wongchompoo's (2013) study, in which Thai students with high English proficiency paused after '*that*', whereas native English speakers paused longer at the position preceding '*that*' in 10 target sentences. This phenomenon could presumably be hypothesized to arise from the syntactic difference between the complementizer '*that*' and the word '*waa*', which is a Thai translation of '*that*'. Although these words are claimed to be equivalents in terms of meaning, they perform different functions in the sentence. '*That*' functions as a complementizer which is considered an integral part of

a noun clause in English; therefore, it should not be separated from the clause by a pause. A grammatically appropriate pause site for a sentence with the noun clause structure should be before the complementizer '*that*'. By contrast, '*waa*' in Thai functions a particle in a serial verb construction. It belongs to the verb it is attached to. These verbs include, for example, verbs of utterance such as *say, state, argue, announce*, and mental verbs such as *think, know, wonder,* and *understand*. When Thai speakers say a sentence with the '*waa*-noun clause', a pause will appear after the particle '*waa*', and not within the serial verb construction. As asserted by Wongchompoo, the pause that occurred after '*that*' in English among high-proficiency learners could be influenced by the transfer of the pause pattern of '*waa*' in Thai to '*that*' in L2 English as a result of the difference in the syntactic systems between the two languages.

In the low group, pauses occurred more frequently and again the locations were more varied. As one can see, learners in the low group paused unanimously at only one location, which is at the sentence final. Variations existed at several locations within the sentence. Even at the major clause boundary where a pause was placed unanimously in both the NS group and the high group, only about half of the low group participants (i.e., 53.3%) made a pause at this position. This could be because this site was not marked by punctuation. One can observe from the asterisk mark in the data that learners in the low group had numerous syntactically inappropriate pauses, which tended to occur between almost all words.

A point worth noting here concerns a pause preceding and following '*that*' of the '*that-noun clause*' as discussed earlier. The pause pattern of the low group differed from the patterns of both the NS group and the high group. That is, a pause

was found at positions both preceding and following '*that*'. This suggests that the theory of L1 transfer may not be used to explicate the pattern of the low-proficiency learners. One possible explanation for this phenomenon could be attributed to learners' limited syntactic knowledge, which may have caused them to be unaware of the syntactic similarities and differences between the two languages.

### 4.3.4 Pause Positions in the Third Sentence

The data set below shows pause locations in the third sentence produced by the participants and potential pause sites with boundary strength indicators. The asterisk (*) indicates pauses made at syntactically inappropriate positions.

```
[S3]    Then / the North  Wind / blew as    hard    as    he    could, //    but   the harder  he blew, //
             1                 1                                       2                              2
NS          /(14.3)/        /(14.3)/                              //(100)//                      //(100)//

NNS-H    /(80)/                (6.7)*                             //(100)// (33.3)*          //(100)//

NNS-L    /(13.3)/   (6.7)*       (40)*(20)* (60)*(26.7)*(13.3)*//(100)// (46.7)*      (26.7)*   //(100)//


         the    tighter /  the   traveler  wrapped   his   coat  around him; //
                  1                                                  3
NS                 /(14.3)/                                     //(100)//

NNS-H             /(20)/         (6.7)*    (6.7)*      (13.3)*   //(100)//

NNS-L   (13.3)*  /(46.7)/ (13.3)* (33.3)*   (66.7)* (20)* (6.7)*     //(100)//


         and   at last /  the North   Wind /  gave  up trying. //
                 1                 1             3
NS               /(57.1)/        /(14.3)/      //(100)//

NNS-H            /(100)/         /(6.7)/       //(100)//

NNS-L   (13.3)* /(40)/    (13.3)* /(26.7)/ (6.7)*    //(100)//
```

The third sentence has 33 words. It is the longest and appears to be the most complex one. The sentence is marked with 2 extra-strong pause sites: one at sentence

final and the other at the boundary marked by the semi-colon. There are 2 strong pause sites at major clause boundaries and 5 potential pause sites at weak boundaries between phrases.

From the data of the NS group, all pauses occurred at potential pause locations. Unanimity existed among all native readers at extra-strong and strong boundaries. It is observed that at each weak boundary between phrases, a pause was made by only 1 participant (14.3%), except at the Adverbial-Head juncture (*at last / the North Wind…*) where a pause was placed by 57% of the participants.

Pauses of the high group were in accord with predicted pauses at 8 positions: 4 at extra-strong and strong boundaries and 4 at weak pause sites between phrases. Pauses at extra-strong and strong boundaries between major clauses were made unanimously by all learners in the high group. Five additional pauses occurred at inappropriate pause sites as shown in the below.

(1) Between Verb and Adverb:         *blew  /\*       as hard as…*

(2) Between Verb and Direct Object:     *wrapped  /\*   his coat*

(3) Between Simple Subject and Verb:    *the traveler /\*  wrapped*

(4) After Conjunction:                *but  /\*       the harder…*

(5) Before Prepositional Phrase:       *his coat /\*   around him*

In the low group, pauses were uniformly made by all participants at 4 strong and extra-strong boundaries, all of which were marked by punctuation (a full stop, a semi-colon, and 2 commas). Four other pauses occurred at potential weak boundaries. Additional to those sites, pauses also occurred at 17 other locations that were not

predicted as potential pause sites. Among these locations, many of them appeared to be syntactically inappropriate as shown in the following examples.

(1) Between Adjective and Noun: *the North /\* Wind*

(2) Between Noun and Determiner: *the /\* traveler, his /\* coat*

(3) Between Simple Subject and Verb: *the traveler /\* wrapped*

(4) After Conjunction: *but /\* the harder…, and /\* at last*

(5) Between Verb and Direct Object: *wrapped /\* his coat*

(6) Between Conjunctions: *as /\* hard /\* as*

(7) Within Verb Phrase: *gave / \* up*

As can be seen, low-proficiency learners made a large number of pauses at syntactically inappropriate positions. This is probably due to the fact that the sentence is long and complex; learners appeared to have difficulty processing information. Consequently, they paused more frequently and came up with a lot of small chunks. Moreover, most of these chunks did not correlate with English syntactic units.

### 4.3.5 Pause Positions in the Fourth Sentence

The data set below shows pause locations in the fourth sentence produced by the participants and potential pause sites with boundary strength indicators.

```
[S4]    Then / the Sun began to shine hot, // and right  away / the traveler took   his   coat   off. //
          1                                2                1                                        3
NS      /(14.3)/                      //(100)//                        (14.3)*              //(100)//
NNS-H   /(66.7)/           (6.7)*   //(100)//(6.7)*    /(66.7)/    (20)*                    //(100)//
NNS-L   /(13.3)/  (26.7)* (20)*    ///(100)//(6.7)* (6.7)* /(33.3)/(6.7)* (40)* (26.7)*(33.3)*(13.3)*//(100)//
```

The fourth sentence has 16 words. It is predicted to have an extra-strong boundary at sentence final and a strong boundary between the two clauses. There are 2 additional potential pause sites at the 2 Adverb-Head (AH) junctures as shown.

From the data of the NS group displayed above, all native speakers paused unanimously at the extra-strong and strong boundaries. At one adverb-head juncture (i.e. between '*then*' and the following clause), a pause was made by one native speaker (14.3%). The data shows that an additional pause was also found at the SP juncture of the second clause: *the traveler / took his coat off*, which is not predicted for a pause site. Generally, a pause hardly occurs at the SP juncture when the subject is a pronoun or a simple noun phrase in an unmarked situation as it will create a jerky rhythm in speech. However, in the case that the speaker intends to create emphasizing or dramatic effect especially in storytelling, a pause at the SP boundary will serve to render an expressive element in the discourse.

A uniform pattern of pause placement among learners in the high-proficiency group was observed at two positions predicted as extra-strong and strong boundaries marked by punctuation. Two additional pauses which had more than 50% of agreement from participants in the high group were found at 2 weak-boundary potential pause sites. Syntactically inappropriate pauses were observed at 2 positions, each of which was made by only one participant (6.7%): (1) within the verb phrase: *the Sun began / to shine hot*, and (2) after the conjunction '*and*'.

In the low group, pauses were uniformly made at extra-strong and strong boundaries in the same manner as the high group, for these sites were marked by

punctuation. Comparatively, the low group made considerably more pauses that were syntactically inappropriate than the high group. These locations included:

    (1) between *right / away*,

    (2) between Noun and Determiner *the / traveler*,

    (3) between Verb and Object *took / his coat off*

    (4) within Phrasal Verb *took his coat / off*.

### 4.3.6 Pause Positions in the Fifth Sentence

Pause locations in the fifth sentence produced by the participants are shown in the data set below together with potential pause sites and boundary strength indicators.

```
[S5]    And  so / the North Wind / had  to admit // that  the Sun  was  stronger / than   he   was. //
                1              1            2                                    1              3
NS           /(42.9)/        /(28.6)/     //(100)//                                           //(100)//

NNS-H        /(66.7)/        /(6.7)/      //(13.3)// (86.7)* (13.3)*    /(26.7)/              //(100)//

NNS-L   (13.3)*/(20)/  (13.3)* /(33.3)/ (40)* //(60)// (46.7)*  (13.3)* (6.7)* /(46.7)/ (13.3)* (6.7)* //(100)//
```

The fifth and final sentence consists of 16 words. It was predicted to have an extra-strong boundary at sentence final and a strong boundary between the verb and object noun clause, with 3 additional potential pause sites at weak boundaries.

From the above data set, pause positions which had 100% of agreement from native speakers were found at the extra-strong and strong boundaries. Additional pauses were made by some native speakers at 2 phrase boundaries which were in accord with potential pause sites. It is observed that at the Adverb-Head juncture and the S-P structure of this final sentence, a pause was made at each position by a higher number of participants. This could be because the last sentence of a text normally

contains a concluding statement or the climax of the passage. The reader may intentionally read the sentence with special emphasis on some important words or phrases.

In the high group, the only pause position that had 100% of agreement from participants was at the sentence final. The other position which is predicted to be a strong boundary (i.e. *admit / 'that' clause*), learners in the high group paused differently from native English speakers. The result showed that the learners' pause pattern of the '*that*-noun clause' in this sentence was consistent with their performance of the same structure in sentence 2. That is, instead of pausing before '*that*' in the same way all NS readers did, the majority of learners in the high group (86.7%) paused after '*that*'. This supports the hypothesis discussed earlier in Section 4.3.3 that the L1 pause pattern of the '*that*-noun clause' in Thai might have influenced the way high-proficiency learners used pauses in the equivalent structure in L2 English.

In examining the data of the low group, one can also find the occurrence of more frequent and more varied pauses in the final sentence. Positions that appeared to be syntactically inappropriate include the following examples.

(1) After the conjunction:      *And /\* so,*    *than /\* he*

(2) Within the NP:        *the North /\* Wind*

(3) Within the Verb Phrase:     *had /\* to admit*

(4) Between Verb and Complement: *was /\* stronger*

(5) Between Subject and Verb:    *he /\* was*

It should be noted that at the '*that-noun clause*' structure, the pause pattern of the low group was not in line with that of the high group, and it also deviated from the NS norm. While most learners in the high group made a pause at the position following '*that*', learners in the low group made pauses both preceding and following '*that*' (i.e. at 60% and 46.7%, respectively). The pattern of learners in the low group was similar to that performed in sentence 2, that is, pauses occurred at both positions. A possible explanation for the different pause pattern among participants in the low group could be attributable to their limited knowledge of English syntax, which may have caused them to pause more frequently without knowing relationships between structural parts of sentences.

## 4.4 Summary

The experiment using a read-aloud task was conducted in order to investigate the pause patterns of Thai EFL learners at high and low English proficiency levels in contrast with those of native English speakers. Additionally, the experiment served to examine the extent to which the pause patterns of native English speakers and Thai learners exhibit relations to syntactic structure of English sentences. The participants' performance was analyzed quantitatively and qualitatively.

The quantitative analyses reveal that the pause patterns of Thai learners are different from those of native English speakers. With regard to the number of PDU, the NS group read the text of 119 words with an average of 17.29 PDUs, whereas Thai learners with high English proficiency produced 23.13 PDUs on average and the low-proficiency group read the text averaging at 30.67 PDUs. Statistical testing results show significant difference in the performance between the NS group and the

low group as well as between the two groups of Thai learners. The performance between the NS group and the high group did not differ significantly. This suggests that the pause pattern of the high group with regard to the number of pause exhibited more similarity to that of native English speakers.

With respect to PDU size (or the number of words per pause), the results reveal that the average words per pause ratio in the NS group was 7.05, whereas the high group read the text with an average of 5.28 words per pause and the low group at 4.23 words per pause. The values of PDU size were inversely proportional to the number of PDU. That is, with smaller number of PDU, the PDU size becomes larger, and vice versa. Comparatively, learners in the high group performed more similarly to native English speakers than did learners in the low group. However, when testing differences across the groups, statistical results reveal that the PDU size of the NS group differed significantly from the PDU size of both the high group and the low group. The results reveal no significant difference in PDU size between the two groups of Thai learners. The findings thus suggest that producing proper sized chunks tends to be more difficult to acquire and it could be achieved when learners are at a more advanced level of language proficiency.

In order to investigate the participants' pause patterns in relation to syntactic structures, the positions of pauses produced by the 3 groups were qualitatively analyzed.

First, the analysis was conducted by analyzing the reading text to predict pause positions. The predicted pause sites were used as the framework to analyze native speakers' pause positions in order to examine how native speakers related

pauses with syntactic structures of sentences. Then, pause positions detected in the recordings of the high and low groups of Thai learners were compared with those observed among native speakers in order to identify the extent to which the learners of both groups used syntactically appropriate pausing.

Based on the analyses, the results showed that the locations of 14 pauses which were uniformly produced by all native speakers occurred at places consistent with the 14 places predetermined to be the most likely pause sites at extra-strong and strong boundaries. Additional pauses at other positions were found at weaker syntactic boundaries between phrases, which are regarded as potential but optional pause sites. The results of pause positions among native English speakers indicate that uniform patterns of pause placement existed between complete sentences, and at the clause levels, whilst pauses within sentences varied among individual speakers. A point worth noting here is that, there were 2 locations in the data of the NS group that a pause occurred other than those predetermined to be boundaries between sense groups. These 2 pauses were made by one NS who paused most frequently among the participants in the NS group. From the interview with this participant following the audio recording, his frequent pauses could have resulted from his stylistic preference as he habitually paused frequently when reading bedtime stories to his children. In fact, one limitation of this study is that all participants were not asked to state why they paused at particular locations due to the reasons of focus and scope. As understanding why such pauses occurred might reveal valuable insights, further investigation into the participants' metalinguistic knowledge governing their pause patterns should be recommended.

In the high group, uniformity existed at 13 pause locations. Of these 13 locations, 12 pauses were in agreement with predetermined pauses at strong boundaries, with 11 positions marked by punctuation. Overall, pauses of the high group were consistent with the predetermined pause sites. Only a smaller number of pauses occurring in the data of the high group were regarded as syntactically inappropriate. A notable point in the performance in the high group was found at the junctures between the verb and the '*that*-noun clause'. At these junctures, most high-group participants performed a pause pattern differently from that of native English speakers. This *verb-noun clause* juncture is predicted to be syntactically appropriate for a pause because it is a point where a main clause and a subordinate clause join together. A pause is predetermined to occur before '*that*' because '*that*' which functions as a complementizer is considered an integral part of the subordinate clause and it should not be interrupted within the clause by a pause.

The data of the high group show that, only a few participants placed a pause before '*that*'; instead, most participants made a pause after '*that*' in the two sentences containing this structure. This phenomenon could presumably be hypothesized to arise from the transfer of a similar element or pattern in the learners' native language. The word '*that*' in English is equivalent in meaning to '*waa*' in Thai, but '*waa*' functions as a particle attached to a verb in a serial verb construction and cannot be separated by a pause. Thus, when saying a sentence with the '*waa*' noun clause, Thai speakers normally  pause after the particle '*waa*'. This is consistent with writing a sentence with the '*waa*' noun clause in Thai. A space, which occurs only at the sentence and clause boundaries in the Thai writing system, is required to be placed after the word '*waa*'. From the results of this study, it could be hypothesized that the

pause pattern of the noun clause structure occurring in the high group is likely to be influenced by the transfer of learners' L1 to L2 English.

In the low group, a uniform pattern of pause placement was found at 11 locations: 6 at sentence boundaries and 5 at major clause boundaries, all of which were marked by punctuation. Several pauses placed by the lower proficiency learners occurred at locations which were regarded as syntactically inappropriate such as those within a verb phrase, between a noun and its determiner, between a preposition and its object, between an adjective and the noun it modifies, and so on. The findings indicate that the majority of learners in the low group still lack syntactic knowledge, causing them to produce small chunks of information. In addition, a large number of their chunks did not correlate with English syntactic units.

Another notable point observed in the use of pause in the low group is the pause at the '*that-noun clause*' juncture. The results reveal a different pattern from that of the high group. In the low group, pauses occurred both preceding and following '*that*' in both sentences. A possible hypothesis that may explicate this phenomenon could again be attributable to learners' lack of syntactic knowledge, as can be evidenced by the occurrence of numerous pauses at syntactically inappropriate locations.

In comparing pauses between the high group and the low group of Thai learners, one can see that of the 12 boundaries marked by punctuation (6 at the title end and sentence finals, 5 marked with a comma, and 1 marked with a semi-colon), both the high and low groups paused unanimously at 11 locations. The results suggest that learners in the high and low groups paused in a similar manner at locations where

punctuation was indicated. Variation existed at only 1 location in Sentence 1. A pause after '*One day*' marked with a comma had an agreement of 86.7% of the learners in the high group, and 66.7% of the learners in the low group.

A greater degree of variations between the two groups can be observed at 3 other strong boundaries where no punctuation existed. Two locations occurred at the '*that-noun clause*' juncture in Sentence 2 and Sentence 5 as discussed earlier. The third location was a predicted pause at the complex subject-predicate juncture in Sentence 2 (…*the one who could make the traveler take his coat off // would be considered*…). At this location, a pause of unanimous agreement occurred in the high group, while it had only 53.3% of agreement from the low-group learners. Additionally, different pause patterns between the high group and the low group can also be observed at potential pause sites after sentence adverbs which encode a change of topic, as in: *Then* / (in Sentences 3 and 4), *and at last* / (in Sentence 3), *And so* / (in Sentence 5). Although there was no punctuation at these locations, the majority of learners in the high group made a pause at each location, whereas only a small percentage of learners in the low group paused at these sites. This suggests that learners in the low group relied more heavily on punctuation as a pause marker than the high-group learners who appeared to be more aware of the syntactic and semantic ties between phrases and clauses.

As a whole, most pauses of the high group occurred between major syntactic boundaries—such as sentences and clauses—and were in agreement with predicted pause sites. Additional pauses were made between phrases at predicted weaker boundaries. Although learners in the high group may have placed some pauses at less likely pause sites such as between 2 phrases that are closely related to one another, it

was found that the high group rarely made pauses within syntactic constituents. A small number of syntactically inappropriate pauses occurring in the high group were caused mainly by L1 transfer, for example, the pause after '*about*' in Sentence 1 and 2 pauses after '*that*' in the '*that*-noun clause in Sentence 2 and Sentence 5.

In the low group, pauses made at syntactically inappropriate pause locations were substantially greater in number than those made by the high group. As can be seen, the low-group learners made syntactically appropriate pauses mainly at sentence boundaries and major clause boundaries, which were signaled by punctuation such as a full stop, a semi-colon, or a comma. Several other pauses found in the data of the low group occurred between words or within the syntactically related groups of words that should not be interrupted by a pause. As lower-proficiency learners are claimed to be at an early interlanguage stage, they tend to have limited syntactic knowledge with regard to the relationships between structural parts of sentences. Consequently, instead of dividing sentences into syntactically-related groups of words, they are inclined to make short pauses between words in the same way a space exists between words in written texts.

In summary, the results of the study have shown that pause patterns produced by Thai learners were different from those of native English speakers. Between the two proficiency groups of Thai learners, those with lower English proficiency divided the reading text into more number of chunks, and consequently their chunks of information (PDU) contained fewer numbers of words. In terms of the relations between pauses and syntactic structures, the results have indicated that pause locations produced by native English speakers correlate with boundaries of syntactic constituents. Native speakers paused unanimously at major syntactic boundaries such

as sentence and clause boundaries. Inter-speaker variability existed at minor syntactic boundaries such as phrases. This supports the hypothesis that the syntactic structure influences the likelihood that a pause may occur with greater probability at strong syntactic boundaries such as sentence and clause boundaries than for minor syntactic boundaries such as phrases.

With respect to pause positions of Thai learners, the results indicate that learners in the high group had pause patterns that were more syntactically-related than those in the low group. Pause positions of the low group were more varied; many pauses were found at locations which did not correlate with English syntactic units. The results suggest that with insufficient knowledge of the syntactic and semantic ties between words and phrases, learners tend to have difficulty using appropriate phrasing and pausing.

# CHAPTER V

## CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

The purpose of this study was to investigate the pause patterns in read speech of Thai learners at high and low English proficiency levels in contrast with those of native English speakers; and to examine how the participants related pauses with syntactic structures in English sentences. The goal was to understand where native English speakers pause when they read aloud prepared texts and to identify problems in Thai learners' inappropriate use of pause. The study also aimed to support the importance of introducing read-aloud tasks in EFL classes to enhance the learner's ability to recognize relationships between structural parts of a sentence and to read language using appropriate phrasing and pausing.

In light of the above objectives, the present study sought to answer the following questions addressed in Chapter 1:

(1) What are the pause patterns in read speech of Thai learners at *high* and *low* English proficiency levels in comparison with those of native English speakers?

(2) To what extent do the pause patterns of native English speakers and Thai learners at *high* and *low* English proficiency levels exhibit similarities and differences?

(3) To what extent are the positions of pauses produced by the three sample groups related to syntactic structures of English?

The following hypotheses were therefore formulated and tested:

(1) Pause patterns produced by Thai learners are different from those of native English speakers. However, the pause patterns of Thai learners with higher English proficiency are more similar to those produced by native English speakers in terms of number of pauses, size of pause-defined units (PDU), and pause positions.

(2) Thai learners of lower English proficiency pause more frequently and produce shorter size of PDUs than the more proficient learners, who read in longer, but more semantically- and syntactically-unified units and therefore pause less.

(3) Pause locations produced by native English speakers display relations with syntactic structures in that the syntactic structure influences the likelihood for a pause to occur at syntactic boundaries, with greater probability for major syntactic boundaries such as sentence and clause boundaries than for minor syntactic boundaries such as phrases. Participants in the high group produce pause patterns that are more syntactically-related than those in the low group, who tend to pause at inappropriate pause sites because they may divide sentences into pause-defined units that do not correlate English syntactic units.

In the following three sections in this concluding chapter, the main findings of the study will be summarized. In the second section, pedagogical implications drawn from the study will be presented. The last section will offer some recommendations for future research.

**5.1 The Main Findings of the Study**

In testing hypothesis 1 and hypothesis 2, the performance of the 3 sample groups were analyzed quantitatively. The analyses were conducted to investigate how the participants processed information during the reading aloud activity. The representation of the processed information was measured in terms of the number of chunks between pauses or pause-defined units (PDU) and the number of words per PDU or PDU size.

The results of the experiment revealed that pause patterns of Thai learners were different from those of native English speakers with respect to the number of pauses and PDU size. Learners with lower English proficiency read the 119-word text in a greater number of chunks than the higher proficiency learners, and consequently, their chunks of information (PDU) contained a smaller number of words. Native speakers, on the other hand, divided the text into longer PDUs and therefore made a smaller number of pauses than the two groups of Thai learners. Comparatively, the pause patterns of Thai learners with higher English proficiency were more similar to those of native English speakers. Statistical testing results confirmed that the mean values of pause numbers of the NS group and the high group did not differ significantly. However, in testing the differences in PDU size of the 3 groups, statistical results showed that the performance of the high group as well as the low group differed significantly from the performance of the NS group.

Based on the quantitative analyses conducted herein, it was found that the results supported hypothesis 2 and partly supported hypothesis 1. With regard to hypothesis 1, the results indicate that the pause pattern of Thai learners with higher

English proficiency was more similar to that of native English speakers in terms of pause numbers. However, with regard to the PDU size, the pattern of the high group still differed significantly from that of native English speakers. The results thus suggest that the ability to process language in proper chunks could be claimed to be in a more advanced level of language proficiency.

With respect to the second hypothesis, the results revealed that Thai learners with low English proficiency paused more frequently and produced shorter PDU size than the more proficient learners, who read in longer units and therefore paused less. It can be summarized at this stage that, with increasing English proficiency, learners tend to produce pause patterns that are more native-like.

In testing the third hypothesis, the data of the participants were analyzed qualitatively to examine the extent to which the positions of pauses produced by the three sample groups were related to syntactic structures of English. The results of the experiment showed that all NS participants paused uniformly at the 14 positions that had been predetermined as strong boundary pause sites (i.e. at sentence and major clause boundaries). Almost all cases of inconsistency occurred at weak boundaries. The results of pause position among the native readers thus support the third hypothesis that pauses are most likely to occur at strong syntactic boundaries such as sentence and clause boundaries than for minor syntactic boundaries between phrases. Among the learners in the high group, the findings indicated that most pauses also occurred between major syntactic boundaries—such as sentences and clauses—and were in agreement with predicted pause sites. Additional pauses were made between phrases at predicted weaker boundaries. Pauses made at syntactically inappropriate pause locations were substantially fewer in number than those made by the low group.

According to the results of the low group, learners with lower proficiency tended to use pauses correctly at sentence, clause and some phrase boundaries, which were explicitly marked by punctuation such as a full stop, a semi-colon or a comma. Pauses at other positions were more varied. Many pauses occurred between words or within the syntactically related groups of words that should not be interrupted by a pause. Comparatively, learners with higher English proficiency appeared to be more aware of the syntactic and semantic ties between phrases and clauses and thus they produced pause patterns that were more syntactically-related. Learners with lower English proficiency, in contrast, relied more heavily on punctuation as a pause marker. Where no punctuation existed, they tended to pause at inappropriate sites such as between words rather than at syntactic boundaries. As a result, most of their PDUs did not correlate English syntactic units.

One point that is worth noting in this study is the placement of pause in the '*that-noun clause*' structure. The results revealed that learners in the high group paused differently from the native speaker norm. Instead of pausing in front of the noun clause connector '*that*' in the same way that the native speakers did, most participants paused between the connector '*that*' and the clause that follows it. This phenomenon is hypothesized to result from the transfer of learners' L1 to L2 English. Such transfer did not exist in the case of learners in the low group. This could be attributable to lack of syntactic knowledge among learners with lower level of English proficiency. Their pause patterns appeared to be more or less at random.

It can be summarized that language proficiency plays an important role in pause patterns in the read-aloud task. Learners with low level of English proficiency tend to pause more frequently between words and produce shorter chunk size,

whereas learners with higher proficiency seem to produce pauses that are syntactically related, that is between phrases, clauses and sentences.

**5.2 Implications of the Study**

This study addressed the problems in using appropriate pausing among Thai learners in EFL contexts. The findings of this study offer some pedagogical implications.

Firstly, teachers should attempt to show their students that pauses are essential in rendering communication intelligibility.

Secondly, it was found in the experiment that learners in the low group produced less syntactic related pauses than those in the high group. This suggests that syntactic knowledge plays an important role in the ability to read with appropriate phrasing and pausing. Teachers may show their learners how pause is closely related to parts of speech and syntactic structure. This may be achieved by taking advantage of the language elements that most adult EFL learners have extensively been taught, that is, lots of English grammar. This knowledge can be incorporated with the teaching of pronunciation. By developing learners' awareness of the relationship between grammar and pronunciation, teachers can be equipped with another good classroom technique for improving EFL learners' pronunciation.

The third implication has to do with the teachability of pause. As noted in the findings of this study, near native-like pauses were found among more proficient speakers than among less proficient learners. This suggests that the appropriate use of pausing is learnable. The teacher's goal should be to help students place pauses properly in order to make their speech intelligible to the hearer.

Therefore, it is hoped that the findings will shed some light into the teaching of proper models of pause by integrating reading aloud as part of the EFL teaching/learning processes.

## 5.3 Recommendations for Further Research

Based on the main findings of the study, the following recommendations are made for further research.

Firstly, the participants in this study were not asked to state the reason why they paused at particular locations, i.e. their metalinguistic knowledge governing their pause patterns. Therefore, it limits one's ability to explicate their performance or provide a thorough account of what processes are involved when the participants pause. For a more in-depth analysis of the processes involved in phrasing and pausing, further research is recommended that investigates the reason why participants pause at each location whether by think-aloud protocols or retrospective interviews.

Secondly, the analyses in this study have provided an overview of pause patterns of 2 different levels of Thai learners. Continued research can be conducted to qualitatively examine the characteristics of information chunks produced by Thai learners at varying developmental stages in greater detail.

Finally, further research may also be conducted on native English speakers' perception of pauses produced by L2 learners of different levels of proficiency in terms of fluency, accuracy, pleasantness of speech and the degree of comprehensibility.

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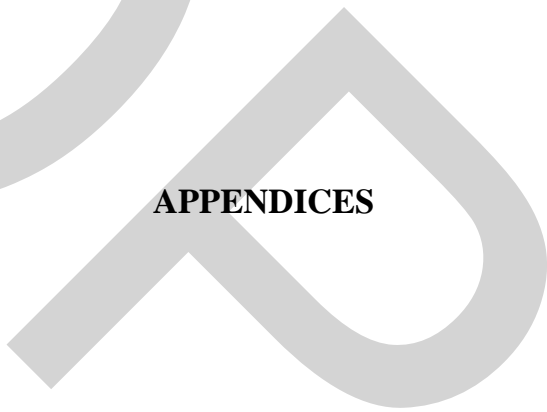
**APPENDICES**

## APPENDIX A

## <u>Reading Text</u>

### The North Wind and The Sun

One day, the North Wind and the Sun were arguing about which of them was stronger, when a traveler came along wrapped up in an overcoat. They agreed that the one who could make the traveler take his coat off would be considered stronger than the other one.

Then the North Wind blew as hard as he could, but the harder he blew, the tighter the traveler wrapped his coat around him; and at last the North Wind gave up trying.

Then the Sun began to shine hot, and right away the traveler took his coat off. And so the North Wind had to admit that the Sun was stronger than he was.

## APPENDIX B

*Number of Pause-Defined Units (PDU) and Size of PDU*

| Group | Title | | S1 | | S2 | | S3 | | S4 | | S5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PDU | Freq | PDU | Freq | PDU | Freq | PDU | Freq | PDU | Freq | PDU | Freq |
| NS01 | 1 | 6.00 | 2 | 13.00 | 3 | 7.33 | 4 | 8.25 | 2 | 8.00 | 2 | 8.00 |
| NS02 | 2 | 3.00 | 3 | 8.67 | 3 | 7.33 | 4 | 8.25 | 2 | 8.00 | 2 | 8.00 |
| NS03 | 1 | 6.00 | 2 | 13.00 | 3 | 7.33 | 5 | 6.60 | 2 | 8.00 | 3 | 5.33 |
| NS04 | 1 | 6.00 | 3 | 8.67 | 4 | 5.50 | 8 | 4.13 | 3 | 5.33 | 4 | 4.00 |
| NS05 | 1 | 6.00 | 3 | 8.67 | 3 | 7.33 | 5 | 6.60 | 2 | 8.00 | 2 | 8.00 |
| NS06 | 2 | 3.00 | 3 | 8.67 | 3 | 7.33 | 6 | 5.50 | 3 | 5.33 | 3 | 5.33 |
| NS07 | 1 | 6.00 | 3 | 8.67 | 3 | 7.33 | 4 | 8.25 | 2 | 8.00 | 3 | 5.33 |
| **Mean** | **1.29** | **5.14** | **2.71** | **9.91** | **3.14** | **7.07** | **5.14** | **6.80** | **2.29** | **7.24** | **2.71** | **6.28** |
| H01 | 1 | 6.00 | 5 | 5.20 | 5 | 4.40 | 6 | 5.50 | 4 | 4.00 | 3 | 5.33 |
| H02 | 1 | 6.00 | 5 | 5.20 | 5 | 4.40 | 7 | 4.71 | 4 | 4.00 | 3 | 5.33 |
| H03 | 1 | 6.00 | 6 | 4.33 | 4 | 5.50 | 7 | 4.71 | 4 | 4.00 | 2 | 8.00 |
| H04 | 1 | 6.00 | 4 | 6.50 | 3 | 7.33 | 5 | 6.60 | 3 | 5.33 | 3 | 5.33 |
| H05 | 1 | 6.00 | 6 | 4.33 | 3 | 7.33 | 6 | 5.50 | 5 | 3.20 | 3 | 5.33 |
| H06 | 1 | 6.00 | 4 | 6.50 | 3 | 7.33 | 6 | 5.50 | 4 | 4.00 | 3 | 5.33 |
| H07 | 1 | 6.00 | 4 | 6.50 | 3 | 7.33 | 7 | 4.71 | 4 | 4.00 | 3 | 5.33 |
| H08 | 2 | 3.00 | 6 | 4.33 | 4 | 5.50 | 8 | 4.13 | 4 | 4.00 | 3 | 5.33 |
| H09 | 1 | 6.00 | 4 | 6.50 | 3 | 7.33 | 7 | 4.71 | 4 | 4.00 | 3 | 5.33 |
| H10 | 1 | 6.00 | 2 | 13.00 | 3 | 7.33 | 5 | 6.60 | 2 | 8.00 | 3 | 5.33 |
| H11 | 1 | 6.00 | 4 | 6.50 | 3 | 7.33 | 6 | 5.50 | 2 | 8.00 | 3 | 5.33 |
| H12 | 1 | 6.00 | 7 | 3.71 | 6 | 3.67 | 9 | 3.67 | 4 | 4.00 | 5 | 3.20 |
| H13 | 1 | 6.00 | 5 | 5.20 | 3 | 7.33 | 7 | 4.71 | 4 | 4.00 | 3 | 5.33 |
| H14 | 2 | 3.00 | 4 | 6.50 | 3 | 7.33 | 7 | 4.71 | 3 | 5.33 | 3 | 5.33 |
| H15 | 1 | 6.00 | 6 | 4.33 | 4 | 5.50 | 8 | 4.13 | 4 | 4.00 | 4 | 4.00 |
| **Mean** | **1.13** | **5.60** | **4.80** | **5.91** | **3.67** | **6.33** | **6.73** | **5.03** | **3.67** | **4.66** | **3.13** | **5.28** |
| L01 | 1 | 6.00 | 4 | 6.50 | 4 | 5.50 | 15 | 2.20 | 4 | 4.00 | 3 | 5.33 |
| L02 | 1 | 6.00 | 3 | 8.67 | 6 | 3.67 | 12 | 2.75 | 7 | 2.29 | 5 | 3.20 |
| L03 | 1 | 6.00 | 10 | 2.60 | 7 | 3.14 | 12 | 2.75 | 4 | 4.00 | 3 | 5.33 |
| L04 | 1 | 6.00 | 7 | 3.71 | 3 | 7.33 | 7 | 4.71 | 5 | 3.20 | 3 | 5.33 |
| L05 | 1 | 6.00 | 3 | 8.67 | 3 | 7.33 | 6 | 5.50 | 4 | 4.00 | 2 | 8.00 |
| L06 | 2 | 3.00 | 13 | 2.00 | 8 | 2.75 | 16 | 2.06 | 4 | 4.00 | 4 | 4.00 |
| L07 | 1 | 6.00 | 8 | 3.25 | 5 | 4.40 | 10 | 3.30 | 3 | 5.33 | 5 | 3.20 |
| L08 | 1 | 6.00 | 7 | 3.71 | 9 | 2.44 | 9 | 3.67 | 5 | 3.20 | 6 | 2.67 |
| L09 | 1 | 6.00 | 4 | 6.50 | 3 | 7.33 | 7 | 4.71 | 2 | 8.00 | 2 | 8.00 |
| L10 | 1 | 6.00 | 6 | 4.33 | 5 | 4.40 | 7 | 4.71 | 2 | 8.00 | 5 | 3.20 |
| L11 | 1 | 6.00 | 5 | 5.20 | 6 | 3.67 | 13 | 2.54 | 7 | 2.29 | 6 | 2.67 |
| L12 | 1 | 6.00 | 5 | 5.20 | 2 | 11.00 | 6 | 5.50 | 2 | 8.00 | 3 | 5.33 |
| L13 | 1 | 6.00 | 8 | 3.25 | 7 | 3.14 | 6 | 5.50 | 7 | 2.29 | 4 | 4.00 |
| L14 | 1 | 6.00 | 8 | 3.25 | 8 | 2.75 | 12 | 2.75 | 6 | 2.67 | 7 | 2.29 |
| L15 | 1 | 6.00 | 5 | 5.20 | 3 | 7.33 | 5 | 6.60 | 2 | 8.00 | 4 | 4.00 |
| **Mean** | **1.07** | **5.80** | **6.40** | **4.80** | **5.27** | **5.08** | **9.53** | **3.95** | **4.27** | **5.13** | **4.13** | **4.44** |