ACQUISITION OF ENGLISH FRICATIVES BY THAI UNIVERSITY STUDENTS

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In teaching English, pronunciation-related research is considered vital as it can help inform educators or teachers of how to improve students’ pronunciation so that they can communicate better in English. This study, therefore, aimed to investigate how Thai undergraduates produced unmarked and marked English fricatives in word initial and final positions. The data were restricted to unmarked voiceless fricative /s/ and marked voiceless dental /θ/ collected from the students’ oral interviews. The findings revealed that the voiceless dental /θ/ in word initial and final positions caused tremendous difficulty to the participants; so did the voiceless fricative /s/ in the word final position. With the voiceless fricative /s/ in the initial position, the learners did not have any problems. The Markedness Differential Hypothesis (MDH), which predicted that the dental /θ/ would be mastered after the /s/, can give an explanatory account to the problematic sounds found. The research suggests that pronunciation instruction as well as English listening and speaking practices are useful in the sense that the students would be exposed to a great variety of language use. The results also help inform teachers of how to design a syllabus appropriate for their students having difficulty with English fricatives.

Keywords: Pronunciation, English fricatives, Markedness Differential Hypothesis (MDH)

Introduction

In second language acquisition (henceforth SLA), a number of researchers have attempted to explain how second language (hereafter L2) learners produce English sound segments. One of the most modern approaches examining L2 sound problems includes the Contrastive Analysis Hypothesis (CAH), which was initially introduced by Lado (1957). Of this approach, phonological features between two languages are compared. Lado believed that phonological similarities between two languages would help facilitate L2 learners, whereas differences would cause serious learning problems to them. However, several researchers argue that some phonological features absent in learners’ target language do facilitate their learning process. Selinker (1992), for example, supported that the CAH cannot fully account for some English problematic sounds produced by L2 learners. Selinker stated that the CAH could not predict whether Hebrew learners would substitute /t/ or /d/ for the English voiceless dental /θ/. Flege (1995) also argued for Selinker’s claim that some English sounds unavailable in learners’ native language seem not to be difficult for them. To put it differently, first language (L1) transfer might not play a crucial role in the acquisition of L2 phonology by speakers of different language backgrounds. Obviously, in attempts to explore how L2 learners acquire English sound segments, contrastive analysis might not be sufficient.

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Subsequently, an L2 phonology approach known as the Markedness Differential Hypothesis (henceforth MDH) was developed by Eckman (1977). Within this theory, two significant roles: language transfer and universal principles of markedness are accounted for. In terms of L1 transfer, the MDH predicts that any linguistic structure considered more marked than it is available in the native language is difficult for L2 learners to acquire, whereas any linguistic feature considerably unmarked in the native language is predicted to be relatively easy for them. When universal markedness principles are taken into consideration, the MDH predicts that L2 learners will find unmarked grammatical structures easier than marked.

In L2 phonology acquisition, several scholars have attempted to examine what English fricatives pose great difficulty to L2 learners. For example, Jehma and Phoocharoensil (2014) conducted a study into L1 transfer in the acquisition of English fricatives by Thai Pattani-Malay learners. In their cross-sectional investigation, the participants were encouraged to produce English fricatives such as /s/ and /θ/ orally. The results showed that these students found English fricatives difficult. They substituted /z/, /θ/, and /ʃ/ for English /s/ in the syllable initial position. In the syllable final position, the participants replaced /s/ with /θ/, /k/, and /w/. Since the fricative /s/ is absent in the learners’ sound system, Jehma and Phoocharoensil concluded that L1 transfer was the majority of the phonological errors found in their participants learning English as a foreign language (EFL).

As previously introduced, it is obvious that L2 learners find English fricatives difficult. In addition, the CAH alone cannot fully account for phonological errors found in L2 learners because some L2 learners do not find sounds unavailable in their L1 difficult to acquire. As such, to see a clearer picture of how Thai undergraduate students produced English fricatives, this study was conducted based on the MDH. Also, this investigation was conducted in the hope that the results obtain would help provide scholars or educators with theoretical explanations for phonological errors found in L2 learners.

Literature Review

This section begins with the Markedness Differential Hypothesis (MDH), mainly used as the framework of this present study, and this is followed by previous studies concerning L2 phonological acquisition.

In L2 phonology acquisition, Davidson (2006) proposed that the CAH alone cannot be a good predictor of sound segments acquired by L2 speakers. Hansen (2004) also supported that a few pronunciation errors directly result from L1 transfer. Obviously, the CAH is not a preferable theoretical framework in explaining Thai learners’ acquisition of English fricatives. In order to fully understand their L2 phonological development, the MDH is favored and presented below.
Markedness Differential Hypothesis (MDH)

Since the CAH cannot truly account for phonological errors committed by L2 learners and the relative degree of phonological difficulty, the MDH, a new theoretical framework, is proposed and discussed here. The MDH as formulated by Eckman (1977) can be defined as follows.

1. Linguistic features of learners’ target language which are different from those of their native language will be difficult for them to master. In other words, learners’ L2 linguistic structures that are more marked than their L1 structures will be difficult.

2. L2 learners will produce unmarked linguistic features more easily than marked ones. That is, the MDH predicts that learners will acquire unmarked linguistic structures in their target language before marked.

In the present research, the concept of markedness is targeted because the findings obtained might help explain why a certain phonological feature is acquired before others. In addition, Anderson (1987), who determined English syllable structures among learners with different linguistic backgrounds, supports that L1 transfer itself is not sufficient to explain difficulty in L2 learning. Rather, other contributing determinants inherent in the target language might present problems to L2 learners. He also states that the MDH is more flexible to explain L2 difficulty. The MDH, therefore, should be considered a better explanation for phonological difficulty among Thai EFL learners since it takes the role of L1 transfer and the principle of markedness into account.

In L2 phonology acquisition, a number of studies focus mainly on how sounds are acquired by L2 speakers with different socio-linguistic backgrounds. Kitikanan and Al-Tamimi (2012), for instance, investigated whether Mandarin sounds that were phonologically similar to Thai sounds were easier to acquire than sounds that have no L1 counterparts. The participants included three native Thai and two native Mandarin speakers. In collecting the data, the researchers asked the participants to perform a picture-naming task orally. The results revealed that the participants produced fricatives /s/ and /f/ with 100% accuracy. In Thai and Mandarin sound systems, both /s/ and /f/ do exist. The participants, therefore, acquired these two sounds with ease. This empirical evidence supports that similar linguistic structures between the native and target languages would cause less difficulty to L2 learners, whereas different structures seem to cause trouble to them. The results suggest that the CAH as proposed by Lado (1957) might have been an effective tool that could predict the areas of phonological difficulty among these participants.

In line with the same research, Rau, Chang, and Tarone (2009) studied the acquisition of English interdental fricative /θ/ by Chinese speakers. The researchers aimed to provide an accurate multivariable account for variation patterns in the acquisition of English fricative /θ/ by two groups of Chinese and Taiwanese
participants. The acceptability of four possible substitutions for the variable /θ/ and four oral production tasks were administered to the participants. The results revealed that both the Taiwanese and Chinese learners substituted sounds such as /s/, /ʃ/, /d/, and /t/ for /θ/, confirming that L1 transfer might have played an important role in their acquisition of English fricative /θ/.

Jehma and Phoocharoensil (2014), investigating the acquisition of English fricatives by Thai Pattani-Malay L1 speakers, also supported that L1 transfer plays a crucial role in phonological acquisition by L2 speakers of English. In their research, the participants were required to perform two research tasks: word-list reading and sentence-list reading. The findings showed that the learners had problems with English fricatives such as /s/ and /θ/. They were found to replace dental /θ/ with /t/ and /d/ in the word initial position. In the word final position, the participants substituted /θ/, /d/, /s/, and /ʃ/ for /θ/. The result of the fricative /s/ showed that the students replaced /s/ in the word initial position with /ʃ/, /tʃ/, and /z/, respectively. In the word final position, the participants produced /ʃ/, /d/, and /w/ to replace /s/. In addition, the results revealed that the /s/ was acquired more easily than the /θ/, confirming that the relative degree of phonological difficulty corresponded to the relative degree of markedness. In the participants’ phonology, only the fricative /s/ is permitted in the word initial position, whereas the /θ/ is not allowed in both syllable initial and final positions. Based on the findings, it is obvious that the participants acquired the /s/ more easily than the /θ/. This evidence clearly supports that the MDH can be an effective predictor of English sound segments acquired by L2 speakers.

Kanokpermpoon (2007) also reported that Thai learners are likely to replace the fricative /s/ with /t/ in the word final position. For the fricative /ʃ/, Thai students substitute /t/ in word initial and final positions. He also proposed that Thai students have tremendous difficulty pronouncing these fricatives as they are absent in Thai phonology. Thus, English fricatives seem to be difficult for Thai students to acquire.

It is clear that L2 learners have difficulty acquiring English fricatives such as /s/ and /θ/. That is to say, they are not able to acquire English fricatives with ease. In addition, past related research depended largely on the role of L1 transfer rather than the role of markedness or other determinants. As such, to help clarify how Thai learners acquired English fricatives, the present study was conducted based on the MDH.

**Research Questions**

The present research aims to answer the following questions:

1. Which English fricative do Thai undergraduate students find problematic?
2. What are Thai learners’ substitutions for English fricatives?
3. Based on the MDH, how does the relative degree of phonological difficulty of Thai students correspond to the relative degree of markedness?
To further explain Question 2.3, English /θ/ is considered more marked than /s/ for Thai students. In Thai, /s/ is allowed in the word initial position, whereas /θ/ is not. In the word final position, both /s/ and /θ/ are not permitted in Thai phonology. Accordingly, /s/ was predicted to be acquired before /θ/ in both word initial and final positions. In other words, /s/ in word initial and final positions would be easier than /θ/ in the same positions for Thai students to acquire.

Methodology

Participants

In this study, the participants were 20 second–year Thai undergraduate students majoring in Art History at the Faculty of Archaeology of Silpakorn University. When the study was conducted, they were taking the English Communication Skills class with the researcher. The purpose of this course aimed to encourage the students to effectively use four English skills: listening, speaking, reading, and writing in everyday life.

Research Instrument

In this study, the research instrument administered was an oral interview task in which the participants were required to produce the target sounds naturally. To further explain, the oral interview task consisted of two parts. In the first part, the informants had to introduce themselves briefly in English. The first part of the task was targeted because the researcher wanted to make the participants feel relaxed before they started talking about their prepared topics. In the second part, the task required the students to talk about a topic related to natural disaster or historical events that was important to their life, their country, or the world. In order to help the students produce the target sounds as many as possible, the researcher informed them of the required topics one week in advance. During the oral interview, each participant was asked some issues that were not clearly explained. For example, one student who talked about Alzheimer was asked what early Alzheimer was. In the study, this data collection method was considered an effective way of encouraging the students to produce the target sounds as many as possible.

In brief, the oral interview task administered in this study was divided into two sessions. In the first session, general questions such as the participants’ hobbies and interests were asked. In the second part, the participants were required to talk about important events previously assigned by the researcher. In their important events, topics such as natural disaster and important historical figures were mentioned. While the students were talking about their stories, the sounds produced were recorded. In the study, the oral interview task was targeted as the data obtained were considered more natural when compared with others such as word-list and sentence-list reading tasks. Also, the data obtained from the oral interview task
would help give a clearer picture of how the participants produced English fricatives. In the present study, only two English fricatives: /s/ and /θ/ in word initial and final positions were studied. For example, the fricative /θ/ occurs in the initial position of the word think was targeted. After the students’ speech data were collected, the researcher asked three English lecturers to examine whether a particular target sound was produced accurately. This research instrument was considered valid as it could trace the natural sounds targeted in the study, and the speech data obtained from the participants could be analyzed based on Wilcoxon Signed Rank Test and Friedman Test.

**Data Collection and Analysis**

The students’ oral data were collected through an obligatory occasion method, which was adapted from Brown’s (1973) research into children’s morphological acquisition through spontaneous speech. To make certain that the participants are able to fully acquire a particular sound segment, they are required to produce such a phoneme with 80% accuracy. This criterion of phonological acquisition was adopted from several L2 phonology researchers, e.g. Andersen (1978) and Eckman (1991). To make sure that the results obtained were reliable, three English lecturers were asked to identify errors committed by the participants, and least two of whom had to show agreement with the sounds analyzed. This method aimed to make certain that the findings received had the instrument reliability.

**Results**

This section reports the findings of English fricatives shown by the Thai participants. The results include three aspects: English fricatives the students found problematic, sounds that the students replaced the target English fricatives, and the relationship between the relative degree of difficulty and the relative degree of markedness. In the present study, two fricatives /s/ and /θ/ in word initial and final positions were studied, and three research questions were formulated. In order to address the first research question *which English fricative do Thai undergraduate students find problematic?*, Wilcoxon Signed Rank Test was performed, whereas to answer the third research question *Based on the MDH, how does the relative degree of phonological difficulty of Thai students correspond to the relative degree of markedness*, Friedman Test was conducted. To further explain, Wilcoxon Signed Rank Test was conducted to figure out which English fricative caused difficulty to the participants, while Friedman Test was carried out to see how the relative degree of phonological difficulty of the Thai participants corresponded to their relative degree of markedness.

For convenience, this part is organized as follows. In Table 1, the results of difficult fricatives are presented based on Wilcoxon Signed Rank Test. In Tables 2 and 3, examples of the words analyzed are demonstrated. Table 4 presents statistical...
evidence of how the relative degree of phonological difficulty corresponded to the relative degree of markedness among the Thai participants.

To examine whether the target fricatives caused difficulty to the participants, the speech data were statistically analyzed, and two hypotheses $H_0: \mu = 0.80$ and $H_1: \mu < 0.80$ were formulated based on Wilcoxon Signed Rank Test. More importantly, $H_0: \mu = 0.80$ means that the median of a particular sound is equal to 0.08, whereas the $H_1: \mu < 0.80$ means that the median of a particular sound is lower than 0.08. In both $H_0$ and $H_1$, the number 0.80 was statistically formulated based on the 80% criterion, which was set as a threshold of acquisition. If no variable reaches the 80% level, this implies that such the form poses great difficulty to learners.

$H_0: \mu = 0.80$ is accepted when the p-value of a particular sound is higher than $\alpha (0.05)$, whereas $H_1: \mu < 0.80$ is accepted when the p-value of the same sound is lower than $\alpha (0.05)$. If $H_0$ is accepted, it means that a particular sound is used with at least 80% accuracy, and the implication is that this target sound does not pose tremendous difficulty to the participants. If $H_1$ is favored, it means that one particular sound segment is not applied with 80% accuracy, and this implies that the participants have difficulty using it. Table 1 reveals the results of fricatives /s/ and /θ/ in both word initial and final positions.

### Table 1: Production of Fricatives /s/ and /θ/ in Word Initial and Final Positions

<table>
<thead>
<tr>
<th>Sounds</th>
<th>Number of Participants</th>
<th>Wilcoxon Statistics</th>
<th>P-Value</th>
<th>Estimated Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>/s/ in word initial position</td>
<td>20</td>
<td>210.0</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>/s/ in word final position</td>
<td>20</td>
<td>61.5</td>
<td>0.04</td>
<td>0.75</td>
</tr>
<tr>
<td>/θ/ in word initial position</td>
<td>20</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>/θ/ in word final position</td>
<td>20</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Table 1 shows that the fricative /s/ in the word initial position did not cause difficulty to the Thai participants at the level of significance $\alpha = 0.05$ (p-value (1.00) > $\alpha (0.05)$; $H_0$ is accepted). In the word final position, the students found the /s/ problematic at the significance level $\alpha = 0.05$ (p-value (0.04) < $\alpha (0.05)$; $H_1$ is accepted). In terms of the dental /θ/, the Thai participants were not able to produce it in both word initial and final positions at the level of significance $\alpha = 0.05$ (p-value (0.00) < $\alpha (0.05)$; $H_1$ is accepted).

In short, the Thai participants produced only the fricative /s/ in the word initial position with ease, whereas they had difficulty using the /s/ in the word final position and the /θ/ in both word initial and final positions.

In relation to the second research question, the results reveal that the Thai learners were found to replace the fricative /s/ in the word final position with either /d/ or /t/ in English. Also, they appeared to substitute the stop /t/ for the fricative /
\( \theta \) in the word initial position. For the fricative /\( \theta \)/ in the syllable final position, the sounds /s/, /h/, and /d/ were found to be substituted. To help clarify which fricative the students produced incorrectly, examples of the words analyzed are presented in Tables 2 and 3 as well. In Table 2, the example words having the /s/ in both initial and final positions are demonstrated, whereas those which begin and end with the fricative /\( \theta \)/ are shown in Table 3.

**TABLE 2: EXAMPLES OF THE ANALYZED WORDS WITH INITIAL AND FINAL /s/**

<table>
<thead>
<tr>
<th>Words with initial /s/</th>
<th>Words with final /s/</th>
</tr>
</thead>
<tbody>
<tr>
<td>search</td>
<td>rice</td>
</tr>
<tr>
<td>some</td>
<td>place</td>
</tr>
<tr>
<td>subject</td>
<td>famous</td>
</tr>
<tr>
<td>senior</td>
<td>decrease</td>
</tr>
<tr>
<td>semester</td>
<td>serious</td>
</tr>
</tbody>
</table>

As shown in Table 2, the words with the initial /s/ such as search, some, subject, senior, and semester produced by the participants were analyzed. Also, the words with the final /s/ such as rice, place, famous, decrease, and serious were analyzed in the present study.

**TABLE 3: EXAMPLES OF THE ANALYZED WORDS WITH INITIAL AND FINAL /\( \theta \)/**

<table>
<thead>
<tr>
<th>/( \theta )/ in word initial position</th>
<th>/( \theta )/ in word final position</th>
</tr>
</thead>
<tbody>
<tr>
<td>think</td>
<td>earth</td>
</tr>
<tr>
<td>thousand</td>
<td>death</td>
</tr>
<tr>
<td>third</td>
<td>fourth</td>
</tr>
<tr>
<td>thing</td>
<td>month</td>
</tr>
<tr>
<td>thank</td>
<td>math</td>
</tr>
</tbody>
</table>

Table 3, the English /\( \theta \)/ in the word initial position of such the words as think, thousand, third, thing, and thank were analyzed. In addition, the dental /\( \theta \)/ in the final position of the words earth, death, fourth, month, and math were analyzed in the study.

To answer the third research question *Based on the MDH, how does the relative degree of phonological difficulty of Thai students correspond to the relative degree of markedness*, the findings are presented in Table 4. To put it differently, the third research question aimed to investigate whether the Thai participants could acquire an unmarked or more natural fricative more easily than a marked or less natural. Therefore, we performed Friedman Test, which could inform us of which fricative is acquired before others. In an attempt to examine whether an individual sound is acquired before others, it is necessary for us to formulate two hypotheses: H0: the mean scores of the target sounds are the same and H1: there are at least two mean scores of the target sounds are not the same. To put it another way, H0 indicates
that the relative degree of phonological difficulty does not correspond to the relative degree of markedness, whereas H1 means that the relative degree of difficulty corresponds to the relative degree of markedness.

In this study, H0 is accepted when the Asymp. Sig of each individual sound is higher than the significant level $\alpha = 0.05$, whereas H1 is accepted when the Asymp.Sig of a particular sound is lower than the significant level $\alpha = 0.05$. Table 4 presents the statistical evidence for the third research question.

### Table 4: The Relationship Between the Relative Degree of Difficulty and Markedness

<table>
<thead>
<tr>
<th>Sounds</th>
<th>Number of Participants</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Asymp.Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>/s/ in word initial position</td>
<td>20</td>
<td>1.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>/s/ in word final position</td>
<td>20</td>
<td>0.73</td>
<td>0.18</td>
<td>0.00</td>
</tr>
<tr>
<td>/θ/ in word initial position</td>
<td>20</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>/θ/ in word final position</td>
<td>20</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

It can be seen from Table 4 that the English fricative /s/ in the word initial position was acquired before that in the word final position at the significance level $\alpha = 0.05$ (Asymp. Sig (0.00) < $\alpha$ (0.05); H1 is accepted). Also, the fricative /s/ in both word initial and final positions was acquired before the dental /θ/ in the same positions at the significance level $\alpha = 0.05$ (Asymp. Sig (0.00) < $\alpha$ (0.05); H1 is accepted). From Table 4, it is obvious that the mean score of the dental /θ/ in the word initial position is the same as that in the word final position. Therefore, we can say that the /θ/ in both word initial and final positions was acquired relatively in the same stage.

In brief, based on the statistical evidence, the Thai participants acquired the /s/ in the word final position before the /s/ in the word final position. Additionally, they acquired the /s/ in both word initial and final positions before the dental /θ/ in the same positions. In both word initial and final positions, the fricative /θ/ was acquired in the same stage of development. To put it differently, the /s/ in both word initial and final positions was acquired in the early stage, whereas the dental /θ/ in the same positions was acquired in the latter stage of development. The results also suggest that based on the MDH, the relative degree of phonological difficulty of the Thai EFL students corresponded to the relative degree of markedness. That is, the MDH could predict that the unmarked fricative /s/ in both word initial and final positions was acquired before the marked dental /θ/ in English.

**Discussion**

In this section, a theoretical discussion based on the findings obtained is presented, and this is followed by pedagogical implications. Finally, recommendations for further studies as well as a conclusion are intended.
Based on the findings, the Thai university participants had difficulty producing English fricatives. The voiceless dental /θ/ in word final and word initial positions caused serious difficulty to the students. In the word final position, the alveolar fricative /s/ was found problematic for the learners as well. The Thai participants found only the alveolar /s/ in the syllable initial position easy to acquire. This suggests that L1 transfer might have played a significant role in the learners’ phonological acquisition. More specifically, in Thai phonology, the /s/ is allowed only in the word initial position. The Thai students, therefore, were able to produce the /s/ in the word initial position quite well. In the word final position, the /s/ is not permitted. Based on the results previously presented, the participants were not able to master the /s/ in the syllable final position. The fact that the EFL participants were not able to fully acquire the fricative /s/ has been supported by Jehma and Phoocharoensil (2014). In their investigation, English fricatives such as /s/ and /θ/ posed tremendous difficulty to Thai Pattani-Malay L1 speakers. They proposed that L1 transfer played a major role in the participants’ acquisition process. Kanokpermpoon (2007) also supported that negative transfer seems to play a significant role in the acquisition of fricative sound segments by Thai speakers of L2 English. He reported that most Thai EFL learners find the /s/ in the word initial position and the dental /θ/ in both word initial and final positions difficult to produce.

Clearly, the Thai students had problems producing English fricatives. This theoretical evidence has been supported by L2 phonology researchers, such as Jehma and Phoocharoensil (2014) and Kanokpermpoon (2007).

In addition to the problem sounds produced, the Thai undergraduates were found to replace /s/ with /t/ or /d/ in the word final position. This finding has been supported by several L2 phonology researchers, such as Kanokpermpoon (2007), who reported that Thai learners of L2 English seem to replace /s/ in the word final position with /t/.

As for the English fricative /θ/, the participants were not able to acquire it in word initial and final positions. The participants replaced /θ/ in the word initial position with /θ/ in English, whereas they substituted English /l/, /d/, and /f/ for /θ/ in the word final position. The results of the fricative /θ/ in word initial and final positions conform to the results revealed by Kanokpermpoon (2007), indicating that Thai speakers tend to replace /θ/ with /θ/ in L2 English. Apart from this, Jehma and Phoocharoensil (2014) proposed that learners of L2 English are found to substitute /l/ and /d/ for dental /θ/. This theoretical evidence supports that interference from the learners’ native language has played an important role in their acquisition process. In short, the Thai undergraduates had great difficulty producing English fricatives. They were found to replace /s/ with /t/ or /d/ in the word final position. For the English fricative /θ/ in the word initial position, /θ/ was substituted. In the syllable final position, /θ/, /d/, and /f/ were substituted for /θ/.
In the present study, the MDH can also be an effective tool in predicting the participants’ sound problems. Based on the MDH, two predictions were made. Firstly, the MDH predicted that the /s/, which was unmarked, would be acquired more easily than the voiceless marked /θ/ in English. This prediction is supported according to the findings presented. In both syllable initial and final positions, the fricative /s/ was mastered more easily than the voiceless dental /θ/. Of the MDH, the second prediction was that the relative degree of phonological difficulty would correspond to the relative degree of markedness. From the results, the participants produced the unmarked /s/ more easily than marked /θ/ in word initial and final positions. To put it differently, the /s/ in the word initial and final positions was mastered before the /θ/ in the same positions even though the /s/ in the word final position was problematic for the Thai participants. The study suggests that the MDH be effective in predicting the Thai students’ phonological acquisition process. This theoretical evidence has been supported by Eckman (1977), who proposed that unmarked fricatives would be easy for L2 learners to acquire, and L2 learners would acquire unmarked fricatives before marked.

In brief, the Thai learners had problems producing English fricatives. They found dental /θ/ in word initial and final positions difficult to acquire. In relation to alveolar fricative /s/, the participants found it difficult in the word final position, whereas they did not find it problematic in the word initial position. This theoretical evidence has been supported by Jehma and Phoocharoensil (2014), who proposed that English fricatives such as /s/ and /θ/ are problematic for L2 learners. Apart from the problematic sounds, the Thai learners were found to substitute /t/ or /d/ for /s/ in the word final position. In the word initial position, /t/ was substituted for /θ/, while English /θ/ was replaced with /t/, /d/, and /tʃ/ in the word final position. These findings have been supported by several L2 phonology researchers, such as Kanokpermpoon (2007) and Jehma and Phoocharoensil (2014). In addition, the MDH, as proposed by Eckman (1977), can be an effective tool in helping predict the acquisition of English fricatives by the Thai participants. In other words, the MDH can predict that /s/, which is considered unmarked or more natural to the learners, would be acquired more easily than voiceless marked /θ/ in English. Also, the results revealed that /s/ in both word initial and final positions were acquired before /θ/ in the same positions. The theoretical findings previously shown have been supported by Eckman (1977), who proposed that unmarked phonological features are easier than marked for L2 learners, and they would acquire unmarked features before marked.

**Pedagogical Implications**

Some English teachers or educators might argue that pronunciation instruction is not required for L2 learners. However, the findings have shown that the Thai undergraduates were not able to produce the voiceless dental /θ/ in syllable initial
and final positions. Also, they found the voiceless /s/ problematic in the word final position. This evidence posits that English pronunciation instruction is necessary in Thai schools or universities. This suggestion has been supported by several scholars. For example, Wong (1987) postulated that L2 learners have difficulty communicating in English successfully if they produce English sounds incorrectly. Morley (1991) also supported that English pronunciation instruction is necessary in English classes. According to Wei and Zhou (2002), English pronunciation is neglected in some schools or universities in Thailand. In order to help Thai students master English sounds better, Scarcella and Oxford (1994) suggested that English pronunciation classes be integrated with a great variety of communicative activities. Clearly, English pronunciation is essential for L2 learners. In order to help Thai EFL learners achieve their communication goals better, English pronunciation instruction is considered necessary in schools or universities.

In short, the present study aimed to investigate which English fricative caused difficulty to Thai undergraduate students, and what sounds were substituted for English fricatives /s/ and /θ/ in word initial and final positions. The research also aimed to examine how the relative difficulty of English phonological difficulty corresponded to the relative degree of markedness. The participants included 20 second-year undergraduate students. In collecting the data, the students had oral interviews with the researcher. They were assigned to talk about any topics related to natural disaster or important historical figures. After the students’ speech data were collected, three English language lecturers were asked to help identify their phonological errors. From the findings obtained, the Thai university students had difficulty acquiring dental /θ/ in syllable initial and final positions. The results also demonstrated that the Thai participants were not able master the voiceless /s/ in the syllable final position. Only in the word initial position, the university students were able to acquire the fricative /s/ with ease. Furthermore, the relative degree of phonological difficulty of the Thai undergraduate students conformed to the relative degree of markedness. That is, the MDH can be an effective predictor of phonological acquisition by L2 speakers of English. From the findings, the Thai students acquired the /s/ before the dental /θ/, confirming that the MDH has played a key role in the acquisition of the English fricatives by the Thai EFL speakers. Apparently, the participants had problems producing English fricatives. To help these students produce the problematic sounds better, formal English pronunciation instruction is required. Educators or teachers who deal with these learners may provide them with simple concepts and then encourage them to practice the problematic sounds in a wide variety of communicative situations.

In further related research, investigating acquisition of English fricatives by learners from different linguistic backgrounds is recommended. This can help educators or scholars see a clearer picture of how L2 learners acquire English fricatives during their acquisition process. In this present study, only two English
fricatives /s/ and /θ/ in word initial and final positions were studied. In the future, studying other fricatives such as /z/, /ʃ/ and /v/ is, therefore, suggested. Related research using other theoretical frameworks, such as a variationist framework employed in Rau, Chang, and Tarone’s (2009) research, should be conducted.

References