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## Using Thai lexical tones to improve Thai learners' Korean stop consonants pronunciation

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### Abstract

The research aims to study the use of lexical tones in Thai in improving the pronunciation of the Korean stop consonants for Thai learners. This is a quantitative research. There are two tests for fifteen participants Thai university students, who completed *First Step Korean*, an elementary-level Korean language MOOC (massive open online course) on *Coursera*, Each one contains nine Korean monosyllabic words with lax, aspirated, and tense initials. Their syllable structures comprise of initial consonant, vowel, and final consonant (CVC). Test 1 is given in Korean alphabets with their English meaning. Test 2 is given in Thai transliteration. Test 3 is for three native speakers of Korean to evaluate whether each Thai speaker correctly pronounce the word list. The results reveal that Thai speakers tend to have problems with Korean words with aspirated initials. Most of the Korean words with aspirated initials are evaluated by the native speakers as incorrect ( $\bar{x} = 6.67\%$ ). On the other hand, the performance of Thai speakers for Korean words with lax and tense initials are all correct as judged by the native speakers ( $\bar{x} = 100\%$ ).

**Keywords** Korean stop consonants, pronunciation teaching, Thai tones





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2013;), a physical property of sound parameter reflecting the rate of vocal chords vibration which perceived as pitch. Aspirated stops have higher  $F_0$  and lax stops have lower  $F_0$ . This means aspirated stops correlate with a higher pitch and lax stops correlate with a lower pitch. The acoustic parameter,  $F_0$ , which correlates to pitch, can be applied in teaching pronunciation of Korean stops. The aspirated /p<sup>h</sup> t<sup>h</sup> k<sup>h</sup>/ can be explained by putting together /p<sup>h</sup>/ coupled with higher pitch [H] and lax /p t k/ can be explained by putting together /p<sup>h</sup>/ with lower pitch [L]. This can help Thai learners to distinguish these two sets of stop consonants both perceiving and producing them.

Korean		Thai
/p*/	—————	/p/ + [H]
/p‘/	—————	/p <sup>h</sup> / + [L]
/p <sup>h</sup> /	—————	/p <sup>h</sup> / + [H]

This research proposes the utilizing of tone in Thai in improving the pronunciation of the Korean stop consonants.

## Objective

To study the utilizing of tone in Thai in improving the pronunciation of the Korean stop consonants for Thai learners.

## Research scope

### 1. Participants

15 Thai university students, who completed *First Step Korean*, an elementary-level Korean language MOOC (massive open online course) on *Coursera*, provided by Yonsei University, covers 4 skills: reading, writing, listening and speaking. All participants must be literate in Korean.

### 2. Research duration

The duration of research is 3 months from August 2020 – October 2020.

## Methodology

### 1. Research Methodology

This research is a quantitative research to study the utilizing of tone in Thai in improving the pronunciation of the Korean stop consonants for Thai learners.



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## 2. Research process

### *Test 1:*

The word list in Test 1 contains nine Korean monosyllabic words. Their syllable structures comprise of initial consonant, vowel, and final consonant (CVC). They are written in Korean alphabets with their English meaning in single quotation marks. There are three groups of words whose the initial consonants are different on three manners of articulation, which are lax, aspirated, and tense, and three points of articulation, which are bilabial, alveolar, and velar. The first group contains three words in the minimal pairs of bilabial lax, aspirated, and tense stop consonants in the initial position. The second group contains three words in the minimal pairs of alveolar lax, aspirated, and tense stop consonants in the initial position. The third group contains three words in the minimal pairs of velar lax, aspirated, and tense stop consonants in the initial position. The vowels of the first and third group are close back vowel /-u-/; but the vowels in the second group are an open front vowel /-a-/ due to the lack of the identical vowel for every minimal pairs set available.

	Bilabial	Alveolar	Velar
Lax (slightly aspirated)	p <sup>ʰ</sup> ul 'fire'	t <sup>ʰ</sup> al 'moon'	k <sup>ʰ</sup> ul 'oyster'
Aspirated	p <sup>h</sup> ul 'grass'	t <sup>h</sup> al 'mask'	k <sup>h</sup> ul 'to be cool'
Tense (unaspirated)	p*ul 'horn'	t*al 'daughter'	k*ul 'honey'

### *Test 2:*

The word list in Test 2 contains nine identical words with Test 1. They are written in Thai transliteration with the application of Thai tones along with their English meaning in single quotation marks. In applying Thai tones, a syllable with Korean initial lax consonants are associated with Thai mid tone whereas a syllable with Korean initial aspirated or tense consonants are associated with Thai falling tone, according to the acoustic similarities between Thai tones and the pitch contour in Korean monosyllabic words. Thai consonants are divided into three classes – high, mid and low. The class of the initial consonant is one factor in determining the tone of a syllable. A single sound can be represented with two or more symbols from different classes.



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/p<sup>h</sup>-/ <ผ> (high class)  
 <พ> <ภ> (low class)  
 /k<sup>h</sup>-/ <ข> <ช> (high class)  
 <ค> <ก> <ฌ> (low class)

The tone of a syllable is determined by a combination of the type of syllable (live or dead), the class of the initial consonant (high, medium or low), and the length of the vowel (long or short) (Smyth, 2014). In other word, each class of consonant symbols follows its own pattern of tone marking. Thai live syllable of each consonants class and tone marks produce the following tones:

Initial consonant	No mark	Mái èk ( ' )	Mái too ( ้ )
Low class	Mid tone	Falling tone	High tone
Mid class	Mid tone	Low tone	Falling tone
High class	Rising tone	Low tone	Falling tone

Thai has five contrastive tones: High, mid, low, rising, and falling (Abramson, 1962, 1975; Gandour, 1981). Of these, only mid is phonetically level (Morén & Zsiga, 2006; Perkins, 2013)

Each participant is to read each word three times aloud.

*Test 3:* Evaluation form of pronunciation judgment

The answers of the perception test will be given score as follows:

Evaluation score:

- 1 correct manner
- 0 wrong answer

### 3. Data collection

*Test 1:*

1. Each participant reads a list of nine Korean words written in Korean alphabets in isolation three times.
2. Record the pronunciation of one participant at a time.



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#### *Test 2:*

After finishing Test 1, participants continue to read Test 2

1. Each participant reads a list of nine Korean words written in Thai transliteration with the application of Thai tones in isolation three times.
2. Record the pronunciation of one participant at a time.

#### *Test 3:*

The researcher plays the recording of the students to three Korean native speakers of Standard Korean. All three Korean native speakers listen to the recordings at the same time. The perception test is presented in a silent room via loudspeaker. The stimuli are repeated two times for each word. The judges write down all nine heard words in Korean alphabet.

#### **4. Data Analysis**

The researcher employs percentage on each word.

#### **Results**

The evaluation results of pronunciation judgment of test 1 by three native speakers are shown separately in Table 1 – Table 3. The performance of Thai speakers for Korean words with aspirated initials is almost unanimous. Most Korean words with aspirated initials are evaluated by the native speakers as incorrect correct answer ( $\bar{x} = 6.67\%$ ). On the other hand, the performance of Thai speakers for Korean words with lax and tense initials are all correct as judged by the native speakers.



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**Table 1: Test 1 Evaluation form of Judge 1**

	Item	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
1	불 'fire'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	탈 'mask'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	꿀 'honey'	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
4	풀 'grass'	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	딸 'daughter'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	쿨 'to be cool'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	뿔 'horn'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	달 'moon'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	굴 'oyster'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

**Table 2: Test 1 Evaluation form of Judge 2**

	Item	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
1	불 'fire'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	탈 'mask'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	꿀 'honey'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	풀 'grass'	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	딸 'daughter'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	쿨 'to be cool'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	뿔 'horn'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	달 'moon'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	굴 'oyster'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1



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**Table 3: Test 1 Evaluation form of Judge 3**

	Item	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
1	불 'fire'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	탈 'mask'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	꿀 'honey'	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1
4	풀 'grass'	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	딸 'daughter'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	쿨 'to be cool'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	뿔 'horn'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	달 'moon'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	굴 'oyster'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

The evaluation results of pronunciation judgment of Test 2 by three native speakers are shown separately in Table 4 – Table 6. The problematic performance of Thai speakers for Korean words with aspirated initials is resolved as can be seen from the judgment of three native speakers ( $\bar{x} = 100\%$ ). The performance of Thai speakers for Korean words with lax and tense initials is all correct as judged by the native speakers as the same with Test 1.

**Table 4: Test 2 Evaluation form of Judge 1**

	Item	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
1	불 'fire'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	탈 'mask'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	꿀 'honey'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	풀 'grass'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	딸 'daughter'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	쿨 'to be cool'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	뿔 'horn'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	달 'moon'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	굴 'oyster'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1



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Table 5: Test 2 Evaluation form of Judge 2

	Item	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
1	불 'fire'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	탈 'mask'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	꿀 'honey'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	풀 'grass'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	딸 'daughter'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	쿨 'to be cool'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	뿔 'horn'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	달 'moon'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	굴 'oyster'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Table 6: Test 2 Evaluation form of Judge 3

	Item	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
1	불 'fire'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	탈 'mask'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	꿀 'honey'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	풀 'grass'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	딸 'daughter'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	쿨 'to be cool'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	뿔 'horn'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	달 'moon'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	굴 'oyster'	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

## Discussion

The study shows that Thai speakers have difficulty pronouncing Korean words with aspirated initials when written in Korean alphabet. The three native speakers agree that the performance of the Thai speakers mislead them to other words. All Korean words with aspirated initials in all three places of articulation are mispronounced. On the other hand, the performance of Thai speakers for Korean words with lax and tense initials when written in Korean alphabet are all correct as judged by the native speakers. It can be concluded that Thai speakers cannot discern Korean words with aspirated initials with their lax counter parts. However, when given the Thai transliteration, the problematic performance of Thai speakers for Korean words with aspirated initials is resolved as can be seen from the judgment of three native speakers.



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## Suggestions

The researchers' suggestions are as follows:

1. The Korean language educators for Thai learners can apply this method to teach Thai native speakers to pronounce Korean aspirated consonants correctly and not to be confused with their lax counterparts.

2. As for the future research in on this matter, acoustic phonetic analysis and comparison between the pitch of Korean words with stop, fricative, and affricate initials and Thai tones will provide even more precise evidence and judgment.

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