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Counteracting Korean English Learners' Epenthesis of the Vowel [ɨ]*

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Abstract

Korean does not allow consonant clusters in either onsets or codas, and Korean learners of English tend to epenthesize to break up these clusters (Brasington 1981). Recent works indicate that orthography influences L2 phonology (Bassetti 2008, Coutsougera 2007, Young-Scholten et al. 1999). The study aimed to reduce Korean L2 English learners' vowel epenthesis by manipulating Korean orthography. To explore this idea, experimental material was developed which involved presentation to learners of English words written in Korean with the grapheme that represents an epenthetic vowel, usually [ɨ], removed. For example, the two-syllable English word 'pretty [prɪ.ti]' becomes tri-syllabic in Korean-English pronunciation, i.e. [pɨ.rɪ.ti]. In the experiment, English words were in Korean, but in a manipulated way: instead of <프.리.티> the <ㅡ>: [ɨ] was removed resulting in <프리[prɪ].티[ti]>.

Thirty middle school students aged 13 participated, and were divided into an experimental and a control group. The experiment was conducted during the 10 minute warm-up session of students' classes, fifteen times for five weeks. For each session, five words were presented to the experimental group. A pre- and post-test involving oral production was conducted and recorded. Two methods of analysis were used to validate the methodology: one for counting the instances of epenthesis and the other for ratings by native-speaker judges

* This paper is partly based on my Master's dissertation.

who rated the participants' samples for fluency and comprehensibility. Results showed 14.99% decrease by the experiment group and 3.59% increase by the control group of epenthesis, and a small but significant improvement in comprehensibility, but not in fluency by experimental group but no changes in ratings for the control group. This suggests that using representation of the L2 in learners' native phonology language might positively influence their L2 phonology, but a delayed post-test would be required to confirm this.

Korean does not allow consonant clusters in either onsets or codas, and Korean learners of English tend to epenthesize to break up clusters in English (Brasington, 1981). Recent work indicates that orthography influences L2 phonology (Bassetti, 2008, Coutsougera, 2007, Young-Scholten et al., 1999). This paper describes a project which aimed to reduce Korean L2 English learners' vowel epenthesis through manipulating Korean orthography.

Vowel epenthesis is basically caused by different syllable structures of target and source languages. Korean learners of English have, to some extent, lost a chance to develop their ability of articulating complex clusters of consonants due to the system of their given language, and thus are inclined to add epenthetic vowels in their English speech. To preserve their knowledge of the source language, Korean learners of English were inclined to insert the default vowel [ɨ] which is considered as the least specified vowel in Korean. There is another reason which makes Korean learners of English experience difficulty in pronouncing complex clusters of consonants, and that is Korean orthography. Korean is a language in which spelling and sound correspond, and thus Korean learners of English write an English word as they hear it. Moreover, unlike English, each syllable is written independently in Korean. Therefore, when Korean learners of English are asked to write an English word consisting of consonant clusters in Korean orthography, they can only write the word with an epenthetic vowel in Korean, and that understanding leads common mispronunciation of English for Korean English learners. This tendency not only blocks Korean learners of English to use grammatically correct forms of English, but also distracts them from pronouncing English in a more comprehensible way.

As mentioned earlier, the purpose of this project was to minimize the gap between target and source languages by decreasing vowel epenthesis. The methodology I developed with this aim involves visualization of the English target sound written in Korean by manipulating Korean orthography. To evaluate the validity of this methodology, thirty students

aged 13 participated in the experiment as subjects, and they were divided into two groups; an experimental group and a control group. For the experiment, only subjects in the experimental group were presented with the methodology. The experiment was conducted for five weeks, three times a week, hence fifteen times in total. The experiment involved identifying and manipulating the orthography of words that typically elicit vowel epenthesis. For instance, the two-syllable English word 'pretty [prɪ.ti]' becomes tri-syllabic word in Korean-English pronunciation, i.e. [pɨ.rɪ.ti] with the extra vowel [ɨ] to fit English in Korean phonology because Korean English learners cannot easily sense the initial and final sequences of more than one consonant preceding and following a vowel like the onset clusters [pr] in the word 'pretty'. In the methodology, the English words written in Korean, but in a manipulated way, were presented to subjects like '프리[prɪ].티[ti]' by deleting the epenthetic vowel '—[ɨ]' although this is incorrect in Korean orthography. This study hypothesized that subjects could deduce what the word means and could also develop their metalinguistic awareness of English since they are old enough to recognize what this incorrect combination of Korean letters means without confusion. Rather than explicit explanation of different syllable structures, this method visually describes the target sound by breaking the rules of the Korean spelling system. To be specific, the clear comparison between a typical way of writing the word 'pretty' in Korean (1) and a manipulated way of writing based on this methodology (2) are written as follows:

(1) <프>[pɨ].<리>[rɪ].<티>[ti]

(2) <ㅍ리>[prɪ].<ㅌ|>[ti]

As noted above, an independent phoneme like '<ㅍ>[p]' or '<—>[ɨ]' cannot be written independently because Korean represents syllables, not phonemes. Even though case (2) is obviously incorrect based on this rule, it was hypothesized that this visualized study could give Korean learners of English an idea that consonant clusters are acceptable in English unlike Korean. According to Bassetti (2006), the orthography of the second language affects the mental representation of the second language phonology especially in the early stage of language learning. Therefore, if this methodology can make a connection between the orthography and the mental presentation of the second language phonology in a right way, it is expected that this methodology will help Korean English learners

have more fluent and comprehensible pronunciation by decreasing vowel epenthesis.

METHODS

The experiment was carried out by using materials as discussed above in a warm-up section for approximately five minutes in each English class. There were, as mentioned earlier, 15 experimental sessions over a total of five weeks, from 16th April to 19th May. The material in each session was presented with Microsoft PowerPoint slides. On average, three words were presented in each session. With English words, the target sound written in Korean was presented to subjects by breaking the rules of the Korean orthography system to visually offer the input. All the words used in the material were expected to cause vowel epenthesis with a default vowel [ɨ] in Korean. After subjects in the experimental group were exposed to the input, they were asked to repeat the word after a native English speaker modelled pronunciation. English diphthongs were not considered in this experiment to focus more on minimizing vowel epenthesis.

The experiment of this study can be divided into three parts. First, subjects' oral production of a carefully designed short story, containing 40 English words which were predicted to induce vowel epenthesis by Korean learners of English, was recorded. Subjects in both an experimental and a control group participated in this recording. Secondly, subjects in the experimental group were only exposed to the experimental materials for five weeks as mentioned earlier. Lastly, after the experimental period, lastly, subjects' oral production tasks were recorded again, and this time they were also asked to read a short story which contains the same number of focused English words at a similar level to that of the first story. After the speeches of each group were recorded, they were examined by speech analysis program called 'Pratt'. Through this process, the number of vowel epenthesis generated in subjects' recordings was counted, and the results were compared and contrasted. This way was chosen to confirm whether subjects' vowel epenthesis was actually reduced by this methodology. The interpretation was processed by transcribing English productions of Korean subjects using 'Pratt' program, and the result was also confirmed by native speaker judges.

RESULTS, DISCUSSION AND CONCLUDING REMARKS

According to the statistical results accumulated before the experiment, both the experimental and control groups showed a similar frequency of vowel epenthesis, which confirms they had an equivalent English level prior to the designed treatment. To be specific, the subjects in the experimental group inserted 27.97% of vowel epenthesis whilst subjects in the control group produced 25.94% of vowel epenthesis. Moreover, subjects in each group succeeded in pronouncing presented English words in the given story without inserting epenthetic vowels in the case they were expected to add epenthetic vowels with results of 53.77% and 55.51% respectively. In addition, the percentage of the experimental group subjects failed to pronounce or pronounced English words in an unintelligible way was 18.26% while that of the control group was 18.55%. The results are illustrated in Figure 1 below.

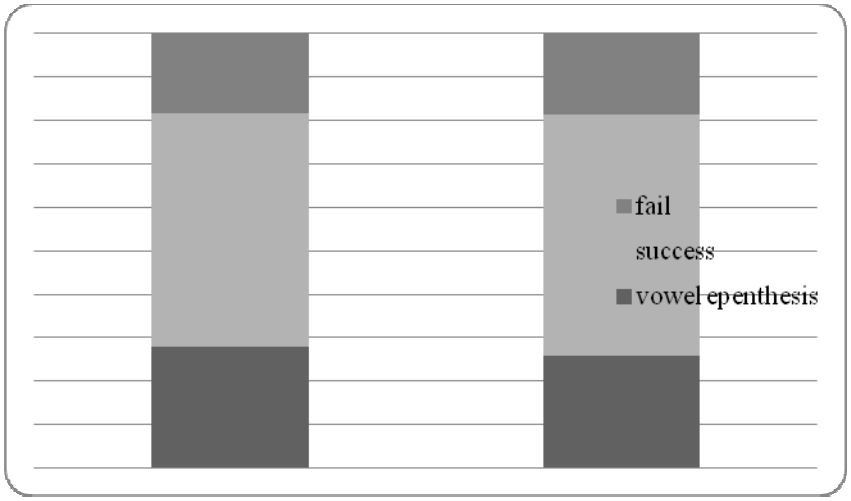

Figure 1. The results of the pre-test.

After applying the methodology for five weeks, the data were collected. This demonstrates a clear development in the experimental group, as illustrated in Figure 2 below.

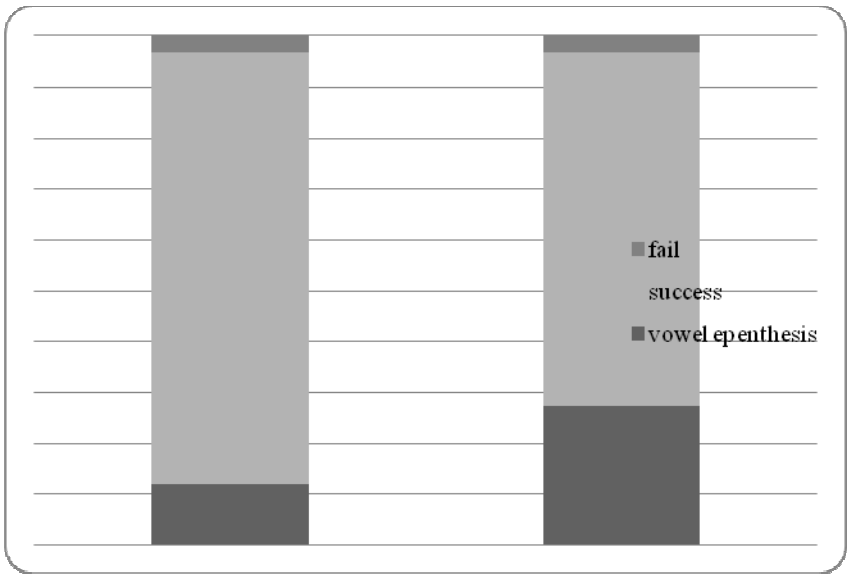

Figure 2. The results of the post-test.

Subjects in the control group which was not presented with the methodology, inserted 27.3% of epenthetic vowels. Compared to vowel epenthesis made by the control group prior to the test, which was 25.94%, it indicates that there is no significant change after the experimental period. On the other hand, subjects in the experimental group produced 11.84% of vowel epenthesis. Compared to 27.97% which was the percentage of vowel epenthesis made by the experimental group in the pre-test, it is decreased by 16.3% while the insertion of epenthetic vowel by the control group after the experimental period is increased by 1.36%. In addition, the percentage of subjects in the control group who successfully pronounced English words without inserting epenthetic vowels was 69.28% whilst it was 84.83% in the experimental group. This was considerably different from the data collected prior to the test since the gap in successful pronunciation without adding epenthetic vowels between the two groups is 1.74%, and the data of the control group is higher than that of the experimental group. However, the gap is 15.55% after applying the methodology to the experimental group, and as a matter of course, the percentage of the experimental group is higher than that of the control group in successful pronunciation. Moreover, the percentage of failure of comprehensible pronunciation was 3.33% and 3.42% for the experimental and control group respectively, which are fairly similar results.

Figure 3 clearly describes the reduction of inserting the epenthetic vowels [ɨ] in the experimental group by comparing the data collected in the pre-test and post-test of the experimental and control groups.

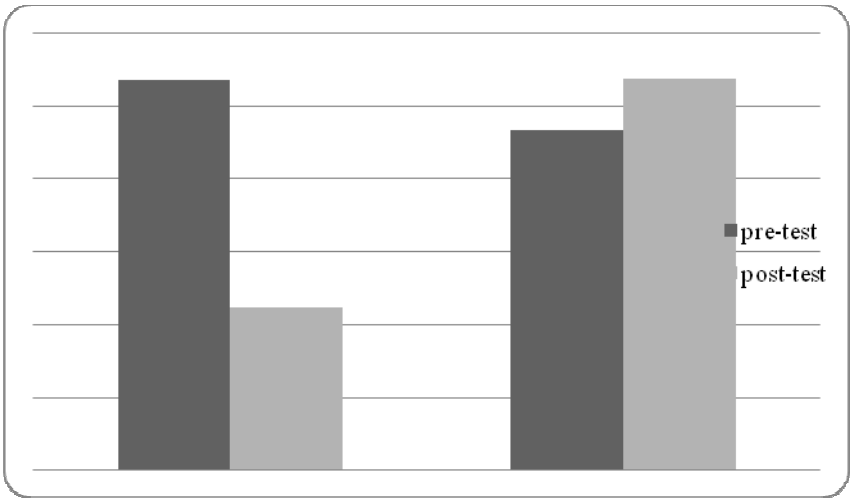

Figure 3. A comparison of the insertion of the epenthetic vowel [ɨ] by each group in the pre-test and post-test.

Figure 3, shows below primarily focuses on the epenthetic vowels [ɨ]. Prior to the test, subjects in the experimental group inserted 26.83% of epenthetic vowel [ɨ] whilst subjects in the control group inserted 23.33% of epenthetic vowel [ɨ]. After applying the methodology to the experimental group, subjects in the experimental group inserted the epenthetic vowel [ɨ] at 11.84% of the time, while the frequency for that control group is 26.92%. The result shows a relatively clear reduction in adding the epenthetic vowel [ɨ] after applying the methodology to the experimental group and demonstrates the validity of the methodology.

It is probably too early to say that this methodology is surely effective to acquire native-like pronunciation for second language learners since it needs more verification. However, once it is proved to be effective, this methodology can be applied to other areas of second languages learning. To explain how this can be achieved, it is necessary to return to the foundations of this methodology, and specifically to the concept of "phonotactic interference". It is crucial term that accounts for the transfer of syllable structures in second language acquisition. In other words, it is 'tactics' that is used for changing the syllable structure in second language from the original form to conform to the syllable structures' first language (Major, 2008). If we take a closer look at Koreans and English, we can see

that the syllable structures of these two languages are fairly different. In particular, Korean allows a maximum of one consonant both in onset and coda positions (CVC) (Sohn, 1999). On the other hand, English permits up to three consonants in onset position and four consonants in coda position (CCCVCCCC) (Abercrombie, 1967, p. 75). Unlike English, which has various syllable types, syllable structures in Korean are much simpler than that of English because Korean only allows V, CV, and maximally CVC in one syllable. Therefore, Korean English learners often find English difficult to pronounce fluently since English has syllable structures that is not acceptable in Korean. Korean English learners generally employ 'vowel epenthesis' among a variety of simplification strategies. Vowel epenthesis is one of the preservation tactic which Korean employ the most when they are dealing with English syllable structures which apparently remain outside the domain of the legitimate syllable structure represented in the Korean learners' mind (Cho, 2006, p. 239). According to Uffmann (2004), vowel epenthesis is part of loanword adaptation when Korean English learners pronounce English words, ensuring that new forms comply with their native phonotactic restrictions which were developed on the basis of the Korean language. In other words, Korean learners of English are inclined to insert epenthetic vowels to break up the consonants in the initial and final clusters in order to make their pronunciation feel correct in terms of their own language structure.

In other words, Koreans do not have a natural intuition for pronouncing consecutive consonants because there are no such sequences in Korean (Sohn, 1999). However, these sounds do exist in languages such as English. In such languages, it is allowed to have initial and final sequences of more than one consonant preceding and following a vowel (Young-Scholten & Archibald, 2000, p. 64). Based on the evidence of this study, this methodology can be applied to other second language learning situations with the aim of reducing vowel epenthesis. For example, if a second language learner's first language either does not allow consonant clusters at all or allows less complex clusters of consonants than the second language does, this methodology can be applied for their learning.

In the case of Japanese, this language is fairly similar to Korean in terms of syllable structures. The maximal syllable in Japanese is either CVC or CVV (Tabata, 1988). Thus, when a Japanese native speaker faces a second language which contains complex consonant clusters, they are inclined to insert a default vowel like Koreans do. The most common epenthetic vowel pair in Japanese is /u/ and /o/ since these are considered as less specified vowels compared to other vowels in Japanese. Japanese speakers

tend to pronounce the one-syllable borrowed foreign word 'strike/straık/' as a five-syllable word like 'ス.ト.ラ.イ.ク/su.to.ra.ı.ku/' in the Japanese writing system 'Katakana'. That can be compared with Korean English learners' pronunciation of the word 'strike/straık/' which is inclined to pronounce as /sɨ.tɨ.ra.ı.kɨ/. This is not the case only occurring in Korean and Japanese. Broselow (1983, 1984) also notes that Cairene and Iraqi Arabic do not allow complex consonant clusters in spite of the fact that the syllable structures of each language are different from one another. Kiparsky (2002) and Abushihab (2010, p. 19) demonstrated that Egyptian Arabic does not allow consonant clusters in initial position, but permits medial and final clusters of no more than two consonants. Like Korean and Japanese native speakers learning English as a second language, vowel epenthesis is inclined to occur when Egyptian Arabic English learners speaks English particularly in the onset position, because of the syllable structure in Egyptian Arabic which only allows CV, CVV, CVC, CVVC, CVCC, and CVVCC. Egyptian Arabic only permits a word to begin with one and only one consonant (Broselow, 1983) since onset is obligatory in Egyptian Arabic. The most underspecified vowel is [i] in Egyptian Arabic. In the case of English word 'strike/straık/', Egyptian Arabic English learners are inclined to pronounce the word 'strike/straık/' as 'strike/s.ti.rʌık/' since the epenthetic vowel [I] is added between the second and third syllables, and the first consonant 's' of the consonant clusters becomes an extra syllable which is unstressed (Hung, 1993, p. 252). Like Arabic, the consonant clusters of Turkish generally appear in the word final position whilst it does not permit to have word-initial consonant clusters (Abushihab, 2010). In other words, when Turkish speakers face a borrowed word like an English word with initial consonant clusters, they are inclined to insert an epenthetic vowel [i] which is the least specified vowel in Turkish to break up the clusters (Abushihab, 2010). As with other language stated so far, Turkish undergoes re-syllabification which is caused by vowel epenthesis (Demircan, 1996). In terms of the English word 'strike/straık/', Turkish English learners tend to pronounce it as 'strike/si.ti.raık/'. We have seen how vowel epenthesis occurs in a second language acquisition with a variety of first languages. After enough verification of the given methodology, hopefully we can apply this methodology to learners of any second language have more comprehensible pronunciation and that is the topic of my further study. It might be difficult to apply this methodology in exactly the same way as was attempted with Korean English learners in

this study. However, it would be effective enough to just let learners know the environment where vowel epenthesis occurs and how to connect it with its orthography since it can help second language learners develop metalinguistic awareness of their second languages.

So far, this paper has focused on vowel epenthesis in a second language acquisition and the methodology which is designed to reduce vowel epenthesis. There is one very important reason why this paper so much cares about syllable structures and vowel epenthesis. It is because a syllable structure is important not only for more comprehensible pronunciation but also for correct use of English grammar. In the case of comparative and superlative forms of adjectives and adverbs, the number of syllables is very crucial. If a second language learner does not correctly understand the syllable structures of English, they can easily make a mistake regarding on this matter. In the case of English, comparative and superlative forms become different based on the number of the given word's syllable. If a word has three or more syllable, 'more' and 'most' is added before the given word for comparative and superlative forms respectively. However, if the number of syllables is less than three, simply '-er' is inserted after the given word for comparative forms and '-est' is added for superlative forms. In the case of an English word 'pretty [prɪ.ti]', this word is often mistakenly considered as three syllable word like 'pretty [pɨ.rɪ.ti]' for Korean English learners. That can not only make Korean English learners pronounce less comprehensible English, but also use incorrect grammar when they speak either comparative or superlative forms. If they mistakenly understand 'pretty [prɪ.ti]' as a three-syllable word, they might say 'more pretty' and '*the most pretty' instead of saying 'prettier' and 'the prettiest'.

In summary, that 'vowel epenthesis' is basically generated due to the different syllable structures of target and given languages. That is crucial since it affects not only learner' comprehensible pronunciation of the second language, but also the correct use of its grammar. Although it is too early to assert that this methodology is surely effective due to the lack of enough verification, the experiment of this methodology at least indicates some possibilities and potentials. It is expected that someday this methodology can be applied to second language learners to have more understandable pronunciation with correct use of grammar no matter which language they try to acquire.

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