

The Pronunciation of English Consonant Clusters by Koreans^{*}

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<Abstract>

한국인의 영어 자음군 발음

이호영

한국어와 영어는 서로 다른 음소 배열 제약과 음운 규칙을 가지고 있기 때문에 영어 학습자들은 특정 영어 자음군을 정확하게 발음하는 데 어려움을 겪게 된다. 따라서 이 논문은 영어 학습자들이 어떤 영어 자음군을 배우기 어려워 하고 왜 이러한 어려움이 생겨나는지 한국어와 영어의 음소 배열 제약과 음운 규칙을 비교해서 밝히는 것을 목적으로 한다.

1. Introduction

Since English has different phonotactic constraints and phonological rules compared with Korean, Korean learners have difficulty in pronouncing certain English consonant clusters correctly. English teachers must investigate what English consonant clusters are difficult for their students and why this difficulty arises. This paper aims to discuss

* This is the revised version of the paper presented at the Second International Conference on Phonetic Sciences 2000 (SICOPS 2000).

what English consonant clusters are difficult for Korean learners and why this difficulty arises by comparing phonotactic constraints and phonological rules of English and Korean. In this paper, I classify English consonant clusters into three groups — word-initial, word-final, and word-medial consonant clusters (cf. Kreidler 1989).

2. Word-initial consonant clusters

In English, the maximum number of consonants which can appear in word-initial position is three. Clusters of two consonants are composed of one obstruent followed by one sonorant. Clusters of three consonants consist of /s/ followed by a plosive and a sonorant. Since word-initial consonant clusters are not allowed in Korean except the sequence of a consonant and a glide (cf. Lee 1996), Koreans have a strong tendency to insert the weak vowel /ʌ/ in the clusters.

2.1. Obstruent + /r, l/

Both voiceless and voiced plosives can appear before /r, l/. But only voiceless fricatives can occur before /r, l/.

- (1) a. prawn, brown, train, drain, cream, green, free, thrill, Sri Lanka, shrimp
 b. play, blame, claim, glad, flat, slim

Since the sequence of an obstruent and /r, l/ is prohibited in Korean, Korean learners tend to insert /ʌ/ within the cluster (e.g. prawn [p^hʌrɔn], brown [bʌraun], play [p^hʌleɪ], slim [sʌlim]). Since /ʌ/ is devoiced before an aspirated plosive or a voiceless fricative (Lee 1996), the insertion of /ʌ/ does not cause any serious problem in perception. Korean learners also tend to pronounce the post-alveolar approximant /r/ as a flap [ɾ]. And some Koreans pronounce the alveolar lateral approximant /l/ as a flap [ɾ]. These mistakes should also be avoided.

Among the consonant clusters in (1), 'tr' and 'dr' are the most problematic for Korean learners. Koreans tend to pronounce 'train' and 'drain' as [t^hʌreɪn] and [dʌreɪn], by inserting /ʌ/ and pronouncing /r/ as [ɾ]. But these clusters must be pronounced as post-alveolar affricates (cf. Gimson 1965). That is, /t/ and /d/ have to be pronounced as post-alveolar plosives and /r/ as a post-alveolar fricative.

2.2. Obstruent + /w/

Both voiceless and voiced plosives can appear in initial position before /w/. But only voiceless fricatives can appear before /w/.

(2) twin, dwell, quart, Gwen, thwart, swing, schwa

Many Korean learners insert /ɯ/ or /u/ in the clusters (e.g. twin [t^hɯwin], swing [sɯwin]), Gwen [ɟuwen], schwa [ʃɯwa]). When /w/ is followed by a high front vowel and preceded by /k/ as in 'queen, quick', most Koreans pronounce /w/ as [ɯ] (e.g. queen [k^hɯim], quick [k^hɯik]). These words must be pronounced as [kwim] and [kwik].

2.3. Consonant + /j/

Various consonants can occur in initial position before /j/. But only /u/ can be followed by /j/.

(3) puritan, beauty, tune, duty, cue, fuse, view, super, suit, huge, music, new

Since the sequence of a consonant and /j/ is allowed in Korean, Korean learners have no problem in pronouncing most of the clusters in (3). But most Koreans pronounce 'suit' and 'super' as [ʃut(ɯ)] and [ʃupə] because /s/ and /j/ are coalesced in Korean. These words must be pronounced as [sju:t] and [sju:pə], or as [su:t] and [su:pə].

2.4. /s/ + consonant

Voiceless plosives, voiceless fricative /f/, and nasals can occur in initial position after /s/.

(4) spy, star, sky, sphere, smile, snow

The voiceless plosives /p, t, k/ lose their aspiration after /s/ in English. But Korean learners tend to pronounce these plosives with strong aspiration (e.g. spy [s(ɯ)p^hai], star [s(ɯ)t^ha:], sky [s(ɯ)k^hai]). A good way of resolving this problem is to advise them to

use Korean unaspirated tense plosives /ㅃ, ㅆ, ㅈ/ instead of strongly aspirated plosives /ㅍ, ㅊ, ㅊ/.

2.5. /s/ + /p, t, k/ + /r, l, w, j/

When three consonants appear in initial position, the first sound is /s/. The second sound is a plosive and the last one a sonorant.

- (5) a. spray, street, scream
 b. splash, sclerosis
 c. squint
 d. spew, student, skew

Many Korean learners insert /w/ between consonants and pronounce the plosives with strong aspiration (e.g. spray [sɰp^hɰrei], street [sɰt^hɰrit], student [sɰt^hjudənt]). Koreans tend to pronounce the cluster final /r/ as a flap [ɾ] and the cluster final /l/ either as a flap [ɾ] or as a lateral approximant /l/ (e.g. splash ([sɰp^hɰrɛɾ]/[sɰp^hɰlɛɾ]). And most Koreans would pronounce /w/ in 'squint [skwɪnt]' as [ɰ] (i.e. squint [sk^hɰɪnt]).

3. Word-final consonant clusters

Up to three consonants can occur in word-final position in English. Clusters of two consonants are composed of /l/ and a consonant, a nasal and an obstruent, or two obstruents. Clusters of three consonants consist of three obstruents, a nasal and two obstruents, a liquid and two obstruents, or two liquids and one plosive. Since word-final consonant clusters are not allowed in Korean, Koreans tend to insert the weak vowel /w/ in and after these clusters.

3.1. /l/ + Consonant

Various consonants can appear after /l/ in word-final position.

- (6) help, bulb, belt, held, world, milk, belch, bulge
shelf, delve, wealth, pulse, Welsh, film, kiln

Since the sequence of /l/ and an obstruent is allowed in Korean, Korean learners do not insert the vowel /ʉ/ in the /l/-obstruent cluster. But most Koreans insert /ʉ/ or /i/ in /l/-nasal clusters (e.g. film [filʉm]/[filim], kiln [kilʉn]). Many Koreans insert /ʉ/ after most /l/-obstruent clusters (e.g. help [help^hʉ], milk [milk^hʉ]), but /i/ after palato-alveolar consonants (e.g. belch [bɛltʃi]/[bɛltɕi], bulge [bʌldʒi]/[bʌldʒi], Welsh [welʃi]/[welɕi]). Since dark 'l' does not exist in Korean, Koreans pronounce /l/ in the /l/-consonant cluster as clear 'l'.

In American English, where r-coloured vowels exist, the tip of the tongue moves forward to pronounce the alveolar lateral /l/ when an r-coloured vowel is followed by /l/ (e.g. world [wɜːld]). But most Koreans who learn American English do not pronounce the r-coloured vowels correctly (i.e. world [wɔːld(ʉ)]).

3.2. Nasal + obstruent

Various consonants can appear after a nasal in word-final position.

- (7) lamp, ant, lunch, change, nymph, warmth, month, length, rinse, lens

Since the sequence of a nasal and an obstruent is allowed in Korean, the vowel /ʉ/ is not inserted in the cluster. But many Koreans insert /i/ after palato-alveolar affricates (e.g. change [tʃeindʒi], lunch [lʌntɕi]) and /ʉ/ after the other consonants (e.g. lamp [lɛmp^hʉ], rinse [rinsʉ]). Koreans also tend to pronounce the word-final /z/ as an alveolo-palatal affricate (e.g. lens [lɛndʒʉ]).

3.3. Fricative + plosive

Only two fricatives /s, f/ can appear before a plosive in word-final position. /p, t, k/ can occur after /s/. But only /t/ appears after /f/.

- (8) lisp, list, risk, left

Many Korean learners insert the vowel /ʉ/ in and after the fricative-plosive cluster (e.g. lisp [lisɥp^hʉ], left [lefɥt^hʉ]). The sequence of a fricative and a plosive often appears in the past forms of verbs ending in a fricative (e.g. breathed, brushed,

shaved). The vowel /u/ is also inserted in and after this sequence.

3.4. Plosive + fricative

Only /s, z, θ/ can occur after a plosive in word-final position.

(9) lapse, spitz, fox, AIDS, width, depth

Since the plosive-fricative sequence is allowed in Korean, Korean learners do not insert the vowel /u/ in the cluster. But they tend to insert /u/ after the cluster (e.g. lapse [lɛpsu], fox [foksɯ]/[faksɯ]). In the case of 'width', /u/ is often inserted because Koreans have difficulty in pronouncing /d/ and /θ/ consecutively. Another problem is that they pronounce the clusters 'ts' and 'dz' as alveolo-palatal affricates (e.g. spitz [s(ɥ)p^hitɕɯ], AIDS [eidʒɯ]).

3.5. Plosive + plosive

When two plosives appear in word-final position, the second plosive is always /t/ and the first plosive is either /p/ or /t/.

(10) adopt, act

Since the sequence of two plosives does not occur in word-final position, many Koreans insert /u/ after this cluster (e.g. adopt [ədopt^hɯ]/[ədapt^hɯ], act [ekt^hɯ]). But Koreans do not insert /u/ in the cluster because the sequence of two plosives is allowed in word-medial position in Korean.

3.6. Plosive + fricative + plosive

If a word-final consonant cluster consists of three obstruents, the last two obstruents are /s/ and /t/.

(11) text, midst

In the case of 'text', many Koreans pronounce this word as [t^heks(u)t^hɯ] by inserting the vowel /u/ after the second consonant and at the end. But in the case of 'midst', /u/ is often inserted both after the first plosive and at the end (e.g. [midɯst^hɯ]).

3.7. Nasal + two obstruents

When two obstruents are preceded by a nasal in word-final position, the final obstruent is normally /t/ or /s/. The sequence of two fricatives after a nasal does not occur.

(12) prompt, distinct, glimpse, jinx, against, amongst

Since the sequence of a nasal and an obstruent is allowed in Korean, Koreans do not insert /u/ between a nasal and an obstruent. But some Koreans insert /u/ between the two obstruents and after the cluster (e.g. glimpse [glimp^huɰsɰ], amongst [əmoŋsuɰt^hu], distinct [dist^hiŋk(u)t^hu], jinx [dʒiŋkɰsɰ]).

4. Word-medial consonant clusters

Up to four consonants can appear in word-medial position in English. Many word-initial clusters and word-final clusters can also occur in word-medial position. There are also clusters which appear only in word-medial position. Since some consonant clusters are not allowed in Korean, the vowel /u/ is often inserted in these clusters.

4.1. Clusters which also occur word-initially

The following is a list of consonant clusters which also appear in word-initial position. As discussed in chapter 2, many Koreans insert /u/ in these clusters.

(13) whisper, master, whiskey, April, citrus, Audrey, sacred, problem
necklace, awkward, Edward, mistress, resplendent, distress

4.2. Clusters which also occur word-finally

The following is a list of consonant clusters which also appear in word-final position. Since these clusters are followed by a vowel, the insertion of /u/ after these clusters does not occur.

- (14) captain, tipsy, doctor, candy, temper, panther, rancid
seldom, helmet, dictation, condemn, impel, insist

4.3. Clusters which occur only in medial position

4.3.1. Two obstruents

When a plosive is followed by an obstruent in word-medial position, Koreans do not insert /ʷ/ in the cluster. In the case of ‘napkin’, however, many Koreans insert /ʷ/ in the cluster (i.e. [nɛp^hʷɪk^hin]). Koreans often insert /ʷ/ if the first obstruent is a fricative (e.g. husband [hædʒʷɪbændʷ], diphtheria [dɪp^hʷt^heria]).

- (15) rugby, husband, obtain, subside, napkin
option, fracture, aesthetic, asphalt, diphtheria

Since a lenis obstruent is tensified after an obstruent (cf. Lee 1996), Korean learners tend to pronounce /b/ in ‘rugby’ as an unaspirated tense plosive (i.e. [rək^hp^hi]).

4.3.2. Obstruent + nasal

Since the sequence of an obstruent and a nasal is not allowed in Korean, Koreans normally insert /ʷ/ in the cluster (e.g. akne [ɛk^hʷni], arithmetic [ərisʷmɛtik], dogma [dɔgʷuma], magnet [magʷmɛt]).

- (16) acme, acne, arithmetic, dogma, magnet, kidney, Whitney

When /t/ or /d/ is followed by /n/ as in ‘kidney’ and ‘Whitney’, /t/ or /d/ involves velum lowering (nasal release) instead of oral release.

If there is a morpheme or word boundary between an obstruent and a nasal, Koreans tend to pronounce the obstruent as the homorganic nasal (e.g. topmost [t^hɔmmost^hʷ], top model [tom model]) because of the nasalization process in Korean (cf. Lee 1996).

4.3.3. Obstruent + liquid

Since the sequence of an obstruent and a liquid is not allowed in Korean, many Koreans insert /ʷ/ in the cluster (e.g. every [ebʷʌri], muffler [mʌp^hʷɪlʌ], butler [bʌt^hʷɪlʌ], athlete [ɛsʷɪlit]).

(17) gosling, every, muffler, peddler, butler, maudlin, athlete

When /t/ or /d/ is followed by /l/ as in ‘peddler’ and ‘butler’, /t/ or /d/ involves lateral release.

4.3.4. Nasal + voiced obstruent

Since the sequence of a nasal and a voiced obstruent is allowed in Korean, Koreans do not insert /ʷ/ in the cluster. But many Koreans pronounce voiced fricatives as plosives or affricates (e.g. Denver [ɖembə], clumsy [k^hʷɪlʌmɖzi]).

(18) timber, finger, kingdom, Denver, clumsy

4.3.5. Nasal + nasal/liquid

Since the sequence of two nasals is allowed in Korean, Koreans do not insert /ʷ/ between the two nasals. But /n/ is often pronounced as /m/ before /m/ (i.e. enmity [emmit^hi]) due to the influence of the decoronalization process in Korean (cf. Lee 1996).

(19) enmity, amnesia, only, Henry

When a nasal and a liquid occur one after another in Korean, the nasal becomes /l/ due to the lateralization process (cf. Lee 1996). Hence many Koreans pronounce ‘only’ and ‘Henry’ as [oli] and [heli] respectively. Some Koreans also pronounce ‘only’ as [onni].

4.3.6. /l/ + /r, w/

Since the /l/-/w/ sequence is allowed in Korean, Koreans have no difficulty in

pronouncing /l/ and /w/ consecutively. But Koreans tend to pronounce the /l/-/r/ sequence as a single /l/ or /r/ (e.g. already [oredi]/[oledi]) because this sequence does not exist in Korean.

(20) already, always

4.3.7. Consonant + /j/

Since the sequence of a consonant and /j/ is common in Korean, Koreans have no difficulty in pronouncing this cluster.

(21) onion, failure

4.3.8. Three consonants

When three consonants occur consecutively in word-medial position, Koreans might insert /u/ after the second consonant (e.g. country [kant^hɯri], pilgrim [p^hilgʷirim], pamphlet [p^hamp^hɯlet]).

- (22) a. anthracite, belfry, country, pilgrim, pamphlet
 b. antler, empty, function
 c. capstan, instant, textile

4.3.9. Four consonants

If a word-medial consonant cluster consists of four consonants, the last consonants are composed of /s/, /p, t, k/ and /r, l/. Some Koreans tend to insert /u/ after the second and the third consonants (e.g. instrument [insʉt^hɯrumənt], obstruct [obsʉt^hɯrəkt]).

(23) instrument, obstruct, express, exclaim

5. Conclusion

So far, I have discussed what problems Korean learners have in pronouncing English consonant clusters by comparing phonotactic constraints and phonological rules of English and Korean. The pronunciation problems that Koreans have can be summarized as follows:

- 1) Many Koreans tend to insert /ɰ/ or /i/ in and after the consonant clusters. /i/ is inserted after palato-alveolar consonants and /ɰ/ after other consonants.
- 2) Many Koreans pronounce fricatives in clusters as plosives or affricates.
- 3) Many Koreans pronounce /p, t, k/ occurring after /s/ with strong aspiration.
- 4) Many Koreans pronounce /r, l/ as a flap [ɾ].
- 5) Among the consonant clusters, 'tr, dr, sj, nl, nr, lr' are especially difficult for Koreans.

I believe that the pronunciation of English consonant clusters will be much improved if systematic ear-training and pronunciation training are offered to Korean learners.

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접수일자: 2000년 10월 23일

게재결정: 2000년 12월 1일

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