An analysis of syllabic constraints in the Korean Language

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Abstract

This paper presents syllable structures, consonants and vowels, initial consonants of syllables and their constraints, final consonants of syllables and their constraints, final consonant clusters of syllables, which have been studied in terms of phonology.

Introduction

In studying a language, speech sounds are the most fundamental, and in studying its phonology, its structures of syllable, a phonological unit, are necessary. A study of phonology of a language involves the number of its speech sounds, their systems, syllable patterns and their constraints.

In studying Korean, its consonants and vowels and their articulations, their combinations that form syllables have been focused.

In this paper, syllable structures and their constraints in Korean have been presented.

Aim

1. to understand syllable structures and their constraints.
2. to know syllable structures and their constraints, thereby developing speaking and listening skills through practice for correct pronunciation and speech, and
3. to contribute towards learning and teaching of Korean.

Data and method

The data required for the paper have been collected from Korean-English Dictionary, Korean-Korean Dictionary, Internet Websites, A Course in Linguistics and Phonetics for Postgraduate Students (prescribed text of Linguistics Department at YUFL), basic level Korean texts, and other texts on Phonetics in Korean and Myanmar. Descriptive method is used for the study.
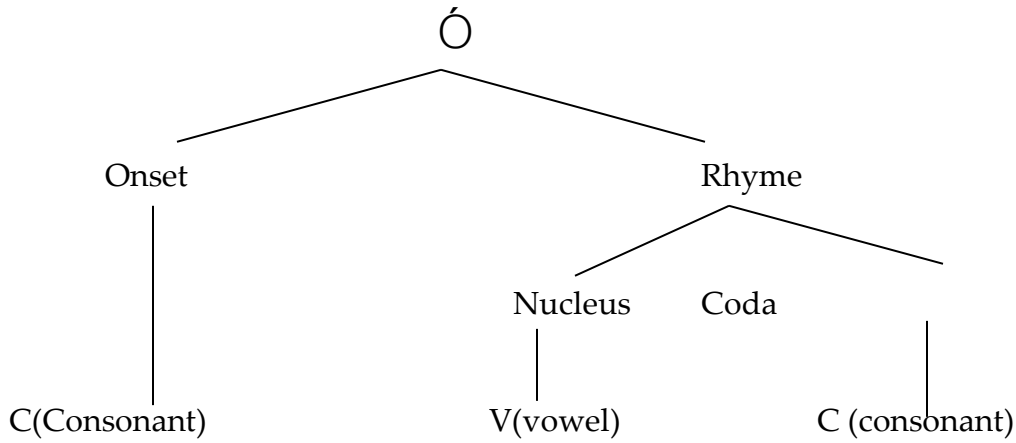
Findings

1. Syllable Structure

From the point of view of phonology, a syllable is found to be made up of onset (O) and rhyme consisting of nucleus and coda. (L601 General Linguistics 143, 147)

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Figure (1) Formation of elements of a syllable

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Onset   Rhyme
Nucleus   Coda
C(Consonant)   V(vowel)   C (consonant)

1.1. Consonants and vowels in Korean

In Korean, there are 19 consonants consisting of 14 basic consonants and 5 consonant clusters, and 21 vowels consisting of 10 cardinal vowels and 11 diphthongs. (Lee Iksob 1997: 28, 29)

Basic consonants: ㄱ [k, g] ,ㄴ[n, ɟ], ㄷ[t, d] ,ㄹ[L, ɾ, ʌ] ,ㅁ[m] ,ㅂ[p, b],

ㅅ [s, □, ʃ ɟ] ,ㅇ[ŋ] , ㅈ[ts, dz] , ㅊ[t□ʰ] , ㅋ [kʰ],

ㅌ [tʰ] , ㅍ [pʰ] , ㅎ[h, ʌ]

Consonant clusters: ㄲ[k ʹ] ,ㄸ [tʹ] ,ㅃ[pʹ] ,ㅆ [sʹ, □ʹ] ,ㅉ [t□ʹ]

Cardinal vowels: ㅏ [A], ㅑ [Ja], ㅓ [≅], ㅕ [J≅], ㅗ[o], ㅛ[Jo],

ㅜ[ʊ], ㅠ[J ʊ] , ㅡ[ʄ], ㅣ [1]

Diphthongs: ㅐ[ɛ], ㅒ[Jɛ], ㅔ[e], ㅖ[Je], ㅘ [ωα], ㅙ[ωɛ],

ㅚ [2], ㅝ [ωə], ㅞ [ωe], ㅟ [ψ, ωi], ㅢ [ʄı]

The above-mentioned consonants and vowels combine to structure syllables in Korean.

1.2. Syllable patterns in Korean

In Korean, there are four patterns. (Lee Iksob 1997: 88)

	onset	nucleus	coda		Syllable patterns
이 [ì]	2 (none)	/ ì /	2	➜	- v -
차 / *t*□ʰa /	/ *t*□ʰ /	/ ə /	2	➜	- c v -
알 /al/	2 (none)	/ ə /	/l/	➜	- vc -
물 /mul /	/m/	/u/	/l/	➜	- c vc -

According to the Korean syllable patterns above, the first syllable 이 [ì] (to go) has the nucleus / ì/ (--v--). The second syllable 차 / *t*□ʰa / (*car*) is a pattern (cv--) consisting of an onset / *t*□ʰ / and a nucleus / ə /. These two syllables lack a coda, and they are termed codaless syllables.

The third syllable 알 /al/ (egg) has no onset, but the nucleus / ə / and the coda /l/ forming the pattern (--vc). The fourth syllable 물 /mul /(water) has a pattern (cvc) consisting of the onset /m/, the nucleus /u/ and the coda /l/.

In addition to these four syllable patterns in Korean, there are also other patterns derived from them. According to the formation of sound segments in a language, various consonant clusters existing in marginal areas of syllables and diphthongs existing in nucleus positions of syllables can be propounded. Korean syllable patterns can be based on such four simple patterns.

1.2.1. Syllable pattern of –v-

In Korean, there are syllables patterning with only the nucleus vowel without any onset or coda. The nucleus can be a pure vowel or a diphthong, but they are all vowels. (U Tun Myint 1996: 189)
Such a syllable pattern can be found in the following examples:

<u>Syllables patterning with –v-</u>

Pronunciations	Korean examples	Meanings
/ O /	오	Five (numeral)
/ J O /	요	Mattress
/ J Ɛ́ /	애	Child
/ J e' /	예	Yes
/ w ɛ /	왜	Question word (why?)

1.2.2. Syllable pattern of cv-

The syllable pattern cv- without any coda after the nucleus is found in Korean. Such a pattern can be found in the following examples:

Syllables patterning with cv-

Pronunciations	Korean examples	Meanings
/ na /	나	I (informal)
/ n ∧ /	너	You
/ ts ∧ /	저	I (formal)
/ s a /	사	Four (numeral)
/ kʰ o /	코	Nose

1.2.3. Syllable pattern of –vc

The syllable patterns –vc and –vcc without any onset are found in Korean. Such patterns can be found in the following examples. (http://www.en2ko@bot.talk.google.com)

Syllables patterning with –vc

Pronunciations	Korean examples	Meanings
/ j a k /	약	Medicine
/ j ∧ p /	역	Railway station
/ u : n /	운	Fate/destiny
/ j∧l /	열	Fever
/ j∧p/	옆	Side

Syllables patterning with –vcc

Pronunciations	Korean examples	Meanings
/ i l /	잃	To lose
/ i k /	읽	To read
/ j a e /	얇	To be thin
/ ' a n /	앉	To sit
/ ' a : p /	없	To lack

1.2.4. Syllable pattern of cvc

The pattern cvc and the pattern cvcc having onset and rhyme (nucleus and coda) can be found in the following examples:

<u>Syllables patterning with cvc</u>

Pronunciations	Korean examples	Meanings
/ p u l /	불	Fire
/ s u: l /	술	Liquor
/ m ∧ k /	먹	To eat
/ p j ∧k /	벽	Wall
/ t o: n/	돈	Money

<u>Syllables patterning with cvcc</u>

Pronunciations	Korean examples	Meanings
/ ' k' ʃ l /	끊	To cut
/ ' m a : n /	많	To be many
/ k a p /	값	Value
/ ' s a: m /	삶	Life
/ ' p a k /	밝	To lighten

2. Consonant clusters and their constraints

2.1. Consonant clusters

A set of consonants existing in positions of onset and coda in syllables are called consonant clusters. It is a term used to refer to orderly consonants as onset or coda in a syllable in the study of continuous speech. Not all consonant clusters are not permissible in a language. (Dr. Daw Hla Nyunt: 2007: 89, 90)

2.2. Consonant clusters and their constraints in Korean

There are constraints in the number and types of consonants existing in the position of onset and in that of coda. Only one consonant is found to exist in the position of onset, and

only two are found to exist in the position of coda. It is found that not every consonant can be in consonant clusters, and consonant constraints occur based on their respective positions.

2.2.1. Onset with only one consonant

There are 19 consonants in Korean, and they can exist in the position of onset in syllables, as can be found in the following examples:

Consonants	Korean examples	Pronunciations	Meanings
ㄱ / **k, g** /	강	/ **k** a ŋ /	River
ㄴ / **n** , ŋ /	남	/ **n** a m /	South
ㄷ / **t**, d /	닭	/ **t** a k /	Chicken
ㄹ / l, **r, Λ** /	리	/ **r** i /	Possibility
ㅁ / **m** /	몸	/ **m** o m /	Body
ㅂ / **p**, b /	발	/ **p** a l /	Foot
ㅅ / **s**, □, ʃ /ʃ/	소	/ **s** o /	Ox
ㅇ / ŋ /	일	/ i : l/	Business

In the position of coda:

ㅈ / **ts**, dz /	종	/ **t s** o ŋ /	Bell
ㅊ / t□ʰ /	천	/ t□ʰ a : n /	Thousand (numeral)
ㅋ / **kʰ** /	콩	/**kʰ**oŋ /	Bean
ㅌ / **tʰ** /	타	/ **tʰ** a' /	To ride
ㅍ / **pʰ** /	팔	/ **pʰ** a l /	Arm
ㅎ / h, ◈ /	혀	/ h j ʌ /	Tongue
*ㄲ / **k'** /	깨	/ **k'** ε /	Sesame
*ㄸ / **t'** /	딸	/ **t'** a l /	Daughter
*ㅃ / **p'** /	빵	/**p'** a ŋ /	Bread
*ㅆ / **s'**, □' /	쌀	/ **s'** a l /	Rice

*짜 / tɕ' /	짜	/ t ɕ'a' /	To be salty

It is found that in the consonants above, such consonants indicated with * as ㄲ / **k'** /, ㄸ / **t'** /, ㅃ / **p'** /, ㅆ / **s'**,ɕ' /, and ㅉ / tɕ' / are made up of the same consonants (e.g. ㅂ / **p**, b/ + ㅂ / **p**, b / =ㅃ[*p'*]), but they can only be pronounced as only one consonant. Therefore, it is found that in Korean, the onset has the pronunciation of only one consonant. (Lee Iksob 1997: 89)

2.2.2. Coda in a syllable and its constraints

2.2.2.1. Constraints of single consonants existing as coda

There can be in Korean either single consonants or consonant clusters existing in the position of coda in syllables. There are their constraints. The single consonants existing as coda or glottal stops are plosives such as ㄱ / k, g /, ㄲ / k' / , ㅋ / kʰ /, ㄷ / t /, ㅌ/ tʰ /, ㅂ / p /, ㅍ/ pʰ /, fricatives such as ㅅ / s /, ㅆ/ sʰ /, ㅎ / h /, affricates such as ㅌ/ t /, ㅈ / d z /, nasals such as ㅁ / m /, ㄴ/ n /, ㅇ/ ŋ / and lateral such as ㄹ / l /. Only the two plosives such as ㄸ / t' / , ㅃ / p' / and an affricate ㅉ/ tɕ' / cannot be found as coda consonants. The formation of single consonants in the position of coda in Korean can be found in the following examples. (Yonsei Reading I: 2002)

Coda	Korean examples	Pronunciations	Meanings
ㄱ / **k** /	약	/ j a **k** /	Medicine
ㄲ / **k'** /	깎	/ ' k' a **k'** /	To cut
ㅋ / **kʰ** /	부엌	/ p u ʌ **k** /	Kitchen
ㄷ / **t** /	받	/ p a **t** /	To accept
ㅌ / **tʰ** /	밑	/ m i **t** /	Bottom/base
ㅂ / **p** /	밥	/ p a **p** /	Rice
ㅍ / **pʰ** /	잎	/ i **p** /	Leaf
ㅅ / **s** /	낫	/ n a **t** /	Sickle
ㅆ / **s'**,ɕ' /	있	/ i **t** /	To exist
ㅎ / ◈ /	쌍	/ 's' a **t** /	To wrap
ㅊ / tɕʰ/	꽃	/ k' o **t** /	Flower

ㅈ / **dz** /	낫		/ n a **t** /	To be low
ㅁ / **m** /	몸		/ m o **m** /	Body
ㄴ / **n** /	천		/ t ⬜ʰ a: **n** /	Thousand (numeral)
ㅇ / ŋ /	콩		/ kʰ o ŋ /	Bean
ㄹ / **l** /	일		/ i : **l** /	Business

The pronunciations of the coda consonants in the examples above will now be mentioned.

2.2.2.2. Phonological constraints in Korean (Coda single consonants)

Korean coda consonants	Pronunciations
ㄱ /k/, ㄲ /k'/, ㅋ /k**ʰ**/	/ k /
ㄴ /n/	/ n /
ㄷ /t/, ㅌ /tʰ/, ㅅ /s/, ㅆ /s'/, ㅈ /dz/, ㅊ /t⬜ʰ/, ㅎ /h, ◈/	/ t /
ㅁ /m/	/ m /
ㅇ /ŋ /	/ ŋ /
ㅂ, ㅍ /b,p/	/ p /
ㄹ /l /	/ l /

The pronunciation of coda consonants in Korean such as ㄱ / k / , ㄲ / k' / , ㅋ / kʰ / is that of /k/. The pronunciation of such Korean coda consonants as ㄷ / t / , ㅌ / tʰ / , ㅅ / s / , ㅆ / s' / , ㅎ / h / , ㅈ / dz /, ㅊ / t⬜ʰ / is that of /t/. And the pronunciation of Korean coda consonants such as ㅂ / p / , ㅍ / pʰ / is that of /p/. As mentioned above, the pronunciations of some coda consonants are the same, but they are found to vary on the basis of suffixes when used in writing, as can be seen in the following examples.

Korean examples + suffixes		Expressions	Pronunciations	Meanings
약 / ja**k** / + 이다 / i d a /		약이다	/ j a **g** i d a /	--is medicine
부엌 / p u' ^**k** / + 이다 / i d a /		부엌이다	/pu'^**k**ʰida/	--is a kitchen
꽃 / k' o **t** / + 이다 / i d a /		꽃이다	/ k' o t⬜ʰ i d a /	--is a flower
옷 / o' **t** / + 이다 / i d a /		옷이다	/o'⬜ida/	--is a dress
잎 / i **p** / + 이다 / i d a /		잎이다	/ i **p**ʰ i d a /	--is a leaf

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답/d a **p** /　　+ 이다/i d a /　　답이다　　/ d a **b** i d a /　--is an anwer

2.2.2.3. Constraints of coda consonant clusters

In Korean, there are coda clusters consist of two consonants, and not more than two. There are 11 pairs such as 1 pairs beginning with ㄱ/ k /, 2 pairs beginning with ㄴ/ n /, , 7 pairs beginning with ㄹ / l /, and 1 pair beginning with ㅂ / p /. The structure, order and examples of coda consonant clusters in Korean can be found as follows:

Korean coda clusters	Pronunciations of examples	Symbol of coda clusters	Meanings
ㄳ/ **k** / / s /	몫/ m o **k** /	/ k /	Share
ㄵ/ **n** / / dz /	앉/ a**n** /	/ n /	To sit
ㄶ/ **n** / / h /	많/ ma**n** /	/ n /	To be many
ㄺ/ l / / **k** /	읽/i **k** /	/ k /	To read
ㄻ/ l / / **m** /	젊/ ts a:**m** /	/ m /	To be young
ㄼ/ **l** / / **p** /	밟/ 'pa:**p**/, 넓/ 'n ʌ **l**/	/ l / / p /	To step/be wide
ㄽ/ **l** / / s /	외곬/ 'we go**l**/	/ l /	Separately
ㄿ/ l / / **p** /	읊/ 'ʃ**p** /	/ p /	To compose poems
ㄾ /**l** / / t /	잃/ 'i**l** /	/ l /	To lick
ㅀ/**l** / / t /	잃/ 'h a **l** /	/ l /	To lose
ㅄ/ **p** / / s /	없/ 'a:**p** /	/ p /	To lack

　　Korean coda consonants begin with ㄱ/k/ combining ㅅ/s/,ㄴ /n/ combining ㅈ /dz/ or ㅎ/h/,ㄹ/ l/combining ㄱ/k/, or ㅁ/m/,ㅂ /p/,ㅅ/s/, ㅍ/ph/,ㄴ/n/ and ㅌ/th/,ㅂ /p/ combining ㅅ/s/. (Yonsei Reading I: 2002)

　　According to the examples above, a syllable with two coda consonant clusters is found to have the pronunciation of only one coda consonant. In addition, the second of the two coda consonants is found to combine in sound with the following consonant.
For example,
　외곬/ˋwe go**l**/　　　　　+으로/ʃro/　　외곬으로/ˋwegol**sʃ**ro/　**=** Separately

　　In addition, it is found that in coda consonant clusters, the position of the consonant ㄱ /k/ or ㅂ/p/ can be the previous one or the following one, but the position of the consonant ㄴ /n/ or ㄹ /l/can only be the previous one.

3. A comparative study of constraints of syllable structure in other languages

    In some languages, there are structure constraints within the framework of syllable structure rules. In English, -ng in the word 'hang' the nasal consonant /N / representing –ng can only occur in the coda position, and can never be in the onset position. Although such a constraint exists in English, there is almost no such feature in other languages. In Myanmar, syllables beginning with /N / can be found. They occur in such words as idk /ŋō/, and ief; /ŋ`ā/. In Korean, however, both syllables beginning with /N / and those ending with /N / can be found. For example, this feature can be found in the Korean word 냥 /ŋaŋ/ (meaning 'ancient monetary unit').

    In addition, in English, there is another constraint that in the word 'hang', its onset consonant /h/ never occurs in the coda positions of English syllables. In this case, ng //N / and h /h/ in the same word 'hang' are in reverse positions.

    It is found that there are constraints in English syllables relating to order of consonants in consonant clusters. In the words 'stay', 'tray', and 'stray', such consonant clusters as /st-/, /tr-/ and /str-/ are found to exist, but there are no such consonant clusters as /sr-/, /ts-/, /rt-/, and /rts-/. Although /sp-/ can exist in the onset position of the word 'spy', the cluster /ps-/ never exists. (U Tun Myint 1996: 191, 192)

    In Korean, too, in the coda consonant clusters, /l/ and /n/ occur in the preceding position, not in the final one. In addition, there is only one onset consonant and there are two consonants in the coda position, but only one of them is pronounced.

Discussion

    It is observed that the Korean syllable patterns involve in all the four patterns. There is only one onset consonant. Although there are two coda consonants, there is the pronunciation of only one consonant. The second pronunciation occurs in combination with the initial sound of the following syllable. ㄸ/t'/, ㅃ/p'/, ㅉ/t□'/ ,ㄲ/k'/, ㄸ/t'/, ㅃ/p'/, ㅆ /s',□/, ㅉ /t□'/, ㅇ /ŋ / ㅊ /t□ʰ/, ㅋ/kʰ/.

    There are 19 consonants, and they can all be found in the onset position, but such single consonants as ㄸ/t'/, ㅃ/p'/, ㅉ/t□'/ never occur in the coda position, and there are no such coda consonant clusters as ㄲ/k'/, ㄸ/t'/, ㅃ/p'/, ㅆ /s',□/, ㅉ /t□'/, ㅊ /t□ʰ/, ㅋ/kʰ/.

Conclusion

    Through the knowledge of the syllable patterns and their constraints on the basis of the analysis of Korean speech sounds, the manner of articulation in speech can be propounded. In addition, it is believed that in language practice through the knowledge of the number of speech sounds and their order, this paper will contribute towards the systematic use of language.

References

ထွန်းမြင့်၊ ဦး (၁၉၉၆)၊ သဒ္ဒဗေဒ၊ ရန်ကုန်၊ တက်လမ်းစာပေ
လှညွန့်၊ ဒေါက်တာ၊ (၂၀၀၇)၊ ပါရဂူကျမ်း၊ မြန်မာစာဌာန၊ ရန်ကုန်တက္ကသိုလ်
အောင်မြင့်ဦး၊ ဒေါက်တာ၊ (၂၀၀၅)၊ လူမှုဘာသာဗေဒသဘောတရား၊ ရန်ကုန်၊
မြန်မာစာဌာန၊ ရန်ကုန်တက္ကသိုလ်

Department of Linguistics. (2010). *A Course in Linguistics & Phonetics for Postgraduate Students.* Yangon University of Foreign Languages Press, Yangon.

Dong- A's Mate. (1998). *English-Korean, Korean-English Dictionary Doosan Dong. A Co., Ltd Press*, Seoul.

Iksob, Lee et al. (1997). *Korean Linguistics. Seoul: Shingu-Cultural history Press.*

Ju Haeng, Lee. (1998). *Korean Pronouncing Dictionary Jigu Cultural History Press,* Seoul.

Korean Language Institute. (2002). Korean I Reading. Yonsei University Press, Seoul

http://www.en2ko@got.talk.google.com