

Vowel Lengthening in Slavic: Diachronic Conditions and Synchronic Variations

Hyoung-sup Kim

Hankook University of Foreign Studies

I . Introduction

Slavic languages have developed their linguistic tradition from Late Common Slavic (henceforth, LCS), which had inherited the linguistic properties from Proto Slavic¹⁾, one of language families of Proto Indo European (henceforth, PIE). Contemporary Slavic languages in East, South, or West Slavic group are consequences of diachronic changes in morphology, phonology, and syntax. Among numerous historical changes, the destiny of reduced vowels (ъ/ь) of LCS, either loss or full vocalization, constructed the new linguistic paradigm in each Slavic language. The loss of reduced vowels occurs contingently on stress marking (stressed vs. unstressed) and positional variations (strong vs. weak position). This loss shifted the structure of open syllables into that of closed syllables, that is, $CV_1CV_2 \rightarrow CV_1C$ [CV: C]. At this point, the disyllabic structure transforms into the monosyllabic structure. The length of the vowel (V_1) becomes longer due to the loss of V_2 . This phenomenon is termed ‘Compensatory Lengthening (henceforth, CL)’ (Campbell, 1998, De Chene and Anderson, 1979, Hayes, 1989). CL is a kind of Vowel Lengthening (henceforth, VL). CL refers to “a set of phonological phenomena wherein the disappearance

¹⁾ Balto Slavic is ancestral to Proto Slavic, out of which all other Slavic languages descended.

of one element of a representation is accompanied by a corresponding lengthening of another element” (Kavitskaya, 2002: 3). CL can befall a vowel or a consonant. However, this paper focuses on CL of vowels only, since CL is much more common with vowels in natural languages. Furthermore, a comparative methodology is definitely in favor of this research in that a vowel length variation exists in a language, while another does not. In fact, Czech is an exemplary for this function, when it is compared to Russian. It has a vowel length distinction and consequently sheds light on the research for the syllable structure of Russian where there is no vowel length distinction in an overt way.

In section II, various theories on CL will be introduced: CV Theory, X Theory, and Moraic Theory. Section III presents the relationship between stress and vowel length. Moreover, Slavic language data will be analyzed in details. In section IV, CL and VL in Slavic will be investigated in the following types: CVCV → CV:C, CVCV → (CVV) → CV:, and CVC → CV.

II. Theoretical Approach

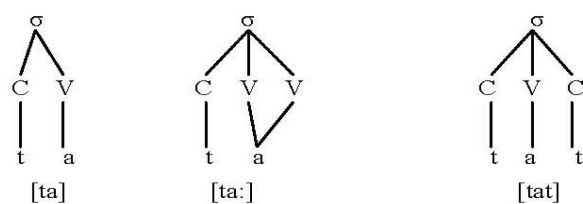
1. CV Theory

The original CV theory proposed by McCarthy (1979) represents that C and V directly correspond to consonants and vowels respectively. However, this CV tier has been challenged by prosodic tier structure, since it is of segmental tier²⁾. This approach confronts a

²⁾ In linguistics (specifically, phonetics and phonology), the term segment may be defined as “any discrete unit that can be identified, either physically or auditorily, in the stream of speech.” Crystal, D. 2003. A dictionary of linguistics & phonetics: Wiley Blackwell.

problem that it cannot reflect prosodic features of syllables. As shown below, consonants match C and vowels - V. A short vowel corresponds to a V, but a long vowel - two V's.

(1) CV Theory



(σ – Syllable, C – consonant, V – Vowel)

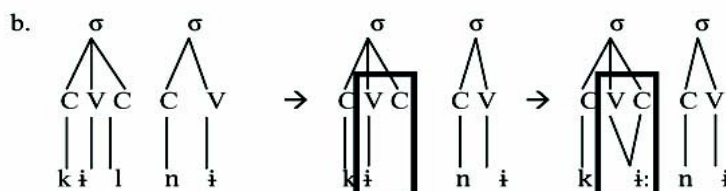
(Hayes, 1989: 253)

This approach is too restrictive to explain CL caused by loss of a consonant as the following instance. The process shows the case that the first vowel [i] is lengthened by the loss of a consonant /l/ and therefore vowel /i:/ must be represented by VC in the rectangle, which is not plausible. To solve this problem, there emerged X theory proposed by Levin (1985) and Lowenstamm and Kaye (1986).

(2) Komi l deletion in CV structure.

a. /kil-ni/ → ki:ni 'to hear'

Hear-INF

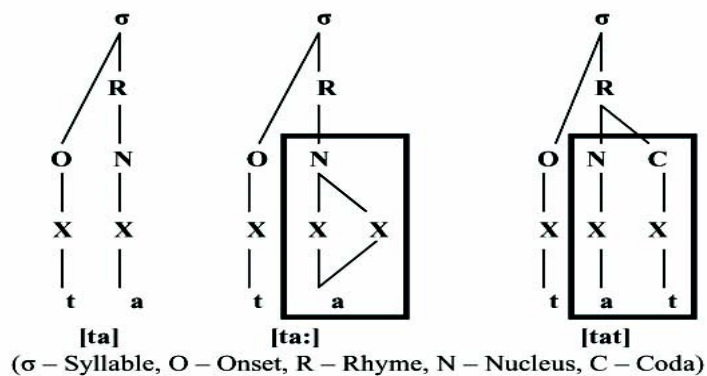


(Kavitskaya, 2002: 19)

2. X Theory

The X theory has the following skeletal structure as in (3) below. A syllable consists of onset (O) and rhyme (R). Rhyme is composed of nucleus (N) and coda(C).

(3) X Theory



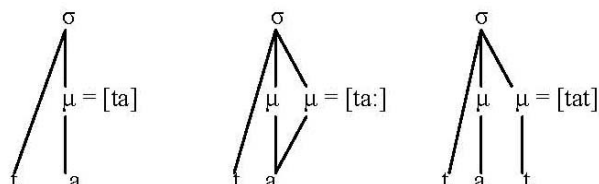
(Hayes, 1989: 253)

The X theory represents syllable structures with X irrespective of whether the loss of a vowel (V) or a consonant (C) as in (3). However, Hayes (1989) claims that double linkings to onset + nucleus do not represent length, and only rhyme position creates length differences. (cf. Kavitskaya 2002:19)

3. Moraic Theory

According to Kavitskaya (2002), the concept of mora as a unit of syllable weight originated from work on accentuation (McCawley, 1968, Newton, 1972) and contemporary version of moraic theory is proposed by Hyman (1985), Hock (1986), Hayes (1989), and McCarthy and Prince(1996). The structure of the moraic tier is formalized as follows

(4) Moraic Theory



Hyman (1985) postulated that a prevocalic onset consonant does not bear a mora universally. This rule is termed as Onset Creation Rule. This presupposes that consonants are pronounced together with a following vowel bearing a mora as in (5).

(5)



In addition, Hayes (1989) suggests that CL occurs only when a mora bearing segment is deleted. The typology of CL can be defined as follows on the basis of Hyman (1985) and Hayes (1989).

(6) Compensatory Lengthening (CL)

- a. CL is a context free process
- b. CL is subject to prosodic constraints:
The deletion of a mora bearing segment triggers CL.
- c. Moraic theory is well suited for the formal description of the prosodic frame.
- d. The prosodic frame that governs CL is partly language specific.

(cf. Hayes (1989))

On the ground of these assumptions, this research investigates the CL of vowels within the domain of Slavic nouns, adjectives, and verbs. Special attention will be paid to the typological generalization: i) whether Slavic CL is a context free process, ii) whether only the deletion of a mora bearing segment triggers CL, and iii) what kind of prosodic frames exist and whether they are language specific or not. The diachronic changes of the structure of CVCV in Slavic, i.e., from OCS (Old Church Slavic) to modern Slavic languages demonstrate the linguistic condition of CL in Slavic. Czech and Polish exhibit CL in the nominal paradigm. Czech is the language which has the distinction between length and stress, while Polish has a systematic stress pattern where the primary stress falls on the penultimate syllable. For these reasons, the relationship between vowel length and word stress must not be ignored for this investigation. It is generally assumed that in a language with contrastive vowel length, as in Czech, long vowels are regarded as two moras and short vowels - as one mora³⁾. With regard to stress marking, Czech is characteristic of a separate marking of stress and length. In contrast, Russian has a different stress system where stressed syllables are always longer and stronger than other unstressed syllables. Bosnian/Croatian/Serbian (BCS) still has tonal distinctions: long rising (acute: ´), short rising (accent: `), long falling (circumflex: ^), and short falling (grave: `). These pitch accents of BCS will be introduced in the next section, since pitch accents have an influence on BCS stress system.

³⁾ Its plural form can be either moras or morae.

III. Vowel Length vs. Stress (ударение)⁴⁾

1. Czech

In Czech, vowel length is purely phonemic, but not phonological. That is, vowel length is independent on phonological conditions. (Townsend and Komar, 2000: 16) Czech vowel length distinguishes meanings of words; for instance, *domu* (gen/dat.sg.) vs. *domů* (home(ward)), *pás* (belt) vs. *pas* (passport) etc. Czech has a weak word stress, which falls on the first syllable of the word. In case of being used with prepositions, the stress of the noun shifts onto the preposition, comprising a new phonetic unit. A stressed syllable is not always longer and stronger in Czech, which is not the case with Russian.

(7) Vowel alternation in Czech

- a. mráz ~ mrazu : á ≈ a
- b. chléb ~ chleba : é ≈ e
- c. vítr ~ větru : í ≈ ě
- d. stůl ~ stolu : ů ≈ o
- e. moucha ~ much : ou ≈ u

As shown in (7) above, the noun declension demonstrates the vowel change in length. The loss of the final vowel in (7a b) changes the word structure and makes the vowel longer without the qualitative shift of vowel⁵⁾. (7c d) exhibits the case of vowel lengthening, which turned out to be qualitative shift, i.e., /ě/ → /i/. (7e)

⁴⁾ Stress (ударение) must be differentiated from pitch/tonal accent or dynamic accent (loudness).

⁵⁾ Quantitative shift of vowel is only the change in length, while qualitative shift is defined as the change replaced by another vowel.

displays a counterexample of CL that ‘the lengthening of a segment triggered by the deletion or shortening of a nearby segment’ (Hayes, 1989: 260). Some examples of VL are found in the paradigm of verbal conjugation in Czech, e.g., přinos ~ přinést: í ≈ i. However, this research will focus on CL in Czech noun declension.

2. Polish

Polish has the systematic stress paradigm where primary stress falls on penultimate syllable. Without regard to the stress pattern, CL occurs in Polish as well. Polish also has vowel alternations, depending on case. Case shift of nominative case to oblique case triggers vowel shift or vowel length distinction as in (8). There is an interrelationship between the two syllable structures, i.e., (C)CVCV and (C)CVC, which results from the loss of the final vowel.

(8) Vowel alternation in Polish

- a. Głowa ~ głów ‘head’ : o ≈ ó
- b. Ząb ~ zęby ‘tooth’ : ą ≈ ę
- c. Róg ~ rogi ‘corner’ : ó ≈ o
- d. Ziele ~ zioła ‘herb’ : e ≈ o
- e. Świat ~ świecie ‘world’ : a ≈ e
- f. Święto ~ świąt ‘holiday’ : ę ≈ ą
- g. Popiół ~ popiele ‘ash’ : ó ≈ e
- h. Nasiono(n.sg.) ‘kernel’ ~
nasienie(n.sg.) ‘seed, sperm’ : o ≈ e

Consonant alternations occur in Polish, but vowel alternations are more common. The loss of a vowel in the ending causes CL in the stem and vice versa. In case of the examples *szkoła* - *szkół* ‘school’ and *słowo* - *słów* ‘word’, the loss of the final vowel, i.e., coda, causes

CL in the stem. Vowel insertion is also found in Polish. Vowel insertion is kind of CL caused by the coda of the final syllable: e.g., *matka* - *matek* 'moher' and *krzesło* - *krzesł* 'chiar'.

In comparison to Czech CL, the Polish CL has more vowel alternations than Czech. That is, vowel alternations prove that there exists difference between the two. Qualitative and quantitative distinctions both exist in Polish. This is not the different case with Czech. Further study is necessary to investigate whether vowel alternations are caused by CL or other phonological processes. This examination will be performed in sections IV on the basis of moraic theory.

3. Russian and other Slavic languages

By comparison with Czech and Polish, vowel alternations in Russian occur much rarer. Vowel lengthening occurs by means of other types: vowel insertions, vowel alternations, but not compensatory lengthening of the same vowel. The reason is that Russian stress is unpredictable, i.e., free stress and that stressed syllables are always stronger and longer than unstressed. In the process of noun declensions stressed syllables may change. For example, *сто́л* M.NOM.SG - *сто́ла* M.GEN.SG, *сестра́* F.NOM.SG - *сестре́* GEN.PL, *го́лоса́* F.NOM.SG - *го́лосу́* F.ACC.SG, etc. This causes some problems. Hayes (1989) claims that in a language where there is a contrastive length distinction, long vowels have two moras and short vowels - one mora. However, Russian has free stress system, so that mora based syllable weight is determined by where stress falls on. Czech stress, which falls on the first syllable all the time, is phonemic, while Russian stress turned out to be phonological. Stressed syllables are determined by the position of primary word stress. In other words, Czech long vowels have two moras, while short vowels have one

mora. By contrast, Russian vowels are selective as either long or short under the condition of stress marking: stressed vowels are long, whereas unstressed vowels are short.

(9) Moraic interpretation of Russian syllable structure

- a. дом - до́ма - дома́
CV:C|# - CV:|CV - CV|CV:
- b. ла́мпа - ламп
CV:C|CV - CV:CC|#
- c. кнѐга - книг
CCV:|CV - CCV:C|#
- d. окнó - о́кон
VC|CV: - V:|CVC

As shown above, Russian vowels are contingent on stress marking, which makes a syllable longer. The same vowel in the stem of the noun may be shortened by the loss of stress in the paradigm of declension or vice versa. As a result of the Russian phonological system and stress marking, CL is commonly found in disyllabic words, whose ending has primary stress, e.g., *яйцо́* - *яи́ц*, *нога́* - *ног*, etc. The vowel lengthening by the loss of stressed endings is regarded as CL. Remember that CL is also found in genitive plural forms by the insertion of so called filling vowels⁶⁾, e.g., *соба́* - *со́в*, *статья́* - *статья́й*, *рука́* - *ру́к*, etc. In the process of stress shift, sometimes each vowel is compensatorily lengthened or the entire moras of stems are lengthened by fleeting vowels or CL.

BCS also has the same free stress system as Russian. The BCS stress pattern is also unpredictable. BCS still has pitch accents, such as acute, circumflex, accent, and grave. BCS pitch accents are as

⁶⁾ Filling vowels are also called fleeting vowels and free vowels.

follows:

(10) BCS pitch accents (Neo štokavian dialect⁷⁾)

Symbol	Pronunciation IPA	Tone	Pitch description
e	[e]	n/a	non tonic short vowel
ē	[e:]	n/a	non tonic long vowel
é	[ě:]	Acute	long vowel with rising tone
ê	[ē:]	Circumflex	long vowel with falling tone
è	[ě]	Accent	short vowel with rising tone
ë	[ē]	Grave	short vowel with falling tone

As shown above, BCS stress system is closely related to pitch accents, or tones. BCS also has free stress system and therefore stress cannot be predictable. Vowel length is determined by lexical items as an inherent feature.

IV. Moraic Analysis on CL and VL in Slavic

1. CVCV → CVC [CV:C] Type

This type of CL is often found in the process of diachronic development from Old Church Slavic (henceforth, OCS) to modern Slavic languages, e.g., BCS, Russian, and Bulgarian, etc. OCS with the linguistic tradition of LCS observed the rule of an open syllable, whose structure is composed of CVCV. Here are some BCS examples.

⁷⁾ Standard Neoštokavian Serbo-Croatian is regarded as standard Bosnian, Croatian, and Serbian. Alexander, Ronelle. 2006. *Bosnian, Croatian, Serbian, a grammar: with sociolinguistic commentary*. Madison, Wis.: University of Wisconsin Press.

(11) OCS BCS

- | | | | | |
|---------|---|--------|----------|-----------------------|
| a. borъ | → | [bo:r] | ‘forest’ | |
| b. rogъ | → | [ro:g] | ‘horn’ | |
| c. medъ | → | [me:d] | ‘honey’ | (Kavitskaya, 2002: 5) |

These examples exhibit the case that CV1CV2 shifted into CV1C, where V1 is compensatorily lengthened by the loss of the final vowel or coda. A disyllabic structure changed into a monosyllabic structure with a lengthened vowel. This kind of CL is common in Russian as well. Especially, the structural shift from OCS to Old Russian (OR) exhibits many instances of CL as follows:

(12) OCS

Old Russian

- | | | | |
|---------|---|------|---------|
| a. domъ | → | домъ | ‘house’ |
| b. synъ | → | сынъ | ‘son’ |
| c. denъ | → | день | ‘day’ |
| d. snъ | → | сонъ | ‘dream’ |

In OCS reduced vowels used to be articulated as weak vowels. That is, reduced vowels make an open syllable structure, i.e., CV1CV2. However, reduced vowels lost their vocalic feature and began to be silent and function as a sign: /ъ/ functions as a hard sign and /ь/ – as a soft sign.⁸⁾ (12a–b) display that [o] and [y] are lengthened into [o:] and [y:] by CL, respectively. As shown in (12c–d), the full vocalization of the reduced vowels ъ and ь is considered CL, since the ultra short vowels are pronounced as full vowels. This full vocalization occurs only in a strong position defined by Havlik’s Law. Havlik’s Law is defined as follows:

⁸⁾ Reduced vowels have lost their vocalic sound in weak positions already in 11C. e.g., /сынъ/ > [син], /къто/ > [кто], /что/ > [что], and /горъка/ > [горка] (Хабургаев, Г. А. 1974. Старославянский язык.)

(13) Havlik's Law

'Word final jers and jers in syllables followed by vowels other than jers become weak. Weak jers are dropped. Jers in syllables followed by a weak jer become strong. Strong jers merge with one or several of the 'non reduced' vowels.'

(Isačenko, 1970: 73)

This phenomenon of reduced vowels occurs differently from each Slavic dialect. Russian /ѣ/ and /ѥ/ changed into [o] and [e] in strong positions, while they dropped in weak positions. (Kiparsky, 1979, Lunt, 2001, Matthews, 1960, Хабьграев, 1974)

With regard to the intervening consonant C2 of C1VC2V structure in Slavic, one should consider phonological features of the consonant and define what condition makes an influence on vowel lengthening. In North Čakavian dialect of BCS the phonological properties of the intervening consonant C2 determine the occurrence of CL. In fact, North Čakavian CL occurs only before a sonorant.

(14) North Čakavian Dialect

- a. *darǫ > da:r (gift)
- b. *pragǫ > prag (threshold)
- c. *makǫ > mak (poppy) (Kavitskaya, 2002: 124)

CL occurs under the condition that each Slavic language has. The consonant C2, preceded by V1 experiencing CL, must be sonorant for CL as in (14a). The velar consonants /g/ and /k/ in (14b c) do not allow for CL of V1. The condition of this CL is formularized as follows:

(15) CL in North Čakavian Dialect

- a. C₁V₁C₂V₂ : /V₁/ → [V₁:] /_____ C₂#

$$b. C_1V_1C_2V_2 : /V_1/ \rightarrow [V_1] / \text{_____ } C_2\#$$

[+sonorant]
[elsewhere]

As shown above, the properties of the consonant C2 are closely associated with the condition, which triggers CL. Moreover, Czech and Polish also have different phonological conditions for CL. CL occurs before sonorants and voiced fricatives in Czech, while CL occurs before sonorants, voiced fricatives, and voiced stops in Polish. The different condition is represented as follows:

(16) CL in Czech and Polish

i) Czech

- | | | |
|--------------------------|--------|---------|
| a. *domǫ | > du:m | 'house' |
| b. *bogǫ > *boγǫ > *bofǫ | > bu:x | 'god' |
| c. *rodǫ | > rod | 'kin' |
| d. *nosǫ | > nos | 'nose' |

(Ibid. pp.125)

i) Polish

- | | | |
|----------|--------|----------------------|
| a. *domǫ | > do:m | 'house' (Old Polish) |
| b. *dǫbǫ | > da:b | 'oak' |
| c. *vozǫ | > wo:z | 'cart' |
| d. *sokǫ | > sok | 'juice' |

(Ibid. pp.125)

The condition to license CL in above mentioned Slavic dialects has similarity to the hierarchy of sonority: fricative < plosive < nasal; sonorant; /v/ < liquid < vowel (sonority increases monotonically from left to right) (Хабыраев, 1974: 106). Phonological conditions for CL in Czech and Polish can be formalized as in (17).

(17) Different Conditions for CL in Czech and Polish

a. Czech

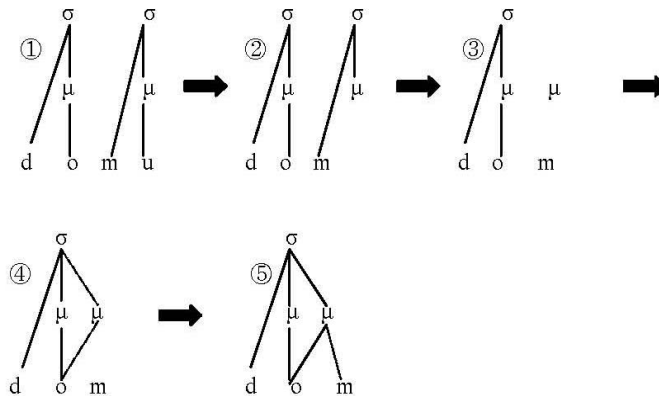
$C_1V_1C_2V_2$: /V₁/ → [V₁:] /_____ C₂#
 [+sonorant]/ [+voiced fricative]

b. Polish

$C_1V_1C_2V_2$: /V₁/ → [V₁:] /_____ C₂#
 [+sonorant]/[+voiced fricative]/
 [+voiced stop]

These phenomena of CL are theoretically analyzed from a perspective of moraic theory as follows:

(18)



Example (18) above represents the process of CL of Polish lexemic item dom 'house'. According to Hayes (1989), CL occurs when a mora bearing segment is deleted and the stray mora is attached to a preceding segment. As shown in (18), the disyllabic word form /domu/ lost the final vowel /u/ and then it lost one syllable, ending up a

monosyllabic word. As represented in ② of (18), the second mora bearing syllable is deleted and becomes ③ with one mora astray. This stray mora is linking to the preceding vowel like ④ and it renders vowel lengthening by combining two moras into one syllable, which is heavy enough to pronounce the vowel long. This phenomenon like ③ is called 'Parasitic Delinking'⁹⁾.

2. CVCV → CVV → CV [CV:] Type

This type of VL is illustrated in adjectival endings contracted in Czech and BCS by dropping /j/, whose origin is a demonstrative pronoun /jъ/, /ja/, /je/. According to Lunt (2001), there used to be four types of declensions: i) two fold nominal declension (hard vs. soft), ii) pronominal declension, iii) compound declension, and iv) simple nominal declension including anomalous types (consonantal declension forms). Among these types of declension, compound declension is closely related with this type of VL in OCS, Czech and SC. Compound declension consists of twofold nominal declension plus pronominal declension. That is, a twofold declensional form *HOBJ* 'new' and a demonstrative form **jъ* are used together to mark definiteness. In Russian these compound forms developed into long form adjectives, while In Czech and BCS occurred contraction of the stem and the ending by the loss of /j/ and VL as the result of that.

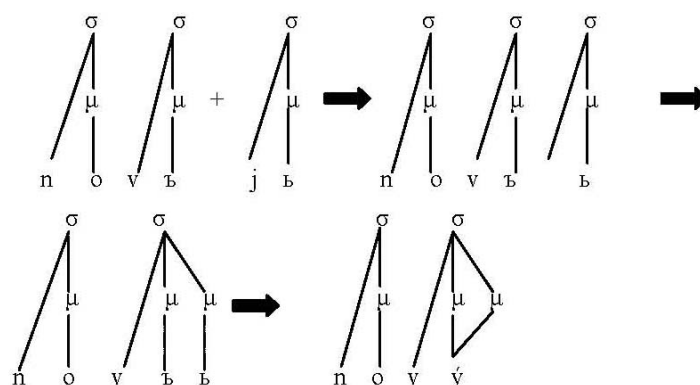
⁹⁾ The term Parasitic Delinking is that syllable structure is deleted when the syllable contains no overt nuclear segment Hayes, B. 1989. Compensatory lengthening in moraic phonology. *Linguistic inquiry* 20:253-306.

(19)

	LCS	R	CZ	SC
N.Sg.Masc	НОВЪ+јѣ	Новый	Nový	Novī
N.Sg.F	НОВА+ја	Новая	Nová	Novā
N.Sg.Neut	НОВЪ+је	Новое	Nové	novō

As seen in the table (19), the phoneme /j/ is dropped and two reduced vowels become longer in CZ and BCS by combining the two reduced vowels into one. This kind of VL does not occur in Russian where the phoneme /j/ is preserved without any VL. However, CZ and BCS exhibit the dialectal development and function of /j/, i.e., *НОВЪ + *јѣ* → (*НОВЪ + ѣ*) → nový (CZ), novī (BCS), *НОВА + ја* → (*НОВА + а*) → nová (CZ), novā (BCS), etc. (Townsend and Janda, 1996: 177–190). The phoneme /j/ in Russian does not disappear between two reduced vowels, and thus VL does not occur.

(20) Moraic analysis of VL by contraction



As seen in (20) the loss of /j/ triggers the contraction and consequently makes the reduced vowels combined into a longer vowel

taking two moras in one syllable.

VL of this kind is not restricted to endings. VL can be found in verbal conjugation and even in the domain of nouns of CZ.

(21) LCS		CZ	R
pojasъ	'belt'	pás	пóяс
bojati se	'fear'	bát se	боя́ться

As seen in (21) above, VL is triggered by the destiny of the intervocalic phoneme /j/. The loss of /j/ makes two vowels merge into a long vowel: VjV → VV → V: (Townsend and Janda, 1996: 95). This VL also represents that a long vowel in CZ has two moras, conforming to the mora based theoretical analysis.

3. CVC → CV [CV:] Type

In the process of the diachronic development of PIE diphthongs into Slavic, some diphthongs of PIE changed into a long vowel. This is a purely historical development of diphthongs, whose destiny is phonologically determined in Slavic. The consequence of CVC|CVC 'sen|dām' exhibits that the first syllable CVC changed into a long vowel, which is not phonetically determined as long. However, a stressed vowel in Russian becomes stronger and two times longer than an unstressed one. The following examples represent the case mentioned so far.

(22) Early Proto Slavic (EPSl)	LCS	R
<u>sen</u> dām̐ 'I sit down'	sɛdɔ	ся́ду
<u>len</u> gām̐ 'I lie down'	lɛgɔ	ля́гу

Diphthongs may appear different either in tautosyllabic (closed) position or in heterosyllabic (open) position in Russian. Russian does not distinguish vowel length, which is phonological. In contrast, Czech has purely phonemic vowel length differences.

(23) PIE diphthongal forms & internal variation in Russian

a. ou > ow > LCS ov : *PIE rou/ruu a/ru tei

→ R. ров/рвать/рыть

b. CVC > CV: ров > рыть

c. ъv > ы : nazъvati → nazyvajotъ

This kind of linguistic phenomenon occurs in Russian as a result of syllabic positions, which turned out to be of language specific in Russian. This linguistic change is different from compensatory lengthening, which occurs due to the change of an adjacent consonant or vowel. This should be understood by the difference in positional variations. In this case, length distinction depends on where stress falls on in a word. According to Russian phonology, stressed vowels are twice longer than any other unstressed vowels.

V. Conclusion

VL is the result of phonemic or phonological operations occurring in Slavic. A variety of synchronic variations is based on diachronic conditions by the linguistic properties of *PIE, Proto Slavic, and LCS. Each Slavic dialectal group inherited some properties of ancestral languages and developed them into their own linguistic properties. VL should be considered either by phonological operations or by phonetic and phonemic operations. Czech has length distinction among its

vowels, while Russian does not have the phonemic distinction in vowels.

As proposed by Hayes(1989), CL is i) a context free process, ii) subject to prosodic constraints: the deletion of a mora bearing segment triggers CL, iii) Moraic theory is suited for the formal description of the prosodic frame, and iv) the prosodic frame is partly language specific. These factors are well suited for Slavic VL and CL. In conclusion, Slavic data prove that CL and VL are both context free process and they are closely associated with prosodic constraints in Slavic. Moreover, moraic theory is in favor of the analysis of Slavic phonological system including VL and CL.

This research, unfortunately, could not extend to the range of the investigation on Slavic prosody, which developed in different ways in each Slavic group, i.e., East Slavic, West Slavic, and South Slavic. This research leaves the Slavic prosodic factors open to next research topic for Slavic or general linguists in this field.

References

- Alexander, Ronelle. 『Bosnian, Croatian, Serbian, a grammar : with sociolinguistic commentary』. Madison, Wis.: University of Wisconsin Press. 2006.
- Campbell, Lyle. 『Historical linguistics : an introduction』. Edinburgh: Edinburgh University Press. 1998.
- Crystal, D. 『A dictionary of linguistics & phonetics』. Wiley Blackwell. 2003.
- De Chene, B., and Anderson, S. R. 『Compensatory lengthening. Language』 55: 505-535. 1979.
- Hayes, B. 『Compensatory lengthening in moraic phonology』. 『Linguistic inquiry』 20: 253-306, 1989..
- Hock, H. H. 『Compensatory lengthening: in defense of the concept 'mora'』. 『Folia Linguistica』 20: 431-460, 1986..
- Hyman, L. M. 『A theory of phonological weight』. Foris: Dordrecht. 1985.
- Isačenko, A. V. 『East Slavic morphophonemics and the treatment of the jers in Russian: A revision of Havlik's Law』 『International Journal of Slavic Linguistics and Poetics』 13:73-124, 1970.
- Kavitskaya, Darya. 『Compensatory lengthening : phonetics, phonology, diachrony』, Outstanding dissertations in linguistics. New York: Routledge, 2002.
- Kiparsky, Valentin. 『Russian historical grammar』. Ann Arbor: Ardis, 1979.
- Levin, J. 『A Metrical Theory of Syllabicity』, Massachusetts Institute of Technology, 1985.
- Lowenstamm, J., and Kaye, J. 『Compensatory lengthening in Tiberian Hebrew』. 『Studies in compensatory lengthening』:97-132, 1986.
- Lunt, H. G. 『Old Church Slavonic Grammar』. Berlin: Walter de Gruyter, 2001.

- Matthews, W. K. 『Russian historical grammar』. London,: University of London, Athlone Press, 1960.
- McCarthy, J. 『Formal Problems in Semitic Phonology and Morphology』, Doctoral dissertation: MIT, Cambridge, Massachusetts, 1979.
- McCarthy, J., and Prince, A. 『Prosodic morphology』 1986. ms. University of Massachusetts, Amherst and Rutgers University, New Brunswick, 1996.
- McCawley, J. D. 『The phonological component of a grammar of Japanese』. The Hague and Paris: Mouton, 1968.
- Newton, B. 『The generative interpretation of dialect: a study of modern Greek phonology』. London, New York: Cambridge University Press, 1972.
- Townsend, Charles Edward, and Janda, Laura A. 『Common and comparative Slavic : phonology and inflection : with special attention to Russian, Polish, Czech, Serbo-Croatian, Bulgarian』. Columbus, Ohio: Slavica Publishers, 1996.
- Townsend, Charles Edward, and Komar, Eric S. 『Czech through Russian』. Bloomington, Ind.: Slavica, 2000.
- Хабургаев, Г. А. 『Старославянский язык』, 1974.

Abstract

Vowel Lengthening in Slavic: Diachronic Conditions and Synchronic Variations

Hyoung-sup Kim

This research investigates Vowel Lengthening (VL), including Compensatory Lengthening (CL), in Slavic languages. Slavic languages inherited the linguistic properties from *Proto Indo European (*PIE), Proto Slavic, and Late Common Slavic (LCS) and developed these properties into their own dialectal variations. That is, each Slavic group adopted the Slavic universal properties and developed them into its own language specific properties.

VL can occur either by phonemic factor or in phonological factor. The latter can be found in Russian where vowel length marking is not phonemic, but phonological, whereas the former can be found in Czech and BCS where length marking is purely phonemic and there is a contrast between long vowels and short vowels. VL in Slavic can be found in Czech, Polish, BCS etc., especially in the diagram of nouns. Czech with purely phonemic length is in contrast to Russian in the determination of vowel length. Polish has the systematic stress patterns where primary stress falls on penultimate syllable.

As a part of VL, CL occurs under the following condition: in the structure of $C_1V_1C_2V_2$, the length of V_1 becomes longer due to the loss of V_2 . Therefore, CL refers to “a set of phonological phenomena wherein the disappearance of one element of a representation is accompanied by a corresponding lengthening of another element” (Kavitskaya 2002:3). This kind of CL can be seen in Slavic linguistic

history, especially in the process of diachronic development from LCS to modern Slavic languages. Reduced vowels in Old Church Slavic (OCS), whose properties are inherited from LCS and even *PIE, exhibit the full process of CL by dropping reduced vowels in weak positions or in the final position of words. Open syllable word structure of LCS tradition changed into closed syllable structure, whose structure is of CVCV → CV:C by dropping the final reduced vowel. This change made an influence on the linguistic change of each Slavic group and each Slavic language. CL is a context free process and subject to prosodic constraints. Moraic theory is suited for the formal analysis on the Slavic language specificity. In this respect, Slavic data demonstrates that moraic theory is well suited for Slavic CL and VL and also CL turned out to be a context free process even in Slavic.

Key-words: Vowel Lengthening(장모음화), Compensatory Lengthening(보상적 장음화), Mora(모라), Moraic theory(모라 이론), Reduced vowel(약화모음)

E-mail: kimhyoungsup@hotmail.com

논문심사일정

투고일자 : 2011. 2. 14

심사일자 : 2011. 3. 7

게제일자 : 2011. 3. 17