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Korean partial reduplication in Serial Template Satisfaction

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Kim, Jungyeon. 2020. Korean partial reduplication in Serial Template Satisfaction. *Studies in Phonetics, Phonology and Morphology*, 26.2. 261-277. This study focuses on partial reduplication that involves doubling of only part of the base observed in Korean morphology. Previous attempts conducted within different frameworks of Optimality Theory as well as pre-OT theories do not adequately give a consistent, unified explanation for several important issues associated with Korean partial reduplication such as the differences between CV and CVC reduplicants and various classes of partial reduplication. This study analyzes the seemingly problematic cases within the framework of Serial Template Satisfaction, a theory of reduplication embedded in Harmonic Serialism, which is a derivational version of Optimality Theory. In STS, template satisfaction is a gradual process that plays out over the course of a derivation using several different natural operations. This study shows that the predictions of STS are supported by the disadvantages of many other theories of reduplication including Base-Reduplicant Correspondence Theory. **(Sungkyunkwan University, Lecturer)**

Keywords: Korean partial reduplication, Base-Reduplicant Correspondence Theory, Harmonic Serialism, Serial Template Satisfaction

1. Introduction

Reduplication has always attracted the attention of linguists. As Sapir formerly noted, “Nothing is more natural than the prevalence of reduplication; in other words, the repetition of all or part of the radical element” (Sapir 1921: 76). Korean is known to be among the languages that make use of the natural linguistic phenomenon. Ideophones, for instance, are one of the inventories that benefit from this strategy, which is classified into two types: total and partial reduplications.

This study focuses on the patterns of partial reduplication, under which only part of the base repeats. This type of reduplication has been debated by many researchers including derivational phonology (Kim 1984, Chae 1986), prosodic morphology

(McCarthy and Prince 1986, Suh 1993, Jun 1994), and Optimality Theory (Kim 1996, Chung 1997, Kim 1997, Kang 1998, Ahn 2000). Although most pre-OT theories attempt to capture the relationship between base and reduplicant, it is undoubtedly challenging to explain why other possible patterns cannot become proper outputs in their framework. Many of these problems have been solved in OT, in which the interaction of base and reduplicant identity with phonological constraints leads to various effects depending on their rankings. However, Korean partial reduplication presents clear challenges even to OT. One of the issues that are not trivial is a constraint ranking paradox, i.e., a contradiction between different input-output mappings. Many earlier studies do employ different rankings for different types of reduplication in the language.

The present study explains Korean partial reduplication using a different mechanism called Serial Template Satisfaction (STS, McCarthy et al. 2012). STS is a theory of reduplicative copying in Harmonic Serialism (HS, McCarthy 2010), a derivational version of OT, where there is no base-reduplicant correspondence relation. This study claims that STS is preferable to most other theories of reduplication including Base-Reduplicant Correspondence Theory (BRCT, McCarthy and Prince 1995) in that STS serves to give a simpler, unified account of different types of partial reduplication in Korean.

This article begins (Section 2) with the data of partial reduplication observed in Korean. Section 3 reviews previous analyses and discusses controversial issues. Section 4 then continues by a brief overview of HS and STS, followed by the analysis of reduplication patterns under STS, and finally Section 5 concludes.

2. Data

Korean involves two groups of partial reduplication, prefixing and suffixing, as given in (1). In both types, reduplicants show two syllable types, i.e., CV as in *sa-sak*, *pusi-si* and CVC as in *kol-kolu*, *alt'al-t'al*. These two different syllable types have led to serious issues in the literature since CV reduplicants are not a problem in the OT, within which the emergence of the unmarked (TETU, McCarthy and Prince 1994) serves to choose the unmarked syllable structure, whereas CVC ones are not easily explained by the TETU ranking.

(1) Partial reduplication in Korean

a. Prefixing

Monosyllabic base

sak	sa-sak	‘crispy’
tsik	tsi-tsik	‘sound of tearing’
pung	pu-puŋ	‘sound of car’
k’æŋ	k’æ-kæŋ	‘whining’
p’aŋ	p’a-paŋ	‘bang’

Bisyllabic base

tuŋsil	tu-tuŋsil	‘floatingly’
k’otek	k’o-k’otek	‘cock-a-doodle-doo’
kolu	kol-kolu	‘evenly divided’
t’ekul	t’ek-t’ekul	‘rolling’

b. Suffixing

Bisyllabic base

pusi	pusi-si	‘unkemptly’
ats^{h}a	ats^{h}a -ts^{h}a	‘my goodness’
p^{h}alɨ	p^{h}alɨ-lɨ	‘shiveringly’
alt’al	alt’al-t’al	‘tipsy’
tsuluk	tsulu-luk	‘dribbling’

Notice also in (1) that although examples such as *k’æ-kæŋ* and *p’a-paŋ* have been typically analyzed as an infixing (or internal) class by earlier researchers as in *k’æ-**kæ**-ŋ* and *p’a-**pa**-ŋ*, the current study views this type as prefixing, based on the fact that Korean has no infix at all. I will have a detailed discussion on the matters of reduplication classes as well as reduplicant templates in the following sections.

3. Previous studies

A large number of researchers have investigated Korean partial reduplication (Kim 1984, Chae 1986, McCarthy and Prince 1986, Suh 1993, Jun 1994, Kim 1996, Kim 1997, Kang 1998, Chung 1999, Ahn 2000, Kim 2003, 2009, 2014, among others). First, Jun (1994) proposes an analysis of Metrical Weight Consistency (MWC), assuming that mora is a basic unit in Korean phonology. He claims that in the example of *tsululuk*, the reduplicant *tsuluk* is copied; then MWC applies to preserve

the number of feet, resulting in *tsulu-luk* with the final consonant of the reduplicant dropped. His analysis is problematic for an instance like *kolkolu*.

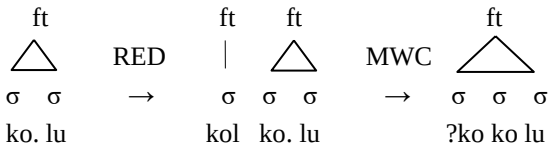


Figure 1. MWC analysis of *kolkolu*

Suh (1993) gives a similar traditional approach to the phenomenon, proposing the principle of Weight Complementarity, which relies on the concept that the last consonant of the base is extrasyllabic, following McCarthy and Prince (1986). Although his analysis can account for a case like *kolkolu* that is problematic for Jun (1994), what he calls "dual aspects of weight" undermines his claim, where extrametricality is applicable to all kinds of Korean processes except to partial reduplication.

After pre-OT phonology, many researchers have analyzed Korean partial reduplication within the Optimality-theoretic framework (Kim 1996, Kim 1997, Kang 1998, Chung 1999, among others). For example, Kim (1997) tackles one important issue known as the asymmetry between CV vs. CVC syllable types, proposing a couple of new constraints. *CLASH prohibits identical template from being adjacent to each other, choosing *kol-kolu* and *tu-tuŋsil* instead of **ko-kolu* and **tuŋ-tuŋsil*. In addition, *EFFORT disfavors words like **p'ap'aŋ* with two laryngeal segments requiring more articulatory effort than *p'apaŋ*. Kim (1997) also uses the TETU ranking (MAX-IO » NOCODA » MAX-BR) to explain a case like *tsulu-lu-k*, arguing that the infix *-lu-* should be its reduplicant. However, we would certainly need a single unified account rather than having several different solutions to the asymmetry issue.

Other OT analyses attempt to solve the problem of CV/CVC differences using the ranking of FINAL-C » NOCODA » MAX-BR, ALIGN-R, under which *tsulu-**lu**-k* is preferable to *tsulu-**luk*** (Kim 1996, Chung 1999). The idea of viewing *tsululuk* as an infixing class is questionable in Korean, since, as mentioned earlier in the previous section, Korean has no single piece of evidence that infixation occurs. The situation where infixation has to exist only in partial reduplication in the language would be

quite suspicious. Kim (2003) suggests an alternative ranking schema for choosing *tsulu-**luk*** instead of *tsulu-**lu**-k*, but his solution fails to analyze other suffixing types like *pusi-**si***, as shown in tableaux (2) and (3). While the infixing candidate (b. *tsulu-lu-k*) wins over the suffixing one (c. *tsulu-luk*) with just one less violation in (2), the most highly ranked constraint requiring a prosodic word to contain a coda consonant chooses the wrong candidate (b. *pusi-sik*) as optimal in (3).[1]

(2) Analysis of *tsululuk* in BRCT (Adapted from Kim 2003: 372)

(3) Analysis of *pusisi* in BRCT

(2) /tsuluk/-RED	FINAL-C	NOCODA	MAX-IO	MAX-BR	ALIGN-R
a. tsuluk-luk		**!		**	
b. → tsulu-lu-k		*		***	
c. tsulu-luk		*	*	**	*!
d. tsuluk-lu	*!	*		***	*
e. tsulu-lu	*!		*	***	
(3) /pusi/-RED					
a. pusi-pusi	*!				
b. 💣 pusi-sik		*		**	*
c. → pusi-si	*!			**	
d. pusi-pu	*!			**	**
e. si-si	*!		**		

More severe problems are found in Kang (1998) and Chung (1999). As briefly mentioned in the introduction, they use different constraint rankings for different types of partial reduplication, which is well known as a *ranking paradox*. For them, cases involving CV reduplicants such as ***tu**-tuŋsil* and *tsulu-**lu**-k* require the TETU ranking (MAX-IO » NOCODA » MAX-BR), whereas ones containing CVC

[1] A reviewer has mentioned the possibility that a structural constraint that inhibits a consonant insertion might give a better explanation here when a base has no syllable-final consonant rather than the ranking schema suggested by Kim (2003).

reduplicants like ***t'ek***-*t'ekul* and *alt'al*-***t'al*** require MAX-IO » MAX-BR » NOCODA. This situation may raise critical theoretical questions of whether it is appropriate to reverse the TETU ranking only for CVC types and whether a single language has to allow different rankings to explain the same morphological process. We would need a solution where the same grammar can work for all types of partial reduplication in Korean.

Finally, Kim (2003, 2009, 2014) could be among those who examine Korean partial reduplication most carefully. He provides strong arguments in opposition to previous analyses of OT as well as derivational phonology concerning the unsolved problems we have discussed above. One of the new ideas that he proposes is that a reduplication process is a consequence of dissimilation rule application, as shown in (4). The first step is to form a fully reduplicated word (tuŋsil-tuŋsil) and then reduce the reduplicant to CVC syllable (tuŋ-tuŋsil); finally, the reduplicant is reduced to CV (tu-tuŋsil) by the rule requiring one of the two similar consonants (ŋt) to be deleted. If this is the case, however, the rule has to explain other phenomena observed in the Korean grammar. We can easily find a bunch of words in which they look perfectly fine though the dissimilation rule is not clearly obeyed, i.e., *nak<u>t</u>am* 'disappointment,' *kak<u>s</u>ʌ* 'mémoire,' *kaŋ<u>t</u>ol* 'river stone,' *toŋ<u>ts</u>ʌn* 'coin' and so on.

(4) Analysis of *tu-tuŋsil* (Adapted from Kim 2009: 128)

tuŋsil	
↓	Full reduplication
tuŋsil-tuŋsil	
↓	RED reduction to CVC
tuŋ-tuŋsil	
↓	Dissimilation: KCVK{C,#}→CVK{C,#} where K=/k/ or /ŋ/
tu-tuŋsil	

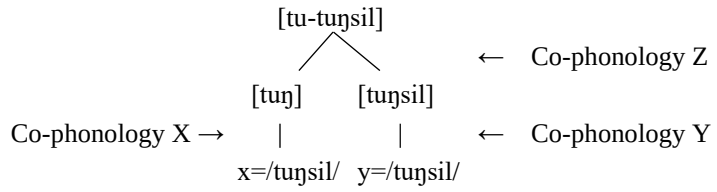
Other possible issues raised by this rule is an ordering paradox that happens in the interaction of different kinds of phonological rules. That is, in the example like *tutuŋsil* in which only dissimilation applies, the reduplicant is reduced (***tuŋ***-*tuŋsil* → ***tu***-*tuŋsil*), while in *p'apaŋ* where intervocalic weakening and delaryngealization apply together with dissimilation, the base is delaryngealized (*p'a*-***p'aŋ*** → *p'a*-***paŋ***).[2]

[2] A reviewer has added other example such as *k'otek* → *k'o-k'otek* where weakening and

This type of rule ordering paradoxes is an unfortunate state of affairs that may arise as a natural consequence of any model which incorporates ordered rules. However, things may be complicated by the fact that it is not evident whether it is exceptional or not. Even though Kim (2003: 18) states that he would need "more cases" from "a variety of languages" to confirm this rule reversion shown in dissimilation, if that ordering is treated as exceptional, grammars may accommodate a class of exceptionally ordered derivations, which could severely undermine the idea of rule ordering in the SPE model of phonological organization. Then, we would have to accept that the rule has been misformulated, which has created the problem; or, we might have to radically suggest that the whole idea of ordering is mistaken and hence should be forbidden.

Kim (2009) also gives an analysis using Morphological Doubling Theory (MDT, Inkelas and Zoll 2005), which is primarily designed to account for reduplication. As shown in (5), MDT views partial reduplication as truncation regulated by the co-phonology of only one of the daughters (mother = [tu-tuŋsil], daughters = x & y). With no BR correspondence, each morphological construction is indexed to particular phonology, i.e., cophonology, which makes MDT face a theoretical challenge. The phonology of the reduplicative morpheme is not independent of that of the base; the base and reduplicative morpheme have a shared input, and reduplication involves phonological doubling of the base. Therefore, both halves of the reduplicative construction should be subject to the same phonological grammar.

(5) Analysis of *tutuŋsil* in MDT (Adapted from Kim 2009: 140)



delaryngealization do not simply apply in the intervocalic position while the reduplicant is reduced to CV. This sort of instance could raise the inevitable question of when a rule should apply or when it should not since the environment sometimes does not appear to make the final decision, which may cause a burden to the idea of the rule application.

(i) Co-phonology X

/tuŋsil/	TRUNCATE	FAITH-IO
a. tuŋsil	*!	
b. → tuŋ		***
c. tu		****!

(ii) Co-phonology Y

/tuŋsil/	FAITH-IO	TRUNCATE
a. → tuŋsil		*
b. tuŋ	***!	
c. tu	****!	

(iii) Co-phonology Z

/tuŋ-tuŋsil/	DISSIMILATE	FAITH-IO
a. tuŋ-tuŋsil	*!	
b. → tu-tuŋsil		*
c. tu-tusil		**!

Kim (2009) has a more drastic argument in his study of comparing reduplication of Korean and Turkish. He claims that the two languages are both agglutinative and that they are both included in an Altaic language family, where both languages with SOV word order possess prefixation only, at which this point is reasonably disputable. It is very true that they are a type of agglutinative language with morphology that primarily uses agglutination, where complex words are formed by stringing together morphemes without changing them in phonetics. Yet, as Kim (2009: 123) acknowledges, the inclusion of Korean into the Altaic family is quite controversial. Although Ramstedt (1957) first argued that Korean should be included in the language family, many linguists dispute the alleged affinities of Korean to the Turkic-Mongolic-Tungusic group, which is original members of the Altaic family. Recently, Robbeets (2017) even proposed that Korean originated as a hybrid language of Transeurasian and Austronesian languages.

Furthermore, Kim's (2009) claim that Korean has no prefix in the language may be immediately refuted by a plethora of Korean words that begin with prefixes such as *kun-sal* 'extra flab,' *mat-t'al* 'oldest daughter,' *oœ-atɨl* 'only son,' *ts'ʌt-saraŋ* 'first

love,' and so on. It is highly accurate to say that there is no infixing (or internal) type of reduplication in Korean due to the fact that the language has no infix at all, but at the moment we cannot immediately embrace the argument that there is no prefixing type of reduplication because Korean shows agglutination only by suffixation.

4. Harmonic Serialism

In this section, I provide an explanation for Korean partial reduplication using a theory of reduplication, situated within Harmonic Serialism (HS, McCarthy 2010), called Serial Template Satisfaction (STS, McCarthy et al. 2012). HS is a derivational version of Optimality Theory (OT, Prince and Smolensky 1993). The dominant version of OT can be called Parallel OT (P-OT), where the mapping from underlying to surface representation is direct with no intermediate stages. HS differs from P-OT in two respects, (i) gradualness and (ii) the existence of a GEN→EVAL loop. First, gradualness refers to a property of HS's GEN component; that is, it can make only one change at a time. Second, while P-OT has a derivation consisting of a single pass through GEN and EVAL, in HS the output of EVAL is submitted as a new input to GEN, in a GEN→EVAL loop. This loop continues until it reaches convergence, when EVAL chooses as winner a candidate that is identical to the most recent input. That winner is the final output of the grammar. A crucial result of HS's basic architecture is that derivations have to show monotonic harmonic improvement until convergence; namely, in every HS derivation … →A→B→ … produced by some grammar, the highest-ranking constraint in the grammar that distinguishes between A and B has to be a constrain that favors B over A. The consequence of this architectural imperative of HS are ubiquitous (McCarthy 2010).

STS within which the present study analyzes partial reduplication of Korean presupposes, following Marantz (1982), that reduplicative affixes are templates. STS also assumes the basic premises of prosodic morphology following McCarthy and Prince (1986), where in partial reduplication the template is a prosodic constituent syllable (σ) or foot (ft) and constraints on these constituents determine how templates are satisfied. Specifically, two aspects of STS are relevant to the main interest of this study: (i) the operations that build prosodic structure and (ii) copying operation (McCarthy et al. 2012). First, prosodic structure is created by an operation Insert (X) that inserts a prosodic constituent node of type X and integrates it into existing structure. That is, X can be parsed as a dependent of a constituent of type W(W>X)

as in [ ]$_{ft}$→[σ]$_{ft}$ by Insert(σ) or X can parse as its dependents one or more pre-existing constituents of type Y(X>Y) as in pa→[pa]$_{σ}$. Second, GEN includes an operation Copy(X) that creates a copy of a string of constituents of type X, places that copy anywhere, and integrates it into pre-existing prosodic structure. Here, the constituents copied in any single application of GEN are required to be of the same type.

STS is different from BRCT in that the former does not recognize base or reduplicant as category labels in phonological representation. The Copy(X) in STS is the sole source of reduplicative identity since surface differences between base and reduplicant are the result of copying fewer Xs than the base contains or they are the effect of processes applying after copying. In STS, a reduplicative template of type X can be satisfied by copying a string of one or more constituents of type X-1 from the adjoining stem or it can be satisfied by populating the template with empty constituents of type X-1. The choice between these two ways of satisfying a template is determined by constraint ranking, which also determines how the copying operation interacts with phonological processes.

Now, let us consider how STS deals with the Korean examples that have been the subject of considerable debate among previous researchers for many years. First, *tutuŋsil* has caused a major issue in the framework of BRCT, where reduplicative morphemes of CV vs. CVC have two different constraint rankings. While earlier studies including OT approaches fail to give consistent, satisfying explanations, the predictions of STS can be argued to be a superior theory of reduplication. To analyze the seemingly problematic example *tutuŋsil* in STS, we need the following constraints as shown in (6): HD(σ), *COPY(σ), and NOCODA. HEADNESS(X) and NOCODA are popular constraints that have been used in P-OT, and the concept of *COPY(σ) is also not so puzzling if you capture that of COPY(X) introduced just above.

(6) Constraints relevant for partial reduplication in Korean

a. HEADNESS(X) (HD(ft), HD(σ)) (Selkirk 1995)

Assign a violation mark for every constituent of type X that does not contain a constituent of type X-1 as its head.

b. *COPY(X) (McCarthy et al. 2012)

Do not copy strings of elements of type X; a single application of COPY(X) brings a single violation of *COPY(X).

c. NoCoda (Prince and Smolensky 1993)
Syllables must have no codas.

In Korean, the reduplicative template is the syllable σ, CV or CVC. HS derivation begins with the σ template prefixed to the fully prosodified stem, as shown in the input cell in the upper left of tableau (7). This input appears as candidate (7a), which violates Headness(σ) since its first syllable is headless. Candidates (7b) is the result of an application of Copy(X), which was produced by Copy(σ), which copies a string of one syllable and parse it into the empty σ node. Of these three candidates, the most harmonic is (7c) because although it violates NoCoda, the higher-ranking constraints Hd(σ) and *Copy(σ) cast the deciding vote for (7c). Here, note that the tableaux used in this study are in the comparative format introduced by Prince (2002). That is, the number of violations is indicated by an integer, and in loser rows, a cell may contain W, L, or neither depending on whether the constraint favors the winner, the loser, or neither; because every loser-favoring constraint must be dominated by some winner-favoring constraint, every L is preceded in the same row by a W in a properly ranked tableau.

(7) Step 1 of *tu-tuŋsil*

σ + σ σ tuŋ. sil	Hd (σ)	*Copy (σ)	NoCoda
a. σ + σ σ tuŋ. sil	1W		2
b. σ + σ σ tuŋ tuŋ. sil		1W	3
c. → σ + σ σ tu tuŋ. sil			2

Although (7c) is the desired output form, the derivation is not yet complete. HS requires a final convergence step, where the most harmonic candidate is identical to the input. At step 2, this derivation converges: the σ template and the syllable it contains are headed, and it is copying fewer syllables than the base contains:

(8) Step 2 of *tu-tuŋsil*

σ + σ σ tu tuŋ. sil	HD (σ)	*COPY (σ)	NOCODA
a. → σ + σ σ tu tuŋ. sil			2
b. σ σ + σ σ tu tuŋ. sil	1W		L
c. σ σ + σ σ tuŋ. sil tuŋ. sil		1W	L

Next, let us examine another example of prefixing type of reduplication, *k'ækæŋ*, which has long been considered a word with a delaryngealized reduplicative morpheme of infixing CV type. As mentioned in the previous section, this causes a problem because Korean has no infix anywhere else in the grammar. To analyze *k'ækæŋ* within the framework of STS, we need two more constraints as shown in (9): *LARYNGEAL and ID(laryngeal), both of which have been widely used in P-OT.

(9) Constraints relevant for partial reduplication in Korean

a. *LARYNGEAL (Lombardi 1999)

Segments should not have marked laryngeal features.

b. ID(laryngeal) (Lombardi 1999)

Consonants should be faithful to their underlying laryngeal specifications.

Apart from the candidate lacking its head (10c) and the candidate copying one more syllable (10a), the choice in (10) is determined by having less laryngeal features. (10b) is dispreferred to eliminating a laryngeal feature because the featural markedness constraint *LARYNGEAL dominates the faithfulness constraint ID(laryngeal). This derivation converges immediately after the first step as illustrated in (11) below.

(10) Step 1 of *k'æ-kæŋ*

σ + σ k'æŋ	HD (σ)	*COPY(σ)	*LARY	ID (lary)	NOCODA
a. σ + σ k'æŋ k'æŋ		1W	2	L	2
b. σ + σ k'æ k'æŋ			2W	L	1
c. σ + σ kæŋ	1W		L	1	1
d. → σ + σ k'æ kæŋ			1	1	1

(11) Step 2 of *k'æ-kæŋ*

σ + σ k'æ kæŋ	HD (σ)	*COPY(σ)	*LARY	ID (lary)	NOCODA
a. → σ + σ k'æ kæŋ			1		1
b. σ + σ k'æŋ kæŋ			1		2W
c. σ σ + σ k'æ kæŋ	1W		1		1
d. σ σ + σ k'æ.kæŋ kæŋ		1W	1		2

Finally, we have one last example *pusi-si* with a reduplicative suffix. Suffixing reduplication in this word proceeds by copying the end rather than the beginning of the stem: *pusi-si*, not **pusi-pu*. This is a reflection of the generalization, due to Marantz (1982), that copying typically proceeds edge-in, from right to left in suffixes. In BRCT, this generalization is attributed to two violable constraints. One, ANCHOR_{BR}, requires the last segment in the base to have a correspondent that is last in the reduplicant. The other, CONTIGUITY_{BR}, is violated by any segment in the base that is followed by segments with correspondents but has no correspondent itself. ANCHOR_{BR} is controversial even within BRCT and many researchers reject the constraint in favor of locality constraints requiring the original and its copy to be adjacent (Riggle 2004, Nelson 2005, Lunden 2006). The effects of this sort of

adjacency constraint can be obtained within STS's operational approach. An operation that copies a string and places the copy adjacent to the original is more faithful than one that puts the copy further away. An application of COPY(X) automatically produces a violation of *COPY(X) and it can create a violation of COPY-LOCALITY(X), as shown in (12).

(12) COPY-LOCALITY (McCarthy et al. 2012)
To a candidate produced by COPY(X), assign as many violations as there are Xs intervening between the original X string and its copy.

COPY-LOCALITY does exactly what is required with candidates (13b) and (13c). When COPY(segment) produces *pusi-si*, the original segmental string and copy are adjacent; when it produces *pusi-pu*, the original and its copy are separated by two segments, so COPY-LOCALITY is violated twice. This derivation converges at the next step when the input is identical to the winner candidate as shown in the tableau (14).

(13) Step 1 of *pusi-si*

σ σ + σ pu. si	HD (σ)	*COPY(σ)	COPY- LOC
a. σ σ + σ pu. si	1W	L	
b. σ σ + σ pu. si pu		1	1W
c. → σ σ + σ pu. si si		1	

(14) Step 2 of *pusi-si*

σ σ + σ pu. si si	HD (σ)	*COPY(σ)	COPY- LOC
a. → σ σ + σ pu. si si			
b. σ σ + σ σ pu. si si	1W		
c. σ σ + σ σ pu. si pu. pu		1W	1

5. Conclusion

This study has presented an analysis of Korean partial reduplication within the framework of Serial Template Satisfaction, a theory of reduplication embedded in Harmonic Serialism, which is a derivational version of Optimality Theory. The main premises of STS include a particular characterization of GEN's Copy operation, a competing Insert operation, and a constraint *COPY that under some circumstances allows Insert to beat Copy. In STS, template satisfaction is a gradual process that plays out for a derivation. The derivation is crucial to understanding STS's predictions about the interaction of reduplication and phonology observed in Korean doubling. In this article, I have identified various cases where STS and theories employed in previous studies make different predictions. I have argued that the predictions of STS are supported by the disadvantage of other frameworks including pre-OT theories as well as base-reduplicant correspondence theory in parallel OT. Future research will concentrate on attempting to compare STS with more distant theories such as Inkelas and Zoll (2005) and Steriade (1988) as well as considering the actual effects of TETU by investigating the frequency of Korean reduplicative words.

REFERENCES

AHN, SANG-CHEOL. 2000. Reduplication in Optimality Theory: Input Reduplicant Faithfulness. *Korean Journal of Linguistics* 25.1, 103-127.

CHAE, WAN. 1986. *A Study on Word Order in Korean*. Seoul: Top Publishing Company.

CHUNG, CHIN-WAN. 1997. A correspondence-theoretic approach to partial reduplication in Korean. *Studies in the Linguistics Sciences* 27.1, 33-47.

INKELAS, SHARON and CHERYL ZOLL. 2005. *Reduplication: Doubling in Morphology*. Cambridge: Cambridge University Press.

JUN, JONGHO. 1994. Metrical weight consistency in Korean partial reduplication. *Phonology* 11.1, 69-88.

KANG, ONGMI. 1998. A correspondence-theoretic analysis of Korean partial reduplication. *Studies in Phonetics, Phonology and Morphology* 4, 31-54. The Phonology-Morphology Circle of Korea.

KIM, HYUNG-SOO. 1997. An optimality-theoretic approach to reduplication in Korean ideophones. *Language Research* 38.4, 737-752.

_____. 2003. A new look at partial reduplication in Korean. *Studies in Phonetics, Phonology and Morphology* 9.2, 353-380. The Phonology-Morphology Circle of Korea.

_____. 2009. The full-to-partial reduplication in Korean and Turkish reduplication. *Linguistic Research* 26.2, 121-148.

_____. 2014. Sound symbolism in Korean: the morpho-phonological patterns of extension and reduction. *The Linguistic Association of Korea Journal* 22.4, 275-296.

KIM, SOOHEE. 1996. Emergence of the unmarked: Korean partial reduplication. *CLS* 32, 179-189.

KIM, YOUNG-SEOK. 1984. *Aspects of Korean Morphology*. Seoul: PanKorea Book Corporation.

LOMBARDI, LINDA. 1999. Positional faithfulness and the phonology of voicing in Optimality Theory. *Natural Language and Linguistic Theory* 17, 278-302.

LUNDEN, ANYA. 2006. *Reduplicant Placement, Anchoring, and Locality*. Williamsburg: College of William and Mary.

MARANTZ, ALEC. 1982. Re reduplication. *Linguistic Inquiry* 13, 483-545.

MCCARTHY, JOHN. 2010. An introduction to harmonic serialism. *Language and Linguistics Compass* 4.10, 1001-1018.

MCCARTHY, JOHN and ALAN PRINCE. 1986. *Prosodic Morphology*. New Brunswick: Rutgers University Center for Cognitive Science.

_____. 1994. The emergence of the unmarked: optimality in prosodic morphology. In Gonzalez, M. (ed.), *Proceedings of the North East Linguistic Society* 24, 333-379.

MCCARTHY, JOHN and ALAN PRINCE. 1995. Faithfulness and reduplicative identity. In Beckman, J., L. Dickey and S. Urbanczyk (eds.), *University of Massachusetts Occasional Papers in Linguistics* 18, 249-384.

MCCARTHY, JOHN, WENDELL KIMPER and KEVIN MULLIN. 2012. Reduplication in harmonic serialism. *Morphology* 22.2, 173-232.

NELSON, NICOLE. 2005. Wrong side reduplication is epiphenomenal: evidence from Yoruba. In Hurch, B. (ed.), *Studies on Reduplication*. Berlin: Walter de Gruyter, 135-160.

PRINCE, ALAN and PAUL SMOLENSKY. 1993. *Optimality Theory: Constraint*

Interaction in Generative Grammar. Malden: Blackwell.

RAMSTEDT, G. J. 1957. *An Introduction to Altaic Linguistics, Volume I: Phonology*. Helsinki: Suomalais-Ugrilainen Seura.

RIGGLE, JASON. 2004. Nonlocal reduplication. *Proceedings of NELS* 34, 485-496.

ROBBEETS, MARTINE. 2017. Austronesian influence and transeurasian ancestry in Japanese: A case of farming/language dispersal. *Language Dynamics and Change* 7.2, 201-251. doi:10.1163/22105832-00702005.

SAPIR, EDWARD. 1921. *Language: An Introduction to the Study of Speech*. New York: Harcourt, Brace and Company.

SELKIRK, ELIZABETH. 1995. The prosodic structure of function words. In Beckman, J., L. Dickey and S. Urbanczyk (eds.), *University of Massacusetts Occasional Papers in Linguistics* 18, 439-470.

STERIADE, DONCA. 1988. Reduplication and syllable transfer in Sanskrit and elsewhere. *Phonology* 5, 73-155.

SUH, CHANG-KOOK. 1993. Dual aspects of weight: evidence from Korean partial reduplication. *WCCFL* 12, 153-166.

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