Schm Constructions within Optimality Theory*

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Yu, Sihyeon. 2002. ***Schm* Constructions within Optimality Theory.** *Korean Journal of English Language and Linguistics* 2-3, 431-469. The main purpose of this paper is to present data about *schm* constructions in English and to examine them within the framework of Optimality Theory. American people sometimes reduplicate a word in deprecation using a prefix *schm-* or *shm-*, as in fancy-*shm*ancy, and old-*shm*old. In these data, reduplicants surface as a copy of the whole word except the onset of the first syllable, which is replaced with *schm*. My data include some examples where the onset of the second syllable, not the first syllable, within the word reduplication is deleted and replaced with fixed segmentism *schm*, which seems to be infix rather than prefix. Above all, this study presents concrete evidence for the existence and function of 'syllable' and 'foot' known as prosodic categories by examining *schm* reduplication. Such extensions of *schm-* reduplcation also make predictions about types of outputs corresponding to their inputs.

1. Introduction

The phonological processes involved in reduplication have been a particular focus on prosodic morphology, which distinguishes the base form of the reduplication from the repeating element (the reduplicant), as well as prefixing and suffixing types. The term reduplication is defined as any process whereby a word, syllable, or sound is repeated as part of an additional syllable in a word or as an additional word or word element in a compound word or phrase (the Dictionary of American Slang by Harold Wentworth and Stuart Berg Flexner 1960:605). People

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sometimes reduplicate a word in deprecation using a prefix *shm-*, as in *fancy-shmancy*, *old-shmold* (Steinmetz 1986:141). According to this dictionary, *sch-/schm-* can be considered a slang prefix when it is affixed to standard or slang words. As Steinmetz (1986) points out, *shm-/schm-* is often used with a jocular follow-up clause, as in (1) and (2):

(1) "Oedipus, shmoedips—as long as he loves his mother"
(2) "Cancer-shmancer—as long as you're healthy"

In short, *shm-/schm-* structures are productive in American English settings. Therefore, I would like to find out how it works phonologically and whether there is any prosodic limitation to produce such a construction. In order to do that, I collected data on the usages of *shm-/schm-* words from nine subjects. In this study, three things are considered: first, does stress influence any output? Second, does the number of syllables make any difference? Third, do consonant clusters as onsets play any role in determining the optimal output? Most of the cases can be explained with the framework of OT, where only one optimal winner is allowed. However, it turns out that there are other options that some speakers use in the real world. In order to cover some outputs that are preferred by real speakers beyond the optimal output, we might have to slightly revise the OT that is supposed to accept only one output. The idea still holds true that the optimal output is the most favored one among most speakers. How can we account for other options that are not the best but people still use in their daily lives?

In order to explain this phenomenon, we have two choices to consider: either accepting floating constraints or allowing the second, third, or *n*th winner. My analysis seems to require one of these theoretical proposals, or a new proposal to cover this optionality phenomenon. The first possible explanation is like this. We admit floating constraints as well as fixed constraints in terms of ranking hierarchy rather than fixed constraints only. In terms of the floating constraints, we may be able to get more than one output resulted from a different ranking hierarchy. An example is as in the following:

Tableau 1 Constraint A ≫ Constraint B ≫ Constraint C ≫ Constraint D

	Constraint A	Constraint B	Constraint C	Constraint D
☞ Candidate 1			*	****
Candidate 2		*!		
Candidate 3	*!			
Candidate 4	**!			
Candidate 5	***!			

Tableau 2 Constraint A ≫ Constraint C ≫ Constraint B ≫ Constraint D

	Constraint A	Constraint C	Constraint B	Constraint D
Candidate 1		*!		****
☞ Candidate 2			*	
Candidate 3	*!			
Candidate 4	**!			
Candidate 5	****!			

In tableaux above, the only difference is the ranking between Constraint B and Constraint C. In tableau 1, Candidate 1 is selected as an optimal output due to a ranking hierarchy: Constraint A ≫ Constraint B ≫ Constraint C ≫ Constraint D. In tableau 2, however, Candidate 2 is chosen as an optimal output due to a ranking hierarchy slightly different from the one in tableau 1. In other words, tableau 2 shows a slightly different picture by ranking Constraint B and C. With the ranking hierarchy of Constraint A ≫ Constraint C ≫ Constraint B ≫ Constraint D, Candidate 2 is selected as an optimal output in tableau 2. This idea regards Constraint B or C as a floating constraint and results in two different outputs.

The second possible explanation for the phenomenon is like this: considering the second winner or third or *n*th winner. It is not necessary to change any ranking hierarchy like in the floating constraints idea, and the second proposal only needs to accept the second or *n*th winner as well as the first winner that is an optimal output. For example, let us consider the following tableau:

Tableau 3 Constraint A ≫ Constraint B ≫ Constraint C ≫ Constraint D

	Constraint A	Constraint B	Constraint C	Constraint D
1st☞ Candidate 1			*	****
2nd☞ Candidate 2		*		
Candidate 3	*!			
Candidate 4	**!			
Candidate 5	****!			

As shown in Tableau 3, the ranking hierarchy is fixed as follows:

(3) Constraint A ≫ Constraint B ≫ Constraint C ≫ Constraint D

Fixed constraints ranking hierarchy made Candidate 1 as an optimal output, by satisfying the minimal violation among candidates given. In addition, in this view, Candidate 2 as a second candidate is also considered a winner next to the first one. This second winner violates the constraints more than the first winner, but it does so less than any other candidate except Candidate 1. This idea comes from Golston (1998) where he analyzed all of the half-line types in *Cleanness*, which is a Middle English poem, with an eye towards explaining why some occur so much more frequently than others and made a proposal that metrical well-formedness is gradient and explicable in terms of ranked and violable constraints. This idea seems to be more plausible than the floating ideas in terms of economy. It does not cost any change of ranking hierarchy, making less change of OT and thus holding the theory as effective. It can explain many other cases where we have difficulty in accounting for more than one output. In short, we still can keep the optimal winner firmly, but also allow the second winner to be another plausible output. Even though this idea has an economy effect, however, it does not have any support for it.

Since this study is concerned about reduplication, a question can be raised: whether reduplication is templatic or template-free. The schmable-type data here seem to be template-free in that each case has its own template. It is hard to conclude positively since the reduplication goes through any size of words. It is a full reduplication except the onset of the first syllable, primary or secondary. Since words are different in the number of moras, syllables, and feet, it is hard to say that any specific template is related here. The idea of template-free reduplication can be supported by Hendricks (1999), in which he argued that template constraints are not required to account for reduplicant shape in OT, and suggested that the alternative should be to eliminate template constraints and allow the shape of reduplicants to be determined by more general structural constraints in language.

2. *Schm* Data from Subjects

In order to find out how this construction with the prefix *shm-/schm-* work, I selected nine subjects who are not linguistics specialists but just American-native speakers whether they know the construction of the *schm-* reduplication, and made a multiple-choice for the survey. Actually, from the previous pilot study about this research, I conducted a questionnaire to those linguistics specialists who tend to face more various phonological phenomena than non-specialists. As a result, I got the data that do not seem to show any specific relevance in that anything, or any sound, seems possible to them. It was hard to find a generalization out of them. This was the reason that I used the subjects who are not linguistics specialists. It also corresponds to the fact that my research requires a native speaker's intuition, not a specialist's. The reason why I gave them multiple choices is that not everybody was using those *schm* constructions so often. With these two reasons, I chose the subjects normal native speakers who actually work as librarians[1] at the University of Arizona.

This survey consists of words with consonant-cluster as onset, the words from monosyllables to multi-syllables, and the words that vary in terms of stress placement. And some of the words already used in the texts are added in order to see whether we have the same result from normal spoken situations as that from the written texts. A multiple-choice questionnaire was given to nine subjects and see Appendix A for the result of the survey. Let us consider the words with a primary stress on the first syllable as follows:

(4)

Base	The most preferable	The second	The last
cream	cream-*schm*ream(4)	cream-*schm*eam(3)	No(2)
spoon	spoon-*schm*oon(8)	spoon-*schm*poon(1)	No( )
group	group-*schm*oup(6)	group-*schm*roup(2)	No(1)
pride	pride-*schm*ide(5)	pride-*schm*ride(4)	No( )
star	star-*schm*ar(9)	star-*schm*tar( )	No( )
college	college-*schm*ollege(9)	college-*schm*ege( )	No( )
rival	rival-*schm*ival(8)	rival-*schm*al(1)	No( )
schedule	schedule-*schm*edule(6)	No(2)	schedule-*schm*chedule(1)
news	news-*schm*ews(6)	news-*schm*us(3)	No( )
television	television-*schm*elevision(9)	television-*schm*evision( ) television-*schm*ision( ), No( )	
spray	spray-*schm*ay(3) No(3)	spray-*schm*ray(2)	spray-*schm*pray(1)
boomerang	boomerang-*schm*oomerang(7)	boomerang-*schm*erang(1) No(1)	
wonderful	wonderful-*schm*underful(8)	wonderful-*schm*erful( )	No(1)
summary	summary-*schm*ummary(8)	summary-*schm*ary(1)	No( )

[1]Special thanks to Viki for helping me with this survey by encouraging others to participate in this survey.

The numbers in parentheses show the preference of each speaker: the higher the number is, the more the speakers prefer. For example, in the case of *cream*, four speakers out of nine speakers chose *cream-schmream* as the most favored reduplication with *schm*; three speakers out of nine chose *cream-schmeam*; and only two speakers chose none of those. There are several generalizations we can make from the data.

As in (4), each resultant form matches one where the onset of the first syllable is replaced by *schm*. The following is the ones where the secondary stress is on the first syllable.

(5)

Base	The most preferable	The second	The last
cashier	cashier-*schm*ashier(8)	No(1)	cashier-*schm*ier( )
engineer	engineer-*schm*engineer(8)	No(1)	engineer-*schm*ineer( )
revolution	revolution-*schm*evolution(5)	revolution-*schm*olution(2)	revolution-*schm*ution(1) No(1)

As in (5), *schm* goes with the syllalbe with a secondary stress as the ones with a primary stress in (4). Now let us compare the words with a major stress on the first syllable with the words with no stress on the first syllable but the second as follows:

(6)

Base	The most preferable	The second	The last
computer	No(5)	computer-*schm*puter(3)	computer-*schm*omputer(1)
confusion	confusion-*shm*usion(5)	confusion-*shm*onfusion(2)	No(1)
tomato	tomato-*schm*ato(7)	tomato-*schm*omato(1) No(1)	
tomorrow	tomorrow-*schm*orrow(6)	No(2)	tomorrow-*schm*omorrow(1)
commuter	commuter-*schm*muter(7)	commuter-*schm*ommuter(1), No(1)	
irreverent	irreverent-*schm*reverent(3) irreverent-*schm*everent(3)	irreverent-*schm*irreverent(1) No(1)	

Except the case of *computer*[2], *schm* tends to go with the second syllable with a major stress, skipping the first syllable with no stress at all.

In short, in the words with a primary stress or secondary stress on the first syllable, each resultant form matches what we expected: *schm-* goes with the first syllable. Such cases are *cream*, *spoon*, *group*, *pride*, *star*, *college*, *rival*, *schedule*, *television*[3], *news*, *spray*, *boomerang*, *wonderful*, and *summary* where the primary stress is on the first syllable, and *cashier*[4], *engineer*, and *revolution* where the secondary stress is on the first syllable. In the cases of *confusion*, *tomato*, *tomorrow*, *commuter*, and *irreverent*, *schm-* goes with the second syllable. This means that *schm* reduplication seems to be influenced by stress.

Yet, among the monosyllabic words with consonant clusters as onset, there is some variation on each. On the other hand in *cream*, *spoon*, *group*, *pride*, *star*, *schedule*, and *spray* that include the consonant clusters, they divide into two or three sub-cases: working together as a unit or breaking down. However, the most favored output is the one where consonant clusters work together as a unit. In the case of *confusion* and *wonderful*, the speakers' preference agrees with the data from the texts, even though not everybody agrees with it: *confusion-shmusion* and *wonderful-schmunderful*. In the case of *Gwen*, either *Gwen-schmwen* or *Gwen-schmen* is possible. It seems to me that subjects tend to

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[2] I need to state that the choices given to the American-native subjects in the multiple choices for the word *computer* were as follows:

computer-schmputer ( ), computer-schmomputer ( ), No ( )

This might have been a problematic choice to make to them. So we can assume that with the option of *computer-schmuter* given, then it would be the optimal output that they would choose.

[3] television /tέləvìzən/

[4] cashier /kæ̀šír/

confuse the status of onglide *w*, since it has been a broad issue whether it is as co-moraic with the following vowel or as an onset. Actually, I found that since subjects are not linguists, some of the spelling distinctions may have been too subtle, for example in such as *-ews/-us* in *news* and*-u/ -eu* in Beula (Hammond, p.c.). Now let us consider the results from subjects with several things again: stress effect, if any; the number of syllables; and consonant clusters as onset.

First, let us consider the cases of more than two-syllable words as base, since monosyllabic words always hold stress on the first syllable and there is no other option on it. And also let us exclude *news*, *Beula*, and *Gwen*, since those are related to glide, which may confuse speakers' decision. Then, we have *college, rival, schedule, cashier, computer, television, confusion, tomato, tomorrow, commuter, engineer, boomerang, wonderful, irreverent, revolution*, and *summary*. The following is the sorting by stress:

(7)

Words with primary stress on the first syllable and their reduplicated forms	Words with secondary stress on the first syllable and their reduplicated forms	Words with no stress on the first syllable and their reduplicated forms
Cóllege-*schm*óllege	Ènginéer-*schm*ènginéer	Compúter-No[5]
Ríval-*schm*íval	Cashíer-*schm*ashíer	Confúsion-*shm*uúsion
Schédule-*schm*édule	Rèvolútion-*schm*èvolútion	Tomáto-*schm*áto
Télevision-*schm*élevision		Tomórrow-*schm*órrow
Bóomerang-*schm*óomerang		Commúter-*schmm*úter
Wónderful-*schm*únderful		Irréverent-*schm*éverent/ *schm*réverent
Súmmary-*schm*úmmary		

[5]In case of *computer*, five speakers chose 'No' option, three speakers chose *computer-schmputer* and one speaker chose *computer-schmomputer*. This result seems to be in contrast with the results in case of *commuter*, which seems to have the same phonological structure as in the following:

computer	com[pú.ter]:	$\sigma\,[\,\sigma\;\sigma\,]$
commuter	com[mú.ter]:	$\sigma\,[\,\sigma\;\sigma\,]$

As shown from the above tableau, the words from the first column and second column work the same way, by replacing the onset of the first syllable by *schm-/shm-* while the words from the third column work differently from those from the first and second columns. The stress effect is still valid from the data I collected from nine subjects who are American native speakers. In order to understand this better, we can show the above data in terms of syllable/foot structures as in (6):

(8)

Créam-*schméam*	[créam]-[schméam]: [σ]-[σ]
Spóon *schmóon*	[spóon]-[schmóon]: [σ]-[σ]
Gróup *schmóup*	[gróup]-[schmóup]: [σ]-[σ]
Príde *schmíde*	[príde]-[schmíde]: [σ]-[σ]
Stár *schmár*	[stár]-[schmár]: [σ]-[σ]
Cóllege *schmóllege*	[cól.lege]-[schmól.lege]: [σ σ]-[σ σ]
Ríval-*schmíval*	[rí.val]-[schmí.val]: [σ σ]-[σ σ]
Schédule-*schmédule*	[schéd.ule]-[schméd.ule]: [σ σ]-[σ σ]
Cashíer-*schmashíer*	[cásh][íer]-[schmásh][íer]:[σ][σ]-[σ][σ]
Néws-*schméws*	[néws]-[schméws]: [σ]-[σ]
Compúter-*schmúter*	com[púter]-com[schmúter]/[schmúter]: σ [σ σ]- σ [σ σ]/[σ σ]
Télevísion-*schmélevísion*	[tél.e][vi.sion]-[schmél.e][vi.sion]:[σ σ][σ σ]-[σ σ][σ σ]
Spráy-*schmáy*	[spráy]-[schmáy]: [σ]-[σ]
Confúsion-*shmúsion*	con[fú.sion]-[shmú.sion]: σ [σ σ]- [σ σ]
Beúla-*schmúla*	[beú.la]-[schmú.la]: [σ σ]-[σ σ]
Tomáto-*schmáto*	to[má.to]-[schmá.to]: σ [σ σ]-[σ σ]
Tomórrow-*schmórrow*	to[mór.row]-[schmór.row]: σ [σ σ]-[σ σ]
Commúter-*schmmúter*	com[mút.er]-[schmút.er]: σ [σ σ]-[σ σ]
Enginéer-*schmenginéer*	[en.gi][néer]-[schmen.gi][néer]:[σ σ][σ]-[σ σ][σ]
Bóomeráng-*schmmóomeráng*	[bóom.er][ang]-[schmóom.er][ang]:[σ σ][σ]-[σ σ][σ]

Since there are only choices in case of *computer*: *computer-schmputer* ( ), *computer-schmomputer* ( ), and No ( ), while there are choices in case of *commuter*: *commuter-schmmuter* ( ), *commuter-schmommuter* ( ), and No ( ). This seems to be a reasonable result.

Wónderful-*schmú*nderful	[wón.der]ful-[schmún.der]ful:[σ σ] σ -[σ σ] σ
Gwén-*schmé*n	[Gwén]-[schmén]: [σ]-[σ]
Irréverent-*schmé*verent	ir[rév.er]ent-[schmév.er]ent: σ [σ σ] σ -[σ σ] σ
Revolútion-*schme*volútion	[rev.o][lú.tion]-[schmev.o][lú.tion]:[σ σ][σ σ]-[σ σ][σ σ]
Súmmary-*schmú*mmary	[súm.ma]ry-[schmúm.ma]ry:[σ σ] σ -[σ σ] σ

The above *schm*-related words are collected with multiple questionnaires prepared by the author.

Second, let us consider the number of syllables. From the results of the data I collected, the number of syllables does not seem to play any important role, since few speakers made a choice with no preference.

Third, considering the words with consonant clusters (1, 2, 3, 4, 5, 8, 13) from Appendix A, there is something interesting I found. It seems that consonant clusters as onsets work together as a unit, by being replaced by *schm-*. However, there are still other cases that some of the subjects prefer. Let us compare *group* and *pride* with *spoon* and *star.* That is, consider the following:

(9)

3. group: group-*schmr*oup (2)	group-*schm*oup (6)	No (1)
4. pride: pride-*schmr*ide (4)	pride-*schm*ide (5)	No ( )
2. spoon: spoon-*schmp*oon (1)	spoon-*schm*oon (8)	No ( )
5. star: star-*schmt*ar ( )	star-*schm*ar (9)	No ( )

In cases of *group* and *pride* as base, the subjects made the secondly favored choice (*group-**schmr**oup*, *pride-**schmr**ide*) to the most favored choice (*group-**schm**oup*, *pride-**schm**ide*), while in *spoon* and *star* as base, they made the first favored choice only. So, we can say that *group-schmroup* and *pride-schmride* are preferable to *spoon-schmpoon* and *star-schmtar.* It seems that the cluster *mr* sounds better than the cluster *mp* to the speakers. The cluster *mr* is the sequence of nasal-liquid in the onset position, while the cluster *mp* is the sequence of nasal-obstruent in the onset position. This result can be supported by the idea of Sonority Scale. Bringing the concept of Sonority scale, the one that is closer to the peak or nucleus should be more sonorous than the one that is less close to it. Sonority Scale, or sonority hierarchy, in its definition by David Crystal (1997), the most sonorous elements are assigned the highest value, and the least sonorous the lowest value. The center of a syllable is defined as the place where sonority is greatest. Hammond (1999:86) presents the definition of Sonority Hierarchy with sub-part constraints relevant to clusters and margins as in (10):

(10) Sonority Hierarchy
Segments are intrinsically orderable such that segments higher on the hierarchy cannot occur outside segments lower on the hierarchy within a syllable.

The idea of Sonority Hierarchy is needed in order to account for a second best, more clearly second possible output that speakers happen to produce whether by accident or on purpose. The generalization that reversed onsets can largely all occur as codas is not as true for codas. The coda sequences are less limited than the onset sequences. For example, considering English cases, liquid-nasal sequences are possible in the coda, but not in the onset position. Since the issue is in the word-initial position, let us bring word-initial sonority by Hammond (1999: 86) as in (11):

(11) Word-initial sonority
Obstruent < Approximant

Hammond points out that while such NC clusters as *bump* [bʌ̃mp], *bank* [bæ̃ŋk], *bent* [bɛ̃nt], and *band* [bæ̃nd] are well-formed word-finally, *CN never occurs word-initially, except in rare borrowing. Going back to *mr* and *mp* at the word-initial position, the latter incurs more violation than the former. That is because such liquids as *r* are more sonorous than such obstruents as *p*. Instead, *mp* structure is more likely to fit in the word-final position. This can be supported by the sonority presented by Hammond (1999:86) as follows:

(12) Word-final sonority
Obstruent < nasal < l < r

In short, the degree of the violation of *mp* word-initially is higher than that of *mr*. This would explain why people prefer one to another in terms of sonority hierarchy applied in English; the subjects made the secondly favored choices *group-schmroup*, *pride-schmride*, while few subjects made a choice of *spoon-schmpoon* or *star-schmtar*. In the next section, we will analyze these results within OT.

3. An OT Account of *Schm* Constructions

In my data of reduplication with *schm*-prefix, we do not need any templatic unit to find the optimal output. First, we need the first two constraints that are higher than others as follows:

(13) a. ALIGN(RED R, WORD, R): The reduplicant is a suffix.
b. ANCHOR RED-R: The right edge of the reduplicant corresponds to the right edge of the base.

Tableau 4 /actor-RED/

/actor-RED/	ALIGN(RED, R, WORD, R)/ ANCHOR RED-R	Constraint A	Constraint B
☞ a. actor-schmactor		?	?
b. schmator-actor	!*	?	?

These constraints ALIGN(RED, R, WORD, R) and ANCHOR RED-R are undominated, so that we will not see any candidates that violate them. The alignment constraint only requires that the prefix *schm* be aligned to a stressed syllable, and this constraint in conjunction with MAX-BR and DEP-BR will determine how much of the base gets copied. With respect to Anchoring of Edges, the reduplicant normally contains an element from at least one edge of the base, typically the left edge in prefixed reduplicants and the right edge in suffixed reduplicants. In the input-output domain, edge-anchoring has been identified with the class of constraints on the alignment of edges of morphological and prosodic constituents. The next set of constraints that we need is MAX-BR and MAX-IO as follows:

(14) a. MAX-BR: Every segment in the base is in the reduplicant.
b. MAX-IO: No phonological deletion

From the data we have seen, base-reduplicant identity was not complete in that *college* as a base and *schmollege* as a reduplicant do not match exactly, instead a type of base without the first onset does. It is doubtful if we call it templatic, *-ollege* here, since a base can range from any monosyllabic word to multisyllabic one and then its counterpart reduplicant can range the same way. Input-output faithfulness also was not complete in this case, which makes phonological deletion occur. For example, *rival*-RED as input was changed into *rival-schmival*. The segment *r* in the reduplicant was deleted. In terms of input-output domain, every base still exists. But, in terms of base-reduplicant domain, every reduplicant does not match with its base; it matches with its counterpart except the first part such as onset usually. Let us consider the tableau below:

Tableau 5 /rival-RED/

/rival-RED/	MAX-IO	MAX-BR
☞ a. rival-schmival		*
b. rival-schmal		***!

Therefore, Constraint MAX-IO in this case is undominated, while Constraint MAX-BR is not undominated. As for the concept of Dependence on base, the phonological material of the reduplicant normally is just that of the base in the domain of base-reduplicant identity. But every reduplicant from our data here is not like its counterpart base, but different with fixed prefix *schm-/shm-* as onset. Whether or not we determine the prefix *schm-* as prespecified as input does not seem to matter since I expect that there is no change in the status of the optimal output. Next, we need a constraint like DEP-BR, which belongs to IDENT-BR. In order to yield the correct reduplicant weight for the reduplicant, the following constraint is needed:

(15) ALIGN($\acute{\sigma}$, L, *schm*, L): stressed syllable is aligned to the Left Edge of a *schm*.

Constraint (15) states that each stressed syllable goes with *schm* in that PROMINENT phonological material should be stressed anytime. By adding the constraint ALIGN($\acute{\sigma}$, L, *schm*, L), we can get the optimal output 'rival-*schm*ival' as follows:

Tableau 6 /rival-RED/

/rival-RED/	MAX-IO	ALIGN($\acute{\sigma}$, L, *schm-*, L)	MAX-BR
☞ a. rival-*schm*ival		*	*
b. rival-rival		**!	
c. *schm*ival-rival	*!	*	
d. *schm*ival-*schm*ival	*!		*
e. rival-*schm*al		*	***!
f. rival-*schm*rival		*	**!

From Tableau 6, the undominated constraint MAX-IO rules out the candidates (c) and (d), and as the next step the constraint ALIGN($\acute{\sigma}$, L, *schm*, L) rules out the candidate (b). Finally, the constraint MAX-BR selects the candidate (a) as the optimal output, which violates the constraints minimally.

In order to exclude the candidate (e) in Tableau 7, we still need the constraint that is alignment between stressed syllable and *schm*.

Tableau 7 /wonderful-RED/

/wonderful-RED/	MAX-IO	ALIGN($\acute{\sigma}$, L, *schm*, L)	MAX-BR
☞ a. wonderful-*schm*underful		*	*
b. wonderful-wonderful		**!	
c. *schm*underful-wonderful	*!	*	
d. *schm*underful-*schm*underful	*!		*
e. wonderful-*schm*erful		*	****!
f. wonderful-*schm*wonderful		*	**!

Let us consider another case: *group*. This time we need to concern the onset *gr* which is a consonant cluster. Should it be considered as one unit? Or, separate?

Tableau 8 /group-RED/

/group-RED/	MAX-IO	ALIGN($\acute{\sigma}$, L, *schm*, L)	MAX-BR
a. group-*schm*oup		*	**!
b. group-group		**!	
c. *schm*oup-group	**!	*	
d. *schm*oup-*schm*oup	**!		**
e. group-*schm*roup.		*	*!
☞ f. group-*schm*group		*	

As shown in Tableau 8, a candidate (f) is selected as an optimal one, which is an undesirable result. The constraints so far are ones that operate mainly when we find an optimal candidate. However, in order to compare those that are not selected as optimal, we need to add the constraint of Sonority scale in terms of the degree of their closeness to optimality. In addition to the idea of Sonority Hierarchy, Hammond (1999:87) formalizes the sonority hierarchy, assuming that there is an intrinsic ranking of consonants in terms of sonority, which presumably includes every possible distinction among consonants and every possible consonant. He further argues that the language-particular sonority hierarchy is more specific in the following respects: First, clearly a specific-language sonority hierarchy only ranks the relevant consonants of the language in question. Second, while it may be possible to rank all consonants, a language clearly elects to collapse the full ranking in various ways. Third, English makes use of one sonority hierarchy for onsets and a different one for codas. In order to treat the sonority hierarchy in OT, he assumes that the sonority hierarchy is a ranking of constraints. Stating from a schema *ONSET/X, he lists all relevant categories in terms of onsets as in the following simple onset restrictions (16) and onset cluster restrictions (17):

(16) Simple onset restrictions (Hammond 1999:87)
* ONSET/obstruent (*O/o)
* ONSET/nasal (*O/n)
* ONSET/nasal (*O/n)
* ONSET/approximant(*O/a)

(17) Ranking and Constraints (Hammond 1999:88)

$$\left\{ \begin{array}{l} *\text{O/ao} \\ *\text{O/an} \\ *\text{O/no} \end{array} \right\} \gg *\text{O/na} \gg *\text{O/on} \gg *\text{O/oa}$$

Hammond (1999:88) introduces a notion of syntactic combination of constraints (SCC) as in the following:

(18) Syntactic Combination of Constraints (SCC)
Constraint schemata like *ONSET/X can refer to ordered strings or individual elements.

With the above notion, he explains that in the case of syntactically combined *ONSET constraint, their relative ranking is a function of the relative ranking of the leftmost element. If they tie together, he argues, their rankings are determined by considering the relative ranking of the rightmost elements. The predicted ranking of the complex *ONSET constraints along with M-PARSE in English, which is outranked by all, are as in the following:

(19) Ranking of the complex *ONSET constraints[6)]

*o/ao ≫ *o/an ≫ *o/no ≫ *o/na ≫ M-PARSE ≫ *o/oa
*o/on

The constraints relevant to our data here can be drawn as in the following:

(20) SONORTIY: e.g., SONORTIY (*o/no), SONORTIY (*o/nr)

By adding the constraint SONORTIY, we can get what we expect as in Tableau 8 below:

Tableau 9 /group-RED/

/group-RED/	MAX-IO	ALIGN(σ́, L, *schm*, L)	SNORTIY	MAX-BR
☞a. group-*schm*oup		*		**
b. group-group		**!		
c. *schm*oup-group	**!	*		
d. *schm*oup-*schm*oup	**!			**
e. group-*schm*roup.		*	*!	*
f. group-*schm*group		*	*!	

[6]*ONSET/approximant, obstruent (*o/ao)
*ONSET/approximant, nasal (*o/an)
*ONSET/nasal, obstruent (*o/no)
*ONSET/nasal, approximant (*o/na)
*ONSET/obstruent, nasal (*o/on)
*ONSET/obstruent, approximant (*o/oa)

As shown in Tableau 9, we need to put two other constraints, SONORTIY (*o/no) and SONORTIY (*o/nr), in order to exclude the candidates (e) and (f) respectively. It can be stated as one constraint SONORTIY. Then we can get an optimal candidate (a). Again, the consonant clusters as an onset in *group* are replaced by the fixed *schm* in *schm*oup, the second part of group-*schm*oup. Tableau 9 works in the same way as Tableau 8 does.

Tableau 10 /star-RED/

/star-RED/	MAX-IO	ALIGN(σ́, L, *schm*, L)	SONORTIY	MAX-BR
☞ a. star-*schm*ar		*		**
b. star-star		**!		
c. *schm*ar-star	**!	*		
d. *schm*ar-*schm*ar	**!			**
e. star-*schm*tar		*	*!	*
f. star-*schm*star		*	*!	

Now, let us consider the case where the first syllable does not have any stress, whether it is primary or secondary. As shown in Tableau 10, the word *confusion* is the one.

Tableau 11 /confusion-RED/

/confusion-RED/	MAX-IO	ALIGN(σ́, L, *schm*, L)	MAX-BR
☞ a. confusion-con*schm*usion		*	
b. confusion-confusion		**!	
c. *schm*usion-confusion	****!	*	
d. *schm*usion-*schm*usion	****!		****
e. confusion-*schm*onfusion		**!	*
f. confusion-*schm*confusion		**!	

The classical version was *confusion-conschmusion* from the written text. As time goes, people tend to drop the first syllable. That is why we got *confusion-schmusion,* by ignoring the lower ranked constraint MAX-BR, by applying partial reduplication. This time, since partial reduplication is applied with *schm* in *confusion-schmusion,* it requires a template. The word *confusion* consists of an unfooted syllable and a two-syllable foot: con[fu.sion], that is $\sigma[\sigma\ \sigma]$. Again, it explains that we need the Alignment constraint. Tableau 12 works the same way as in Tableau 11:

Tableau 12 /tomorrow-RED/

/tomorrow-RED/	MAX-IO	ALIGN($\acute{\sigma}$, L, *schm*, L)	MAX-BR
a. tomorrow-*schm*orrow		*	***
b. tomorrow-tomorrow		**!	
c. *schm*orrow-tomorrow	***!	*	
d. *schm*orrow-*schm*orrow	***!		****
e. tomorrow-*schm*omorrow		**!	*
f. tomorrow-*schmt*omorrow		**!	
☞ g. tomorrow-toschmorrow		*	*

Only one more constraint SONORITY can be added, even though it does not affect the winner. The following tableau is the final one:

Tableau 13 /tomorrow-RED/

/tomorrow-RED/	MAX-IO	ALIGN($\acute{\sigma}$, L, *schm*, L)	SONORITY (*o/no)	MAX-BR
☞ a. tomorrow-*schm*orrow		*		***
b. tomorrow-tomorrow		**!		
c. *schm*orrow-tomorrow	***!	*		
d. *schm*orrow-*schm*orrow	***!			***
e. tomorrow-*schm*omorrow		**!		*
f. tomorrow-*schmt*omorrow		**!	*	

Now, in order to check whether the constraints so far work properly in the cases of bases themselves, let us consider the following:

Tableau 14 /rival/

/rival/	MAX-IO	ALIGN($\acute{\sigma}$, L, *schm*, L)
☞ a. rival		*
b. *schm*ival	*!	

Since the constraint MAX-BR is not relevant here, an optimal candidate can be selected by using only two constraints: MAX-IO and ALIGN(σ́ , L, *schm*, L). Tableau 15 through Tableau 19 work the same way as Tableau 14. The following shows how they work.

Tableau 15 /wonderful/

/wonderful/	MAX-IO	ALIGN(σ́ , L, *schm*, L)
a. wonderful		*
b. *schm*underful	*!	

Tableau 16 /group/

/group/	MAX-IO	ALIGN(σ́ , L, *schm*, L)
a. group		*
b. *schm*oup	**!	
c. *schm*roup	*!	

Tableau 17 /star/

/star/	MAX-IO	ALIGN(σ́ , L, *schm*, L)
a. star		*
b. *schm*ar	**!	
c. *schm*tar	*!	

Tableau 18 /confusion/

/confusion/	MAX-IO	ALIGN(σ́ , L, *schm*, L)
a. confusion		*
b. *schm*usion	****!	
c. *schm*confusion	**!	*

Tableau 19 /tomorrow/

/tomorrow/	MAX-IO	ALIGN(σ́ , L, *schm*, L)
a. tomorrow		*
b. *schm*orrow	***!	
c. *schm*tomorrow	**!	*

Now, let us consider some other cases that are spoken by American native speakers. Even though the data from the written text follow the ranking of constraints given above, some subjects selected an undesirable candidate as favored to others. For example, the case of *confusion* is reduplicated into *confusion-schm*onfusion rather than *confusion-conschmusion* or *confusion-schm*usion. This means that for some speaker, she or he has another constraint that is higher than ALIGN($\acute{\sigma}$, L, *schm*, L) and MAX-BR in her/his grammar as a result of not knowing this pattern of *schm* construction reduplication. It is reasonable to say so if we assume that those few speakers seem to give an emphasis by putting *schm-* at the beginning of the base. This time they are blind to the constraint ALIGN($\acute{\sigma}$, L, *schm*, L). Let us draw the tableau as follows:

Tableau 20 /confusion-RED/

/confusion-RED/	MAX-IO	ALIGN(RED, L, *schm*, L)	ALIGN($\acute{\sigma}$,L, *schm*, L)	SONORITY	MAX-BR
a. confusion-cons*chm*usion		***!	*		
b. confusion-confusion		*!	**		
c. *schm*usion-confusion	****!	*	*		
d. *schm*usion-*schm*usion	****!				
☞ e. confusion-*schm*onfusion			**		
f. confusion-*schm*confusion			**	*!	

In short, the constraint ALIGN(RED, L, *schm*, L) can be called a floating constraint in this case. While that constraint is floating about, depending on the speaker's intention, it makes a change of the ranking of constraints and results in the different output as an optimal to them at that moment of utterance. Later, those speakers may choose their optimal output by changing the ranking hierarchy, that is, by changing their intention.

We have seen the data relevant to the reduplication with *schm-* and found *schm* was not necessary to be in input as well as in base. Actually, it does not seem to make any difference in finding the optimal output whether putting *schm* as an input or not. This means that it is not necessary to admit the prespecified *schm*. In terms of the existence of templates, there is no templactic requirement within the above *schm* structures. Template-free reduplication includes the base plus switching the first onset to *schm-*. There are cases where the first syllable has no stress at all. In this case, the following stressed syllable, primary or secondary, takes *schm*. Within OT account, two constraints relevant to deprecatory prefix *schm* are set up using Alignment constraints: ALIGN(RED, L, *schm*, L) and ALIGN($\acute{\sigma}$, L, *schm*, L). Usually most people consider ALIGN($\acute{\sigma}$, L, *schm*, L) highly ranked than ALIGN(RED, L, *schm*, L). This means that the *schm*-reduplication seems so complicated at a glance, but a closer inspection reveals that we find that the stress plays an important role in *schm* construction. In short, the *schm-* reduplication has an effect of stress. The deprecatory *schm-* should be placed in the stress placement; in other words, in the first syllable in trochaic foot.

In addition, there are several other things we were able to confirm with the construction of *schm*-reduplication. With respect to the selection of a more favored form than other, the constraint SONORITY was used in that one follows sonority scale rather than the other. Also, we saw that consonant clusters as well as the ones with glide *w* work as a unit. Furthermore, in determining whether two optimal winners will be acceptable or not, more examples, such as *confusion-conschmusion* and *confusion-schmusion*, should be discussed. One possible explanation would be that every constraint has its ranking with one another and the lowest constraint, which might be MAX-BR here, by determining the optimal winner, in one way, and the optimal one, in another way. In other words, two outputs are used in real words and they are the ones that minimally violate the constraints within the given grammar and have only difference in violating the lowest constraint.

However, we tend to have one optimal output that most speakers are most likely to use and we may have another possible output that some speakers might happen to produce by accident or on purpose. Human beings can create or produce what they want by focusing on a specific thing, which can be referred to by a constraint other than another. The idea of the richness of the base can be one support that human beings as speakers might happen to produce every possible candidate. OT just assumes that there must be one optimal output most speakers are likely to use. They share most of the constraints that are assumed to be universal in a language-particular ranking hierarchy.

4. Discussion

4.1. Stress Foot

The data of *schm* construction have proven that stress plays an important role in reduplication with *schm*, whether the first syllable has the primary or secondary stress on it. However, the number of syllables does not seem to be a matter and has no limitations.

While Poser (1989:117) points out that stress involves not merely a set of diacritics indicating the relative prominence of the syllables of a word but the construction of a constituent, the stress foot, he argues for the existence of a metrical foot in Diyari, a South Australian language. As a constituent, according to him, the stress foot plays a role in the placement of stress but is also available to condition other phonological and morphological processes.

Before we go further, we should understand the metrical phonology, developed in the 1970s. This metrical phonology is the central assumption of which is that stress is a rhythmic phenomenon, encoded by strong-weak relations between syllables (Kager 1999). Kager (1999:142) presents metrical feet as an example of the word *Alabama*, which consists of two pairs of syllables standing in such a strong-weak relationship [æ.lə.bæ.mə], along with the following morphological categories:

(21) (. *)	PrWd level
(* .)(* .)	Foot-level
æ.lə. bæ.mə	Syllable-level

The above word *Alabama* has two metrical feet, where the first syllable of each foot contains the stress, so called trochees. Within the Prosodic Word level, according to Kager, the head is on the right side, while the non-head is on the left edge. The following is the set of universal prosodic categories in a hierarchical relation (McCarthy and Prince 1986, 1993a; Kager 1999):

(22) Prosodic Hierarchy

PrWd	Prosodic Word
|	
F	Foot
|	
σ	Syllable
|	
μ	Mora

Every prosodic category in the above hierarchy has an element of the next lower level category as its head: every PrWd contains a (main-stressed) foot; every foot contains a (stressed) syllable; and every syllable contains a mora, a unit of quantity, determining heavy syllables that contain two moras and light syllables that contain one mora.

Considering my data of *schm* reduplication, let us find out the evidence of the status of foot. First, consider the words that have no stress on the first syllable and their preferred reduplication as follows:

(23) Compúter-No   Confúsion-*shm*úsion

Tomáto-*schm*áto	Tomórrow-*schm*órrow
Commúter-*schmm*úter	Irréverent-*schm*éverent/*schm*réverent

Except for the case of *computer*, speakers seem to respond to the first syllable of the trochee foot. This can be supported by expletive infixation, which is an important argument by McCarthy (1982). As Hammond (1999:161) mentions, this expletive infixation concerns the distribution of the expletive *fuckin* (in some American dialects) or *bloody* (in some British and Australian dialects) when it occurs within words in some dialects, e.g., *fan-fuckin-tastic*. In this example, since the first syllable *fan* does not have any primary or secondary stress and then is considered as the unfooted syllable, the expletive *fuckin* is inserted at the left edge of the first footed syllable, which can contain either primary stress or secondary stress at the word level. In other words, the expletive *fuckin*' seems to be aligned with the left edge of the first foot.

Hammond (1999:162-4) presents the possibility of infixation in multi-syllabic words: disyllabic, trisyllabic, four-syllable words, and longer words. Those words can be shown as follows:

(24) Expletive sites

[σ̀][σ́]	s à rd í ne	s à r-f*-d í ne [s à rfʌkn̩d í n]
[σ́ σ][σ̀]	á mpers à nd	á mper-f*-s à nd [ǽ mpr̩fʌkn̩s æ̀ nd]
[σ̀][σ́ σ]	b à nd á nna	b à n-f*-d á nna [b æ̀ nfʌkn̩d ǽ nə]
[σ̀][σ́][σ̀]	b ì chlór ì de	b ì -f*-chlór ì de [b à yfʌkn̩kʰkór à yd]
[σ̀ σ][σ́]	Tènness é e	Tènne-f*-ss é e [tʰɛ̀nəfʌkn̩s í]
σ [σ̀][σ́]	alòngs í de	alòng-f*-s í de [əlɔ̀ŋfʌkn̩s á yd]
[σ̀][σ̀][σ́]	Timbùktú	Tim-f*-bùktú [tʰ ì mfʌkn̩bʌktʰú]
		Timbùk-f*-tú [tʰ ì mbʌkfʌkn̩tʰú]
[σ́ σ][σ́ σ]	M ì nnesóta	M ì nne-f*-sóta [m ì nəfʌkn̩sórə]
[σ́ σ] σ [σ́]	à quamar í ne	à qua-f*-mar í ne [æ̀ kwəfʌkn̩mər í n]
		à quama-f*-r í ne [æ̀ kwəməfʌkn̩r í n]
σ [σ́][σ́ σ]	elèctr í cian	elèc-f*-tr í cian [əlɛ̀kfʌkn̩tʰr í šn̩]
[σ́][σ́ σ] σ	c à nt á nkerous	c à n-f*-t á nkerous [kʰ æ̀ nfʌkn̩tʰ ǽ ŋlr̩əs]
[σ́][σ́ σ][σ́]	m ì sùnderst á nd	m ì s-f*-ùnderst á nd [m ì sfʌkn̩ʌndr̩st ǽ nd]
		m ì sùnder-f*-st á nd [m ì sʌndr̩fʌkn̩st ǽ nd]

[ó][ó][ó σ] ì nflù é nza ì n-f*-flù é nza [ì nfʌkn̩flùɛ́nzə]
ì nflù-f*- é nza [ì nflùfʌkn̩ɛ́nzə]
[ó σ] σ [ó σ] à bracad á bra à bra-f*-cad á bra [æ̀ brəfʌkn̩kəd ǽ brə]
à braca-f*-d á bra [æ̀ brəkəfʌkn̩d ǽ brə]
[ó σ] σ [ó σ] W ì nnepes á ukee W ì nne-f*-pes á ukee [w ì nəfʌkn̩pəsɔ́ki]
W ì nnepe-f*-s á ukee [w ì nəpəfʌkn̩sɔ́ki]
[ó][ó σ][ó σ] σ ph à nt à smagórical
ph à n-f*-t à smagórical [f æ̀ nfʌkn̩t^{h} æ̀ zməgórəkl̩]
ph à nt à sma-f*-górical [f æ̀ nt^{h} æ̀ zməfʌkn̩górəkl̩]
[ó σ][ó σ][ó σ] σ h à mamèlid á nthemum
h à ma-f*-mèlid á nthemum [h æ̀ məfʌkn̩mɛ̀ləd ǽ n θ əməm]
h à mamèli-f*-d á nthemum [h æ̀ məmɛ̀ləfʌkn̩d ǽ n θ əməm]
[ó σ][ó σ][ó σ] Àpal à chicóla
Àpa-f*-l à chicóla [æ̀ pəfʌkn̩l æ̀ čəkhólə]
Àpal à chi-f*-cóla [æ̀ pəl æ̀ čəfʌkn̩khólə]

From the above data, we may assume that the expletive *fuckin'* tends to be located on the foot boundary position, either between feet, after foot, or before foot. However, one of the facts in common among the expletive *fuckin'* is that the first foot coming right after the expletive *fuckin'* starts with the stressed foot. In other words, the expletive *fuckin'* can be inserted before the stressed foot but at the foot boundary position. This generalization can include the optional cases where there are two outputs as a result. As Hammond concludes at the end of the argument of the expletive infixation, without positing the foot as part of the way people organize prosody unconsciously, it would be rather difficult to capture these patterns.

Assuming this distributional evidence of the foot status, we should revise the analysis of my data tableaux, by changing the constraint about my *schm* data from Align(ó , L, schm, L) to Align(Ft, L, schm, L). This means that, more precisely speaking, the infixation of either the pseudo-prefix *schm* or the expletive *fuckin'* work with the foot boundary rather than the syllable boundary. The following is one example of a new tableau of the case of *wonderful-schmunderful* reduplication:

Tableau 21 /wonderful-RED/

/wonderful-RED/	MAX-IO	ALIGN(Ft, L, *schm*, L)	MAX-BR
☞ a. wonderful-*schm*underful		*	*
b. wonderful-wonderful		**!	
c. *schm*underful-wonderful	*!	*	
d. *schm*underful-*schm*underful	*!		*
e. wonderful-*schm*erful		*	****!
f. wonderful-*schm*wonderful		*	**!

In short, my data seems similar to the above arguments in that *schm* as deprecatory prefix works in the same way as the expletive does, by being aligned with the left edge of foot, even though the fist unfooted is either deleted or not. This argument will be discussed in the following section.

4.2. Consonant Clusters

Now, let us consider consonant clusters as onset. With regard to the words with consonant clusters (1, 2, 3, 4, 5, 8, and 13) from Appendix A, there is something interesting we can see. It seems that consonant clusters as onsets work as a unit, by being replaced by *schm-*. With respect to the status of onglides, some languages treat onglides as part of the syllable onset, while others treat them as part of a diphthong. According to the instantiation of a native Korean intuition, onglides might belong to the latter case. There is an argument about the status of onglides. According to Hammond and Davis (1995), interestingly in English, the onglide in a CwV sequence is treated as an onset while the onglide in a CyV sequence is treated as co-moraic with the following. Of course, this is a case in English. The following, on the one hand, are some examples in CwV sequences (Davis and Hammond 1995:166):

(25) CwV Sequences

English	*Pig Latin*
Queen	[inkwe]
Twin	[intwe]

Sway	[eswe]

As shown in (25), both the initial consonant and the following onglide /w/ move to the end of the word to derive the corresponding Pig Latin forms, which can be the evidence that the /w/ is being treated as part of the onset. On the other hand, CyV sequences show a different picture as follows (Hammond and Davis 1995:166):

(26) CyV sequences

English	Pig Latin A	Pig Latin B
Cute	[yutke]	[utke]
Puke	[yukpe]	[ukpe]
Mute	[yutme]	[utme]

This asymmetry between CwV and CyV sequences is even clear in the Name Game, a second language game (Hammond 1990). According to him, basically, names undergo a pattern of substitution whereby the first consonant or the onset of the word is replaced by [b], [f], and [m] as in the following:

(27) Harry, Harry, bo-barry
Banana fana fo-farry
Me my mo-marry
Harry

With regard to the cases of three names: *Claire*, *Gwen* and *Beula*, the following picture has been obtained:

(28)

kler	gwen	byulə
ber	ben	byulə
fer	fen	fyulə
mer	men	myulə

In this dialect, the clusters such as *kl* and *gw* seem to work as a unit, but the cluster *by* works separately. In short, the relevant phonotactic constraints and the language game Pig Latin treat the [w] onglide in CwV sequences as part of the onset while the same phenomena treat the [y] onglide in CyV sequences as part of a diphthong, co-moraic with the following vowel.

Returning to my data including onglides, in case of *Gwen*, either *Gwen-schmwen* or *Gwen-schmen* is preferable. It seems to me that subjects tend to confuse the status of onglide *w*, since it has been a broad issue whether it is as co-moraic with the following vowel or as an onset. Actually, I found that since subjects are not linguistics specialists, some of the spellings distinctions may have been too subtle, for example in such as *-ews*/*-us* in *news* and *-u*/*-eu* in Beula (Hammond, p.c.). Further examples should be examined in order to determine support for the above argument.

4.3. Template

As we have seen from the previous studies, there exist prosodic units called prosodic word (PrWd), foot (F), syllable (σ), and mora (μ). These prosodic categories are called templates.

In terms of the difference between total reduplication and partial reduplication, the latter cases tend to follow the templatic requirement on the invariant shape of the reduplicant. That template can be one of the prosodic categories.

Poser (1989:132) states that a number of phenomena other than stress depend on the stress foot in Diyari, as a template in reduplication. The following are some of the representative forms presented by Poser (1989):

(29) CVCV Reduplication

Stem	Reduplication	
daka	dakadaka	'to pierce'
ŋama	ŋama ŋama	'to sit'
Wakari	wakawakari	'to break'

(30) CVCCV Reduplication

Stem	Reduplication	
kanku	kankukanku	'boy'
kulkuŋa	kulkukulkuŋa	'to jump'

With the assumption, following the proposal Marantz (1982), that reduplication is to be described as involving instantiation of a template, he initially presents the template as CV(C)CV, pointing out that CV(C) is simply the first syllable. His proposal is that the CV in fact represents Σ and that the template is correctly formulated as ΣΣ=ø, that is, as reduplication of the first disyllabic foot.

However, it is hard to say that total reduplication requires a certain template such as mora, foot, syllable, or prosodic word. Total reduplication just copies the base whatever the shape. In other words, in cases of total reduplication, whatever unit the base has copied, it yields reduplication in the order of Base-Reduplicant or Reduplicant-Base according to the alignment of a given language grammar. Gafos (1998) argues that cases of a-templatic reduplication do exist, by showing how the surface properties of the reduplicants could emerge from the interaction of a small set of simple constraints. In the verbal morphology of Temiar, one of the main Austroasiatic languages of Malaysia, he showed two aspects: the simulative and continuative as in the following (p. 517):

(31)

	Biconsonantal	Triconsonantal
a. Base	c^1vc^2 kɔɔw 'to call' gəl 'to sit down' rec 'to eat'	$c^1.c^2vc^3$ s.lɔg 'to lie down' s.maaɲ 'to ask a question' s.luh 'to shoot'
b. Simulative	$\mathbf{c}^1a.c^1vc^2$ ka.kɔɔw ga.gəl ra.rec	$c^1a.c^2vc^3$ sa.lɔg sa.maaɲ sa.luh
c. Continuative	$\mathbf{c}^1\mathbf{c}^2.c^1vc^2$ kw.kɔɔw gl.gəl rɲ.rec (Southern Temiar)	$c^1\mathbf{c}^3c^2vc^3$ s**g**.lɔg sɲ.maaɲ s**h**.luh

The above data show that while the simulfactive affix includes the vowel in its lexical specification while a copy of a consonant in the continuatives appears immediately to the left of the final syllable of the base. The following shows each example of affixation for both the continuative case in Tableau 8 and the simulfactive one in Tableau 22:

Tableau 22 Continuative of Triconsonantals

CONTRED, sɔ.lɔg	*PREFINAL-V	MARKEDNESS	MAX-BR
a. sɔ.lɔg	*!	****	***
b. s.lg.lɔg		******!	**
☞ c. sg.lɔg		****	***

*PREFINAL-V: Prefinal (= unstressed) vowels are not allowed.

Tableau 23 Simulfactive of Triconsonantals

a^{RED}, slɔg	ONS	MARKEDNESS	MAX-BR
a. s.la.lɔg		******!	***
☞ b. sa.lɔg		*****	****

Gafos(1998) states that the variability in the shape of the reduplicant results from a grammar that does not impose any constraint particular to the shape of the reduplicant per se. He sums up by saying that the simulfactive and continuative affixes are reduplicative morphemes and have no templatic requirement. The only difference between the two is that the simulfactive affix includes in its lexical specification the vowel /a/. In short, according to Gafos, in order to find the optimal output in each case, we do not require a certain template, but do just need simple phonological constraints such as MAX-BR, ONS, and so on.

The idea of a-templatic or template-free reduplication also can be supported by Hendricks (1999). He shows that the reduplicants in his data are not clearly delimited by a prosodic unit, and therefore provide support for the position that templatic constraints are not adequate.

Finally, Golston (1998) shows that an analysis of Middle English Alliterative Verse uses purely phonological constraints without recourse to language-specific or meter-specific constraints and without an abstract metrical template. He tries to show that the metrical patterns in *Cleanness*, which is a Middle English poem, can be described in quite some detail by using the constraints on weight, alignment, identity, and binarity—nothing more than the very constraints we need to describe languages in general and Middle English in particular.

Applying the above idea to my data of *schm* reduplication, we might conclude that the template as a phonological category exists, as in *confusion-schmusion*.

However, before we argue for the existence of template in reduplication, we should be able to account for the case of *confusion-conschmusion*, which I did not put in the multiple-questionnaire but exist as the classical version. Both *confusion-conschmusion* and *confusion-schmusion* reduplication are considered as optimal outputs by different speakers. This can be supported by the idea that some speakers seem to consider this *schm* reduplication as total reduplication as in *confusion-conschmusion* and others as partial reduplication as in *confusion-schmusion*. As we know, only partial reduplication requires a template, while total reduplication does not. Total reduplication copies the whole thing of each given word. The length of words does not seem to matter, as previous studies say. With this assumption, we may explain both cases separately. In case of total reduplication, speakers still have the alignment constraint ALIGN($\acute{\sigma}$, L, *schm-*, L) in their language, which can be described, using Poser's term Stress Foot, as in the following constraint:

(31) Alignment Constraint
ALIGN(Stress Foot (trochee), L, *schm*, L)

The following tableau shows its ranking and interaction among candidates and presents the optimal output, *confusion-conschmusion*.

Tableau 25 /confusion-RED/

/confusion-RED/	MAX-IO	ALIGN(Ft, L, *schm*, L)	MAX-BR
☞ a. confusion-cons*chm*usion		*	*
b. confusion-confusion		**!	
c. *schm*usion-confusion	****!	*	
d. *schm*usion-*schm*usion	****!		****
e. confusion-*schm*onfusion		**!	*
f. confusion-*schm*confusion		**!	
g. confusion-schmusion		*	****

The output *confusion-conschmusion* has experienced the deletion of only one consonant that is the onset of the first syllable within the first trochaic foot as well as satisfying the undominated constraint MAX-IO. On the other hand, partial reduplication allows the deletion of the first syllable that has no stress at all, focusing on the left edge of the foot.

This can be supported by an idea of so called TETU: the emergence of the unmarked (McCarthy and Prince 1994). A plausible or possible markedness constraint, which we need to find out in detail, is inserted by allowing a partial reduplication as follows:

Tableau 26 /confusion-RED/

/confusion-RED/	MAX-IO	ALIGN(Ft,L,*schm*,L)	*Markedness	MAX-BR
a. confusion-cons*chm*usion		*	*	*
b. confusion-confusion		**!		
c. *schm*usion-confusion	****!	*		
d. *schm*usion-*schm*usion	****!			****
e. confusion-*schm*onfusion		**!		*
f. confusion-*schm*confusion		**!		
☞ g. confusion-*schm*usion		*		****

Whether different speakers choose *conschmusion* or *schmusion* as a redulicant, they tend to acknowledge the existence of template, Foot in the above data. It is even clear in partial reduplication. In short, in terms of templatic issue, my data do not have any problem in standing as a template proponent. However, further studies need to be done in order to make a final decision of whether it is required or not in reduplication (cf. Hendricks).

5. Conclusion

Now, we can make some general statements of language phenomena from the present study. First, the basic idea of linguistic procedures comes from the idea of interaction between markedness constraints and faithfulness constraints. While faithfulness constraints require that the output should be matched to the correspondent input, markedness constraints require the production of a sound should satisfy the ease of utterance. Due to various interactions between those two kinds of constraints, numerous outputs can be produced by trying not to violate the higher ranked constraints in a particular language environment, e.g., English or English loanwords. In terms of the markedness constraints, the most unmarked syllable structure CV satisfies the constraints ONS and NOCODA.

In addition, SONORITY constraint can be a good example for markedness; this seems to be a universal constraint so every language should have prominence in nucleus. This is resulted in the mirror effects within the nucleus in the middle: more sonorous from onset to nucleus and from coda to nucleus position. MAX-IO and MAX-BR are prevailing instances for faithfulness. With the assumption of floating constraints, markedness constraints tend to belong to these categories rather than faithfulness, by emerging, sometimes, more prevailing in reduplicants and outputs (TETU). Even though they are not undominated constraints, they tend to have enough power to change the optimal output from an expected one.

Second, in dealing with consonant clusters, each language seems to have a different system. From the present study, in *schm* structures, English treats consonant clusters as a unit.

Third, I am able to agree, from my current study, to the idea of the existence of prosodic categories, more specifically a prosodic category foot: trochee (strong-weak pattern) in English. More data would be examined for further studies, not only in English but also in other languages.

Fourth, reconsidering OT, it seems to support my data, but OT should be extended to some degree in order to fully account for the variations that are common linguistic phenomena cross-linguistically. Other than that, OT still holds true.

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Appendix

Base	The most preferable	The second	The last
1. cream	cream-*schm*ream(4)	cream-*schm*eam (3)	No(2)
2. spoon	spoon-*schm*oon(8)	spoon-*schm*poon (1)	No( )
3. group	group-*schm*oup(6)	group-*schm*roup (2)	No(1)
4. pride	pride-*schm*ide(5)	pride-*schm*ride(4)	No( )
5. star	star-*schm*ar(9)	star-*schm*tar( )	No( )
6. college	college-*schm*ollege(9)	college-*schm*ege( )	No( )
7. rival	rival-*schm*ival(8)	rival-*schm*al(1)	No( )
8. schedule	schedule-*schm*edule(6)	No(2)	schedule-*schm*chedule(1)
9. cashier	cashier-*schm*ashier(8)	No(1)	cashier-*schm*ier ( )
10. news	news-*schm*ews(6)	news-*schm*us(3)	No( )
11. computer	No(5)	computer-*schm*puter(3)	computer-*schm*omputer(1)
12. television	television-*schm*elevision(9)	television-*schm*evision( ) elevision-*schm*ision( ) No( )	
13. spray	spray-*schm*ay(3) No(3)	spray-*schm*ray(2)	spray-*schm*pray(1)
14. confusion	confusion-*shm*usion(5)	confusion-*shm*onfusion(2)	No(1)
15. Beula	Beula-*schm*ula(7)	No(2)	Beula-*schm*eula( )
16. tomato	tomato-*schm*ato(7)	tomato-*schm*omato(1) No(1)	
17. tomorrow	tomorrow-*schm*orrow(6)	No(2)	tomorrow-*schm*omorrow(1)
18. commuter	commuter-*schm*muter(7)	commuter-*schm*ommuter(1) No(1)	
19. engineer	engineer-*schm*engineer(8)	No(1)	engineer-*schm*ineer( )
20. boomerang	boomerang-*schm*oomerang(7)	boomerang-*schm*erang(1) No(1)	

21. wonderful	wonderful-*schm*underful(8)	wonderful-*schm*erful( )	No(1)
22. Gwen	Gwen-*schm*wen(4) Gwen-*schm*en(4)	No(1)	
23. irreverent	irreverent-*schm*reverent(3) irreverent-*schm*everent(3)	rreverent-*schm*irreverent(1) No(1)	
24. revolution	revolution-*schm*evolution(5)	revolution-*schm*olution(2)	revolution-*schm*ution(1) No(1)
25. summary	summary-*schm*ummary(8)	summary-*schm*ary(1)	No( )