Resyllabification of English Loanwords Borrowed from Indonesian Language

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Abstract

Resyllabification happens when the syllable structure of the source language differ from that of the recipient language. This article aims at observing how Indonesian words borrowed by English language are resyllabified in order to match with the syllable structures of English language as the recipient language. Results show that the resyllabification of English loanwords can be analyzed by applying deletion and addition rule. The result of deletion rule is the reduced number of syllable of loanwords (such as in cutch, cockatoo, cajeput, kris, prau, tombac, and trepan), while addition rule results on the addition of the number of syllable (such as in catechu, caladium, mangosteen, and pandanus).

Keywords*: resyllabification, borrowing, source language, recipient language*

Language and Gender

One of the characteristics of present day English is the size of mixed character of its vocabulary. It is due to the fact that English has heavily adopted thousands of words from other languages. In this regard, English is said to be a receptive language since a lot of words are borrowed from many different languages. It is obvious that borrowing is one of many ways to expand the vocabulary from other languages. Borrowing takes place when one language -so called recipient language- takes a word from other language -so called source language. The borrowed words are then called loanwords, which are saved into recipient language's lexicon. During the process of borrowing, a borrowed word needs to be adjusted to the phonological and morphological structure as well as its pronunciation patterns and grammatical rules of the recipient language.

This article provides an observation of the syllable structure of English as the recipient language and Indonesian as the source language. As a result, resyllabification is required since the syllable structures of Indonesian language are different from those of the English language. In order to do the analysis of resyllabification rules in English loanwords, data of 50 words is collected from Merriam-Webster's 11th Collegiate Dictionary.

Syllabification Theory

Basically, a syllable is a unit of speech that consists of a nucleus surrounded by onsets and codas. A word which contains a single syllable is called a monosyllabic word, while if it consists of more than one syllable, it is called a polysyllabic word. Onset and Coda consists of consonants, while nucleus consists of vowels (in some extent, liquids and nasals). Peak and coda function together to form a Rhyme.

The number of segments is important in recognizing English syllables. Onset has a maximum consonant number of two. Three

consonants are allowed as long as it includes a sequence of three-consonant cluster, namely /s/ as the first segment, voiceless stops (/p/ or /t/ or /k/) as the second segment, and approximants (*liquids* or *glides*) as the third segment. Coda has two consonants at maximum. The third segment allowed is /s/, /z/, /t/. Each segment in both Onset and Coda constitutes one X.

Rhyme is essential in a syllable since it determines whether the syllable is well-formed or not. The number of X is used as the basic of this consideration. A well-formed syllable consists of 3-X position in the Rhyme. Stressed vowel needs to have minimum 2-X position in Rhyme, thus it is called heavy syllable. Conversely, unstressed vowel must have minimum 1-X position in Rhyme so-called light syllable.

Syllabification Principle

Most languages tend to follow these following two principles of syllabification, namely Sonority Sequence Principle (SSP) and Maximal Onset Principle (MOP). In fact, several languages do not follow MOP, but most of the languages follow SSP.

1. Sonority Sequence Principle (SSP)

The sonority of a sound is the relative loudness compared to other sounds of the same length, stress, and pitch (Ladefoged, 1993). Therefore, a syllable must contains sonorous element and its associated less sonorous segment. A syllable usually has a peak consisting of the most sonorous element within a syllable (vowels) which is recognized as nucleus. Onsets and codas are the second and third elements of the syllable. A nucleus becomes the core of the syllable so that its presence is obligatory. Conversely, codas and onsets are not obligatory.

Syllables are associated with peaks of sonority which is used to predict the number of syllable of English words. Thus, a monosyllabic word typically has a single sonority peak, a bisyllabic word usually has two peaks, and polysyllabic has more than one peak. According to the sonority scale, voiceless plosives are the least sonorous, while low vowels are the most sonorous among the segments. The degree of sonority determined from the least sonorous until the most sonorous sounds are oral stops, fricatives, nasals, liquids, semivowels, and vowels (Giegerich, 1992).

A sequence of sound produced in one syllable is explained as follows. The sequence begins with the increase of sonority until it reaches the most sonorous sound in a syllable (the peak) and ends with the decrease of the sonority. The sonority scale is essential to determine the number of syllables. The word like *clamp* is considered as monosyllable since it employs one sonority peak. The word *Andrew* is considered as bisyllable since it employs two sonorant segments.

2. Maximal Onset Principle (MOP)

Maximal onset principle is a rule which requires syllable boundaries to be placed in such a way that onsets are maximal (Giegerich, 1992). This rule requires a consonant which may occupy either onset or coda goes to onset position rather than coda position. For instance, if the word *metron* is separated by a syllable boundary, it becomes [me.trən] rather than [met.rən]

Accordingly, O'Graddy et al (1992) illustrates two words as an example, such as *extreme* and *decline*. According to the maximal onset principle, they are syllabified as [ɛk.strɪm] and [dɪ.klajn]. Whereas the fact the incorrect syllabifications, such as [ɛk.strɪm] and [dɪ.klajn] do not violate any phonotactic constraints. It leads to the conclusion that syllabifications are prevented by a universal syllable-shape constrains that require the onset to be as large as possible.

Resyllabification of English Loanwords Borrowed from Indonesian Language

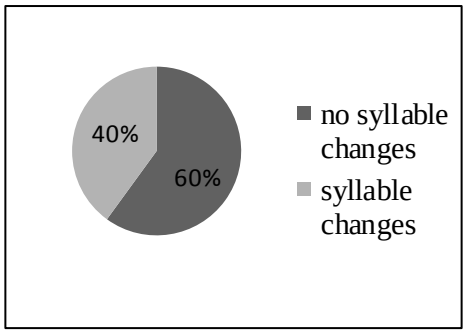
Different languages have different syllable structures since there are restrictions of permissible sound sequences in a language. Syllable structures of Indonesian languages observed from the data are V (such as in **a**gar, **i**kat, **o**rang**u**tan, si**a**mang, **u**pas), VC (rupi**ah**), CV (**ba**tik, bam**bu**, **te**ripang, tem**ba**ga), and CVC **(kam**pong, ke**ris, gam**bir, gu**dang,** ka**pur**). Conversely, English has more varieties of syllable structure. The syllable structures of English language observed from the data are V (such as in rupi**ah**), VC

(caladi**um,** day**ak)**, CV (**ba**biroussa, bam**boo, ba**tik**, da**mmar), CVC (**cutch**, **cam**phor, **ging**ham, **tom**bac), CVCC (com**pound)**, CCV (**prau, tre**pang), and CCVC (mango**steen, kris**). It can be concluded that Indonesian and English have somewhat different syllable structure, so the process of resyllabification is possible.

Resyllabification is seen as the process of reanalysis the syllable structure of the loanwords. It can be conducted by the application of insertion and deletion rules. Eventually, these rules may change the syllable structure of the source language so that the desired syllable structure for the target language can be obtained (Crystal, 2008).

Dealing with this analysis, the syllable structure of both source and recipient language are determined. Figure 1 shows that 30 loanwords (60%) have the same syllable structure of original words. It is because the syllable structure of the source language conform the structure of the recipient language. Therefore, they do not need to be resyllabified. Conversely, 20 loanwords (40%) have different syllable structure with those of recipient language. Finally, they are resyllabified to match the acceptable syllable structure of target language.

Figure 1
English Loanwords
Borrowed from Indonesian Languages



1. Loanwords with No Changes in Syllable Structure

Loanwords with no changes in syllable structure are determined by two considerations. First, there is no phonological rule applied significantly so that there is no change in sounds and spellings of the loanwords. As a result, it maintains the syllable structure of originals and it automatically cannot alter the syllable structure. The examples are *banteng* ['ban,teŋ], and *sen* ['sen]. Second, there applies phonological adaptation/ rules, but they do not change the syllable structure. The word *bamboo* [,bæ̃m'bu:], for instance, really adapts the phonological rule of the target language. It undergoes at least three phonological rules, such as vowel laxing, vowel lengthening, and vowel nasalization. The phonological rules can be explained by the following table.

Table 1
Phonological rules and Syllabification of the word *bamboo*

Source Language Representation (SLR)	**/bambʊ/ → CVC.CV (2 syllables)**
Vowel laxing Vowel lenghtening Stress stabilization Vowel nasalization	[bæmbʊ] [bæmbu:] [,bæm'bu:] [,bæ̃m'bu:]
Target Language Representation (TLR)	[,bæ̃m'bu:] → CVC.CV (remains 2 syllables)

Most of the loanwords with no changes in syllable structure constitute some phonological rules, such as vowel laxing, vowel lengthening and diphthongization. Nevertheless, these rules do not change the syllable structure since they occur within one syllable. Tense vowels and diphthongs are considered as one phoneme and one V. Akmajian *et al* (2001) defines diphthong as '*a vowel that consists of two parts, a louder vowel and either an onglide or an offglide, which together serve as the nucleus of a single syllable*'. Therefore, it is clear that diphthong can be seen as a smooth transition between two vowel sounds within the same syllable.

Table 2
Loanwords with No Changes in Syllable

No	Source Language	Syllable template	Recipient Language	Transcriptions	Syllable Template
1	agar	V.CVC	agar	[ʼeɪ.gɑ:r]	V.CVC
2	babirusa	CV.CV.CV.CV	babiroussa	[ˌbæ.bɪʼru:.sə]	CV.CV.CV.CV
3	bamboo	CVC.CV	bamboo	[ˌbæmʼbu:]	CVC.CV
4	banteng	CVC.CVC	banteng	[ʼban,teŋ]	CVC.CVC
5	batik	CV.CVC	batik	[bæʼti:k]	CV.CVC
6	dammar	CV.CVC	damar	[ʼdæ.mər]	CV.CVC
7	dayak	CV.VC	dayak	[ʼdaɪ.ak]	CV.VC
8	durian	CV.CV.VC	durian	[ʼdʊ.ri:.ən]	CV.CV.VC
9	gambir	CVC.CVC	gambier	[ʼgæm.bɪr]	CVC.CVC
10	gong	CVC	gong	[ʼgɔ:ŋ]	CVC
11	gudang	CV.CVC	godown	[ʼgəʊ.daʊn]	CV.CVC
12	ikat	V.CVC	ikat	[ʻi:.kɑ:t]	V.CVC
13	jelutong	CV.CV.CVC	jelutong	[ʼje.lə.tɒŋ]	CV.CV.CVC
14	kampong	CVC.CVC	kampong	[ʼkæm.pɒŋ]	CVC.CVC
15	kapuk	CV.CVC	kapok	[ʼkeɪ.pɒk]	CV.CVC
16	kati	CV.CV	caddy	[ʼkæ.di]	CV.CV
17	kati	CV.CV	catty	[ʼkæ.ti]	CV.CV
18	kechap	CV.CVC	ketchup	[ʼke.ʧəp]	CV.CVC
19	kutu	CV.CV	cootie	[ʻku:.tɪ]	CV.CV
20	luri/ nuri	CV.CV	lory	[ʻlɔ:.rɪ]	CV.CV
21	orangutan	V.CVC.V.CVC	orang-utan	[ɔ:ʼr æŋ.ə.tæn]	C.CVC.V.CVC
22	padi	CV.CV	paddy	[ʼpæ.di]	CV.CV
23	parang	CV.CVC	parang	[ʼpɑ:.ræŋ]	CV.CVC
24	pengguling	CVC.CV.CVC	pangolin	[pæŋʼgəʊ.lɪn]	CVC.CV.CVC
25	rambutan	CVC.CV.CVC	rambutan	[ræmʼbu:.tən]	CVC.CV.CVC
26	rotan	CV.CVC	rattan	[ræʼtæn]	CV.CVC
27	sagu	CV.CV	sago	[ʻsa.gəʊ]	CV.CV
28	sarong	CV.CVC	sarong	[səʼrɒŋ]	CV.CVC
29	sen	CVC	sen	[ʼsen]	CVC
30	siamang	CV.V.CVC	siamang	[ʼsi:.ə.mæŋ]	CV.V.CVC

2. Loanwords with Changes in Syllable Structures

Resyllabification is implemented in this category under one condition. The condition is that when the phonological rules applied to the source language change the syllable structure of the loanwords. After observing the syllable structure of the loanwords, three kinds of changes in syllable are determined. The first is the reduced number of syllable. It occurs when the number of syllables of the loanwords is reduced due to the phonological constraints of the recipient language. The second is the addition of syllable. It adds the number of syllables to the loanwords. It also happens due to the application of phonological rules. The third is the change in syllable template. This process requires the different syllable template between source and target language. Changes in syllable template happen due to the application of the phonological rules of the recipient language.

Table 3
Loanwords with Changes in Syllable Structure

No.	Syllabification		Resyllabification		
	Source Language	Syllable Template	Recipient Language	Transcription	Syllable Template
1	kachu	CV.CV	catechu	[ˈkæ.tə,ʧu:]	CV.CV.CV
2	kachu	CV.CV	cutch	[ˈkəʧ]	CVC
3	kakatua	CV.CV.CV.V	cockatoo	[, kɒ.kəˈtu:]	CV.CV.CV
4	kampong	CVC.CVC	compound	[ˈkɒm.paʊnd]	CVC.CVCC
5	kapur	CV.CVC	camphor	[ˈkæm.fər]	CVC.CVC
6	kasuari	CV.CV.V.CV	cassowary	[ˈkæ.sə,weə.ri]	CV.CV.CV.CV
7	kayuputih	CV.CV.CV.CVC	cajeput	[ˈkæ.ʤə.pʊt]	CV.CV.CVC
8	keladi	CV.CV.CV	caladium	[kəˈlɑ:.de.əm]	CV.CV.CV.VC
9	genggang	CVC.CVC	gingham	[ˈgɪŋ.əm]	CVC.VC
10	gurameh	CV.CV.CVC	gouramy	[gʊˈrə.mi]	CV.CV.CV
11	keris	CV.CVC	kris	[ˈkri:s]	CCVC
12	manggis	CVC.CVC	mangosteen	[ˈmæŋ.gə.sti:n]	CVC.CV.CCVC
13	ngamuk	CV.CVC	amok	[əˈmɒk]	V.CVC
14	pandan	CVC.CVC	pandanus	[pænˈdeɪ.nəs]	CVC.CV.CVC
15	pelangki	CV.CVC.CV	palanquin	[,pa.ləŋˈkin]	CV.CVC.CVC
16	perahu	CV.CV.CV	prau	[ˈpraʊ]	CCV
17	rupiah	CV.CV.VC	rupiah	[ru:ˈpi:.ɑ]	CV.CV.V
18	tembaga	CVC.CV.CV	tombac	[ˈtam.bak]	CVC.CVC
19	teripang	CV.CV.CVC	trepan	[trɪˈpæŋ]	CCV.CVC
20	upas (pohon upas)	V.CVC	upas	[jʊˈpəs]	CV.CVC

a. Deletion Rule

Deletion rule can be observed when there is a vowel deletion within a word. Frequently, omitting vowels can result on the omitting syllable due to the fact that vowels are very fundamental in syllables. Seven loanwords are identified as having syllable simplification which is presented in the following table.

Table 4
Resyllabification of Loanwords via Deletion Rule

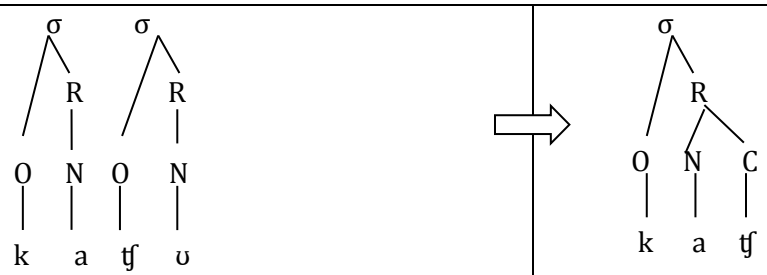
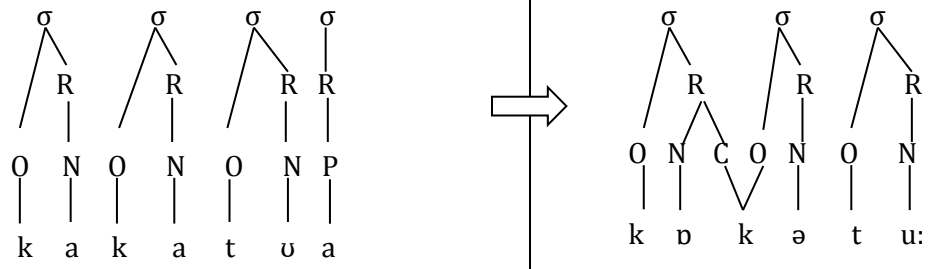
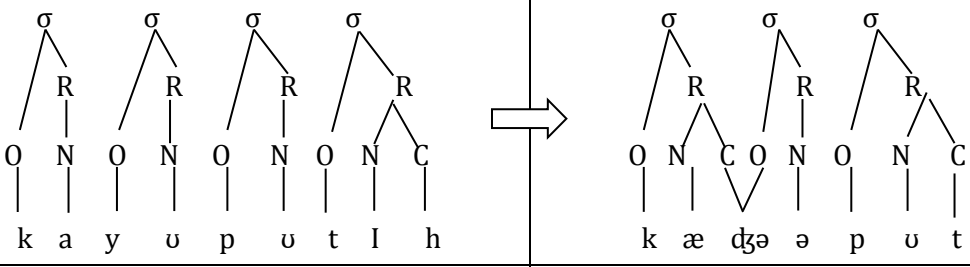
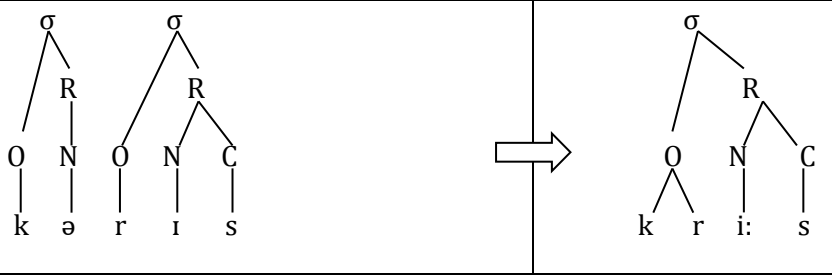
Source language	Number of syllable	Process	Recipient language		Number of syllable
kachu	2 syll	apocope (deletion of final vowel /ʊ/)	cutch	[ˈkəʧ]	1 syll
kakatua	4 syll	apocope (deletion of final vowel /ɑ/)	cockatoo	[, kɒ.kəˈtu:]	3 syll
kayuputih	4 syll	deletion of final sound /ɪh/	cajeput	[ˈkæ.ʤə.pʊt]	3 syll
keris	2 syll	deletion schwa /ə/	kris	[ˈkri:s]	1 syll
perahu	3 syll	deletion schwa /ə/	prau	[ˈpraʊ]	1 syll
tembaga	3 syll	Apocope (deletion of final vowel /ɑ/)	tombac	[ˈtam.bak]	2 syll
teripang	3 syll	deletion schwa /ə/	trepan	[trɪˈpæŋ]	2 syll

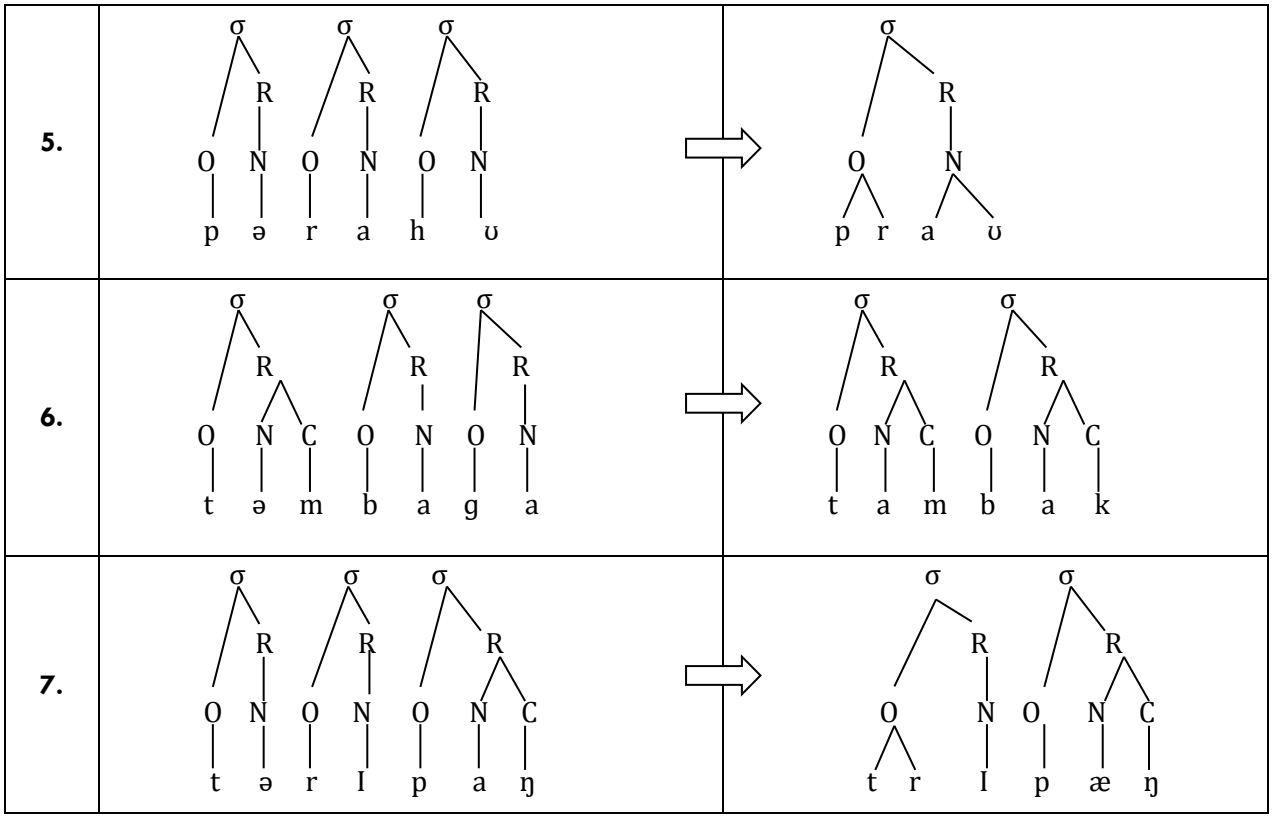
The word *kris* is resyllabified into simpler syllable (from two reduces to one syllable) due to phonological adaptation to the recipient language. It receives stress in the initial syllable, resulting on the deletion of *schwa*. The following phonological rules can explain this process.

Table 5
Phonological Rules and Resyllabification of the word *kris*

SLR	/kərɪs/ ⇨	Syllabification: CV.CVC → 2 syllables
Stress stabilization Aspiration Schwa deletion	['kərɪs] ['kʰərɪs] ['kʰrɪs]	} Schwa deletion
TLR	['kʰrɪs] ⇨	Resyllabification: CCVC → 1 syllable

Table 6. Resyllabification via Deletion Rule

No.	Resyllabification by Reducing Vowel
1.	
2.	
3.	
4.	



Similarly, the word *prau* and *trepang* undergo the process of *schwa* deletion. Thus it can reduce the number of syllable. *Prau* is resyllabified into monosyllable, while *trepang* into bisyllable. The omission of final vowels occurs in the word *cutch, cockatoo, and tombac*. These loanwords are resyllabified due to the omission of final vowel /ʊ/ for *cutch* and /a/ for *cockatoo* and *tombac*. This process is called apocope. These omissions of the final vowel result on the reduced number of syllable. *Cutch* is resyllabified into monosyllable, *cockatoo* into trisyllable, and *tombac* into bisyllable. *Cajeput* [ˈkæ.ʤə.pʊt] undergoes the process of deletion the final vowel /ɪ/ and consonant /h/. In English, /h/ does not occur in the rhyme so that it becomes omitted. This omission makes the syllable reduced into trisyllable.

b. Addition Rule

Addition rule is applied to the recipient language if there are some additions of sounds which also involve vowels. There are four loanwords falling into this category.

Table 7. Resyllabification of Loanwords Via Addition Rule

Source Language	Number of Syllable	Process	Recipient Language	Transcriptions	Number of Syllable
kachu	2 syll	Addition of /t/ and /ə/ in the middle	catechu	[ˈkæ.tə,ʧu:]	3 syll
keladi	3 syll	Addition of vowel /ʊ/ and final consonant /m/	caladium	[kəˈlɑ:.de.əm]	4 syll
manggis	2 syll	Addition of final vowel /i:/ and consonant /t/ and /n/	mangosteen	[ˈmæŋ.gə.sti:n]	3 syll
pandan	2 syll	Addition of final vowel /ʊ/ and consonant /s/	pandanus	[pænˈdeɪ.nəs]	3 syll

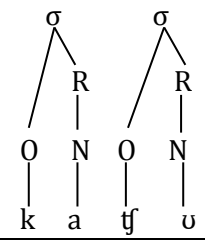
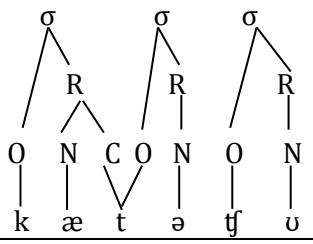
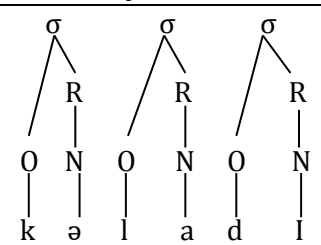
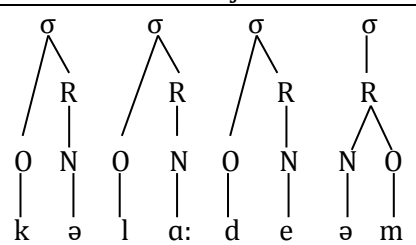
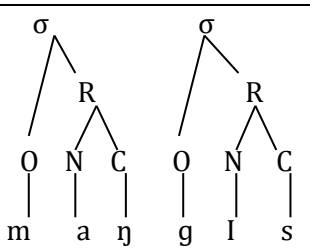
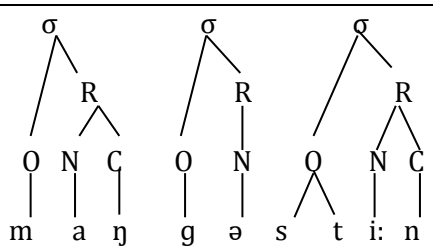
It can be observed that the word *catechu* is the result of /tə/ addition in the middle of syllable, *caladium* addition /ʊm/ in the final syllable, *mangosteen* addition /ti:n/ in the final syllable, and *pandanus* addition /ʊs/ in the final syllable. They are syllable additions occur in the middle and final words. Theories say that to make a syllable, a nucleus (usually vowels, but liquids and nasals are also appropriate) is obligatory. These words consist of vowel which incorporates with consonant to create a new syllable as the addition to the original words.

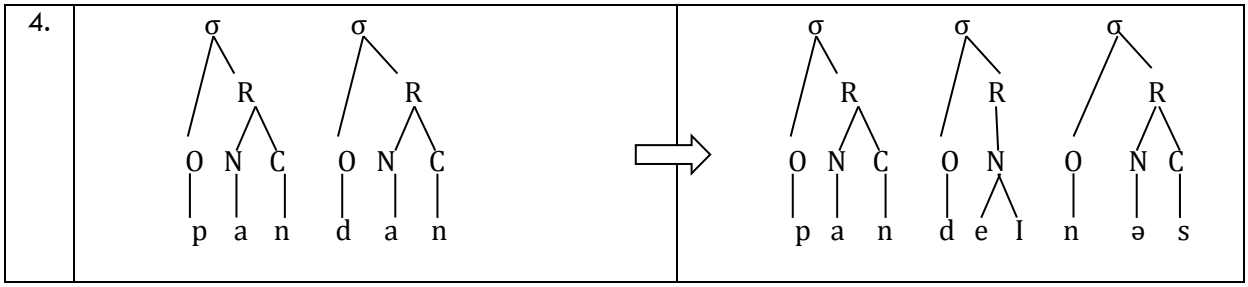
Budiman (2007) presents the phonological rules of the word *pandanus* which includes the addition of sound /ʊ/ and /s/ in the word final. The following table denotes the resyllabification of the word *pandanus* from its original word. *Panadanus* is then resyllabified into trisyllables.

Table 8. Phonological Rules and Resyllabification of the word *pandanus*

SLR	/pandan/ ⇨	Syllabification: CVC.CVC → 2 syllables
Sound addition	[pandanus]	Sound addition /ʊs/
Vowel laxing	[pændanus]	
Vowel fronting	[pændeɪnus]	
Stress stabilization	[pæn'deɪnus]	
Vowel weakening	[pæn'deɪnəs]	
TLR	[pæn'deɪnəs] ⇨	Resyllabification: CVC.CV.CVC → 3 syllables

Table 9. Resyllabification via Addition Rule

No.	Resyllabification by Adding Sounds	
1.		
2.		
3.		



c. Changes in Syllable Template

The following table is a list of syllable template of loanwords which undergo changes due to the phonological adaptation.

Table 10. Loanwords with Changes in Syllable Template

Syllabification		Resyllabification		
Source language	Syllable template	Recipient language	Transcriptions	Syllable template
genggang	CVC.CVC	gingham	['gɪŋ.əm]	CVC.VC
gurameh	CV.CV.CVC	gouramy	[gʊ'rə.mi]	CV.CV.CV
kampung	CVC.CVC	compound	['kɒm.paʊnd]	CVC.CVCC
kapur	CV.CVC	camphor	['kæm.fər]	CVC.CVC
kasuari	CV.CV.V.CV	cassowary	['kæ.sə,weə.rɪ]	CV.CV.CV.CV
ngamuk	CV.CVC	amok	[ə'mɒk]	V.CVC
pelangki	CV.CVC.CV	palanquin	[,pa.lən'kin]	CV.CVC.CVC
rupiah	CV.CV.VC	rupiah	[ruː'piː.ə]	CV.CV.V
upas (pohon upas)	V.CVC	Upas	[jʊ'pəs]	CV.CVC

When comparing the syllable template of borrowed language and borrowing language shown in the table above, the changes of syllable template really exist. The word *gouramy* [gʊ'rə.mi] is originally *gurameh*. It makes difference in the final sound of /h/ in the source language. The sound /h/ is omitted due to the fact that there is no sound /h/ in a syllable onset. Accordingly, this omission of /h/ makes the syllable template change into CV.CV.CV. In *cassowary* ['kæ.sə,weə.rɪ], there is an addition of the sound /w/ in the penultimate syllable. That makes the syllable template become CV.CV.CV.CV. The word *amok* is originally *ngamuk*. There is a deletion of sound /ŋ/ in the penult syllable since English does not allow this sound to occur in the onset position. The syllable template changes from CV.CVC into V.CVC. In *palanquin* [,pa.lən'kin], there is an addition /n/ sound in the word final. Thus, the syllable template changes into CV.CVC.CVC. The word *rupiah* pronounced as [ruː'piː.ə]. There is a /h/ deletion here since English does not allow /h/ occurs in rhyme and a single vowel /ə/ is allowed to make a syllable with only a nucleus. Therefore, the syllable template changes into CV.CV.V In upas [jʊ'pəs], there is an addition of sound /j/ in the penult syllable. Thus it makes the syllable template become CV.CVC. According to the research conducted by Budiman (2007), the phonological rules of the word *gingham* are sound deletion of /g/, nasalization of velar /ŋ/ into /m/, and vowel weakening. The syllable template created is CVC.VC.

Concluding Remarks

Resyllabification of loanwords is applied whenever the syllable structure of the source language differs from that of the recipient language. When Indonesian words enter English language, the phonological adaptation is applied to adjust the phonological rule of English. In many cases, phonological adaptation results on the

change of syllable structure. Thus, the borrowings have to be resyllabified in order to meet the syllable requirements of recipient language.

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