

**A STUDY ON PHONOLOGY OF INDONESIAN SPOKEN BY SASAK SPEAKERS**



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by

**Thalia Qaulan Tsaqiila  
E1D013052**

**English Department  
Faculty of Teacher Training and Education  
Mataram University  
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KEMENTERIAN RISET, TEKNOLOGI, DAN PENDIDIKAN TINGGI  
UNIVERSITAS MATARAM  
FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN  
JURUSAN BAHASA DAN SENI  
Jl. Majapahit No. 62 Telp (0370) 623873 Fax. 634918 Mataram 83125



## RATIFICATION

This is to certify the thesis entitled A Study on Phonology of Indonesian Spoken by Sasak Speakers by Thalia Qaulan Tsaqiila has been approved by the board of advisors as requirement for achieving *Sarjana Pendidikan (S.Pd)* degree in English Education Program Faculty of Teacher Training and Education Mataram University

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First Advisor

Drs. H. M. Husni Muadz, M.A., Ph.D  
NIP. 19540405198012 1 002

Second Advisor

Drs. Nur. Ahmadi, M.Hum  
NIP. 19661231199802 1 002

## ABSTRACT

Despite being an interesting matter to study, Indonesian Phonology is rarely explored. The last almost complete work in the field is Lapoliwa's, which dated back to the year 1981. Following Lapoliwa (1981), this study also tries to provide descriptions regarding Indonesian Phonology. The thesis aims at describing three specific aspects of Indonesian phonology, namely, its sound inventory, syllable structure, and phonological processes. Being descriptive qualitative in nature, the study describes that there are 22 consonants in Indonesian inventory system (i.e. /p, b, t, d, k, g, ʔ, s, h, l, r, ʃ, dʒ, n, m, ŋ, ɲ, w, j, f, z, ʃ/)—all of which are distinct phoneme—and 7 vowel sound, that is [a, i, ɪ, u, o, e, ə]—one of which, [ɪ] is allophones of /i/. In addition to sound inventory, the findings of the study also include some requirements for syllable-internal unit (i.e. onset, nucleus and coda) and how the requirements are fulfilled. Last, the study provides some discussions regarding phonological processes in Indonesian, which includes 1) nasal place assimilation; 2) geminate nasal deletion; 3) voiceless stop fusion; 4) velar nasal and voiceless alveolar fricative fusion; 5) voiceless obstruent fusion; 6) vowel nasalization 7) nasal deletion; 8) glide deletion; 9) schwa insertion; and 10) final obstruent devoicing. In addition to those phonological processes, the result of the study also exhibits some unsolved problems in the language, namely; 1) Liquid [r] deletion; and 2) Glottal stop phenomena.

**Key words:** phonology, distribution, syllable, phonological processes

## ABSTRAK

Meskipun fonologi Indonesia merupakan subjek yang menarik untuk diteliti, bidang ini jarang diteliti. Penelitian terakhir yang memuat penjelasan lengkap tentang fonologi Indonesia adalah penelitian oleh Lapoliwa, yang dilakukan pada tahun 1981. Mengikuti Lapoliwa (1981), penelitian kali ini juga mencoba menyajikan deskripsi mengenai fonologi Indonesia. Skripsi ini bertujuan untuk mendeskripsikan tiga aspek dari fonologi bahasa Indonesia, yaitu, perbendaharaan bunyi, struktur suku kata, dan proses fonologis dalam bahasa. Penelitian deskriptif kualitatif ini mendeskripsikan bahwa ada 22 bunyi konsonan di perbendaharaan bunyi bahasa Indonesia (i.e. /p, b, t, d, k, g, ʔ, s, h, l, r, ʃ, ʄ, n, m, ŋ, ɲ, w, j, f, z, ʃ/)—yang seluruhnya merupakan fonem—dan 7 bunyi vocal, yaitu [a, i, ɪ, u, o, e, ə]—satu darinya, [ɪ], merupakan alofon dari /i/. Selain perbendaharaan bunyi, penelitian juga memasukkan beberapa ketentuan untuk unit internal suku kata dalam bahasa Indonesia dan bagaimana ketentuan tersebut dipenuhi. Terakhir, penelitian ini juga menyajikan beberapa diskusi mengenai proses fonologis di bahasa Indonesia, yang mencakup: 1) nasal place assimilation; 2) geminate nasal deletion; 3) voiceless stop fusion; 4) velar nasal and voiceless alveolar fricative fusion; 5) voiceless obstruent fusion; 6) vowel nasalization 7) nasal deletion; 8) glide deletion; 9) schwa insertion; 10) final obstruent devoicing. Selain proses fonologis tersebut, penelitian ini juga menyajikan beberapa fenomena yang masih belum dapat dijelaskan, yaitu; 1) Liquid [r] deletion; dan 2) Glottal stop phenomena.

**Key words:** fonologi, distribusi, suku kata, proses fonologis

## INTRODUCTION

As a country in which exist a lot of different cultures, Indonesia also varies in terms of the language used by its people. According to Badan Bahasa (2017), Indonesia has over 707 local languages—vernaculars—that are used and spread among thousand islands in Indonesia. Apart from the vast varieties of vernaculars, Indonesia has another language, namely, its national language, Indonesian. As a national and official language, Indonesian is used as language of government, administration, mass media, and education.

Indonesian itself is a part of Austronesian language family; it originated from Malay, but had gone through stages of adaptation and modification (Blust, 2013: 40). As any other language, Indonesian also exhibits numerous language phenomena, whether it is within morphology, phonology, syntax and semantic field. All of these phenomena are very interesting to be studied. Nevertheless, there is one field which is rarely examined, that is, phonology.

As any other languages, Indonesian also has its own phonology, which comprises abstract rules and principles of sound distribution and pattern in the language (Akmajian, et.al., 1985: 99). This phonological knowledge is present in every native speaker of the language as part of linguistic competence of native speaker.

For the sake of practicality, phonological knowledge of native speaker of Indonesian needs to be explicitly stated. The study on Indonesian phonology is viewed as important since not only does it contribute to the study about sounds and sound patterns in Indonesian, it can also provide further explanation in Indonesian word-formation, specifically because morphology and phonology are sometimes related. In addition, it might also be useful as a guide to help non-native speaker of Indonesian to understand the language better.

Reflecting the importance of the discussion of Indonesian Phonology, some scholars have tried to examine the matter further. Some of the studies that discuss Indonesian phonology includes works by Lapoliwa (1981), Andi-Pallawa and Adam (2013), as well as a work by Batais and Wiltshire (2015). Among the three previous studies, the work by Lapoliwa (1981) is judged to be the most complete account of Indonesian phonology—compared to the other two works which only cover one aspect of Phonology—yet the work still includes several problematic statements.

Due to the importance stated above, the precise discussion of Indonesian phonology is necessary. Thus, further research in this field is necessary to confirm and supplement the findings of the previous studies in order to provide a complete and precise Indonesian phonology.

### **RESEARCH QUESTIONS**

Based on the reasoning above, the research questions to be answered are constructed:

1. What are vowel and consonant sounds in Indonesian sound inventory?
2. How is syllable structure in Indonesian organized?
3. What are the phonological processes and rules behind phonological phenomena in Indonesian?

### **RESEARCH DESIGN**

This study is a descriptive qualitative study method, which aimed to provide explanations regarding conditions and situations in a certain language phenomenon. The source of data was limited to native speakers of Indonesian who were Sasak living in Lombok Island, and thus the study was entirely focused on describing phonology of Indonesian spoken by Sasak speakers,

which might or might not be different from phonology of Indonesian spoken by natives from another region. The source of data are five informants which included the researcher and 4 other native speakers of Indonesian, as well as a contemporary novel.

The data for the study were collected by recording, observation and cross checking. The data were then analyzed through several steps, namely 1) Transcribing speech utterances collected in the form of phonetic transcription; 2) Identifying and determining the distribution of vowel and consonant sounds; 3) Examining possible syllable structure and constraints; 4) Identifying sets of data that exhibit phonological process and classifying it based on the process it shows; and 5) Explaining the processes.

## **FINDINGS AND DISCUSSION**

### **Findings**

From the observation, it is found that Indonesian makes use of 22 consonant sounds (i.e. [p, b, t, d, k, g, ʔ, s, z, f, ʃ, h, l, r, ʃ, dʒ, n, m, ŋ, ɲ, w, j]) and 7 vowel sounds, namely, [a, u, e, ə, i, ɪ] and [o]. As for syllables, Indonesian syllable varies from closed to open syllable. They commonly take the forms V, CV, VC, CVC, CCV, CCVC, CCCV or CCCVC: However, although the table above shows that Indonesian possesses the complete examples for syllables which take V, CV, VC, CVC, CCV, CCVC, CCCV or CCCVC form, the frequency of their occurrences are not equal. In Indonesian, syllables that take the form V, CV, VC, CVC occurs more frequently than those of CCV and CCVC. The CCCV and CCCVC, however, are found to be the least frequent in Indonesian, if compared to the other forms.

The last finding is regarding phonological processes in Indonesian. The initial observation shows that some affixes in Indonesian exhibits alternations; the prefix (men-) that is used to

mark active voice has 5 different phonetic forms, namely [mən], [məm], [məŋ], [məŋ] and [mə]. Another instance of alternation is seen in forms like [dunĩāwi] and [alamĩ], whereby a suffix is realized as two different phonetic representations, [wi] and [i]. Last, Indonesian also shows that there is a variation in the form of some stems when they are attached to a suffix as opposed to when they stand alone. This alternation is captured by forms like [dʒawap] ‘answer (V)’ and [dʒawaban] ‘answer (N)’.

### Discussion

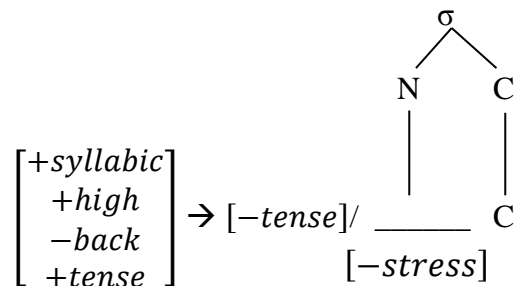
#### 1. Consonant and Vowel Sounds in Indonesian

Out of the 22 consonants in Indonesian, the status of glottal stop is the most arguable. It is often regarded as allophone of /k/. However, in order to examine its status, several aspects that are considered are phonetical similarity, distribution, as well as minimal pairs.

Based on phonetical similarity aspect, ʔ is found to be similar with /k/, which might suggest that they are indeed in allophonic relation. However, due to the overlapping distribution and minimal pairs such as [bak] and [baʔ], they are regarded as distinct phoneme.

As for vowels, out of seven vowels in Indonesian sound inventory, only one of them is allophone, namely, [ɪ]. [ɪ] is the phonetic variant of /i/ which only occurs in unstressed closed syllable. To derive [ɪ] from /i/ the following rule is needed:

#### (1) High front vowel shortening/ laxing





## 2. Indonesian Syllable

In the discussion regarding Indonesian syllable, the study tries to unearth the syllable-internal unit requirement. Hence, this includes onset, nucleus, and coda requirements:

- a. Onset requirement
  - i. Onset is optional
  - ii. Onset might be either simple or complex, including at most 3 consonants
  - iii. Intervocalic consonants is always syllabified as onset
- b. Nucleus requirements:
  - i. Nucleus should always be present
  - ii. Nucleus is composed of a simple vowels, not diphthong
  - iii. Nucleus might be a consonant, but only if the consonant is a nasal which is homorganic with the following consonant
- c. Coda requirements
  - i. The coda is optional
  - ii. Coda consists of maximally one consonants, which might not have the same place features as the following consonants

### 3. Phonological Processes

#### a. Nasal Process

##### i. Nasal Place Assimilation

In Indonesian, prefix (men-) is used to mark active voice. However, as the data shows, the prefix surfaces as five different phonetic forms when they are attached to a stem. These phonetic variants are [mən̩], [mən̩], [mən̩], [məm], and [mə].

From the observation on each phonetic variant's distribution, it was found that all different phonetic variants appear in mutually exclusive environment. The form [mən̩] occurs before alveolar consonants, [məm] before [b] and [p] which are labial consonant, [mən̩] before alveopalatal consonants [tʃ] and [dʒ], and [mən̩] before vowels and velar consonants.

Since the variant [mən̩] has the widest distribution, it is judged as the underlying. Having stated the UR, the study constructs the rule to derive phonetic variant [mən̩], [mən̩] and [məm]:

##### (2) Nasal Place Assimilation (simplified)

$$\left[ \begin{array}{l} +nasal \\ -anterior \\ -coronal \\ +back \end{array} \right] \rightarrow [\alpha place] / \text{—————} \left[ \begin{array}{l} +obstruent \\ \alpha place \end{array} \right]$$

##### ii. Geminate Nasal Deletion

As previously mentioned, prefix /məŋ/ surfaces as five different phonetic variants. One of them which is yet to be accounted is variant [mə]. This variant appears before a stem beginning with a nasal consonant. Thus, it seems that when a complete assimilation occurs after NPA rule is applied in forms which take prefix

/mən/ and a stem beginning with nasal deletion, one nasal from the geminates is deleted:

(3) Geminate Nasal Deletion

$$[anasal] \rightarrow \emptyset / \text{_____} [anasal]$$

iii. Fusion

The discussion surrounding prefix /mən/ and its phonetic variants hasn't been finished yet. When prefix /mən/ is attached to a stem beginning with a voiceless stop, the nasal /ŋ/ will fuse with the stop. Thus, the voiceless stop in stem-initial will disappear, leaving only a homorganic nasal. This process is governed by the following rule:

(4) Voiceless Stops Fusion (Revised)

$$\left[ \begin{array}{c} +obstruent \\ -voice \\ -continuant \\ -delayed\ release \\ \alpha place \end{array} \right] \rightarrow [\alpha place] / \left[ \begin{array}{c} +nasal \\ \alpha place \end{array} \right] + \text{_____}$$

In addition to when the prefix is attached to a stem beginning with a voiceless stop, fusion also occurs when the prefix is attached to a stem beginning with a voiceless alveolar fricative. When the prefix is attached to this kind of stem, the two sounds emerge as palatal nasal, a nasal which shares some phonetical features with both [ŋ] and [s]. This process is governed by the following rule:

(5) Velar Nasal and Voiceless Alveolar Fricative Fusion:

$$\left[ \begin{array}{c} +obstruent \\ +continuant \\ -voice \\ +anterior \\ +coronal \\ -back \end{array} \right] \rightarrow \left[ \begin{array}{c} +coronal \\ -back \end{array} \right] / \left[ \begin{array}{c} +nasal \\ -anterior \\ -coronal \\ +back \end{array} \right] + \text{_____}$$

Last, fusion also occurs when the informal version of the prefix /məŋ/, that is, prefix /ŋ/, is attached to a stem beginning with a voiceless obstruent. Thus, when this prefix co-occurs with /p, t, k/ and /dʒ/, the sound which is previously occupied initial position of the stem will disappear, leaving only a homorganic nasal:

(6) Voiceless Obstruent Fusion

$$\left[ \begin{array}{l} +obstruent \\ -voice \\ -continuant \\ \alpha place \end{array} \right] \rightarrow [\alpha place] / \# \left[ \begin{array}{l} +nasal \\ \alpha place \end{array} \right] \text{ —————}$$

Out of the three rules of fusion, only two, that is, voiceless stop fusion and voiceless obstruent fusion are applied after NPA. Moreover, since the trigger for the rule is different, the two rules are freely ordered. As for velar nasal and voiceless alveolar fricative fusion rule, it must be applied after NPA takes place because the rule lists velar nasal (the nasal that is listed as underlying in the prefix) as its trigger.

iv. Vowel Nasalization

Another instance of nasal process in Indonesian is vowel nasalization. The data shows that vowel is always nasalized if the vowel follows a nasal sound. In addition, the data also shows that several forms like [mãʔãf] and [nãʔãs] still undergo vowel nasalization regardless of the presence of glottal stop separating the vowel with nasal sound. Hence, the occurrence of the stop needs to be stated in the rule. However, since the presence of glottal stop is not obligatory—that is, the nasalization process could occur regardless its occurrence—the stop can be added to the rule in parenthesis ( ), hence suggesting the optionality of the occurrence of this sound.

(7) Vowel Nasalization

$$V \rightarrow [+nasal] / [+nasal] (?) \text{ —————}$$

As for how it is ordered in relation to the other phonological rules discussed so far, it is clear that Vowel Nasalization would have been applied after the other rules in order to prevent forms which have yet undergone fusion to remain oral.

v. Schwa Insertion

So far, we have seen 5 different phonetic realization of prefix [m̃ɔŋ], namely, [m̃ɔn], [m̃ɔŋ], [m̃ɔm], [m̃ɔŋ], and [m̃ɔ]. Another interesting problem emerges when the prefix is attached to a monosyllabic word. When this prefix is attached to a monosyllabic word, a schwa is inserted between the two morphemes. Since the schwa is not a part of the prefix and the word, it means that it is inserted through an application of an epenthesis rule. Based on the environment in which the schwa appears, the insertion rule is constructed as follows:

(8) Schwa Insertion I

$\emptyset \rightarrow [+reduced] / C+ \_\_\_\_ ++ CVC ++$

As for rule ordering, schwa insertion is always ordered before NPA in order to prevent NPA from assimilating with the following consonants, hence deriving alveolar nasal for /m̃ɔŋ+lap/ and /m̃ɔŋ+rem/. Then, schwa insertion is applied, generating the incorrect form \*[m̃ɔñɔlap] and \*[m̃ɔñɔrem].

b. Liquid and Glide Phenomena

i. Nasal Deletion

Another instance whereby prefix /m̃ɔŋ/ surfaces as [m̃ɔ] is when this prefix is attached to a stem beginning with liquid or glide sound, as shown by the forms [jakɪn]-[m̃ɔjakɪnɪ] and [laŋgar]-[m̃ɔlaŋgar]. Here, in order to delete nasal sound in the prefix, another deletion rule is needed:

(9) Nasal Deletion

$$[+nasal] \rightarrow \emptyset / \text{_____} + \left[ \begin{array}{l} -syllabic \\ +sonorant \\ +continuant \end{array} \right]$$

ii. Glide deletion

In Indonesian, adjectives can be derived from noun by attaching suffix *-wi/-i* to the noun. This process, however, only occurs to some borrowed words from Arabic and Sanskrit (Sneddon, 1996). From the data, it seems that the two variants occur in a mutually exclusive environment. [wi] appears after a stem ending in vowels, while [i] after a stem ending with consonants. Here, the variant /wi/ is judged to be the UR, while [i] is the predictable phonetic variant. In order to derive [i], a phonological rule that deletes labio-velar glide from the underlying /wi/ is proposed:

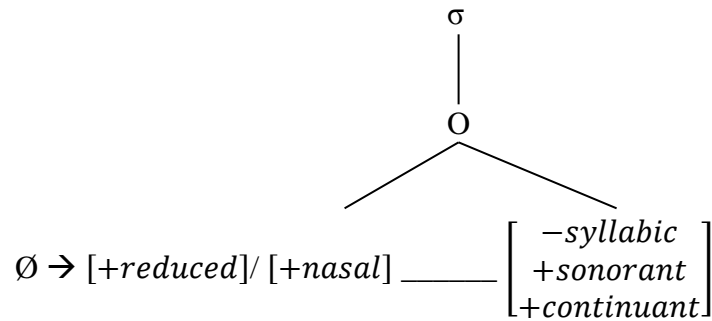
(10) Glides Deletion

$$\left[ \begin{array}{l} -syllabic \\ -consonantal \\ +back \end{array} \right] \rightarrow \emptyset / [+consonantal] \text{_____}$$

iii. Schwa Insertion II

Another case of schwa insertion seems to take place in order to break down nasal and liquid/glide sequence when a stem beginning with liquid/glide is attached to prefix /ŋ/. This occurs to forms like [ŋərəsa] which is derived from /ŋ+rasa/. To insert a schwa, another rule is needed:

(11) Schwa Insertion II



c. Voiced Obstruent Devoicing

Setting aside the discussion regarding glide and liquid phenomena, the study now turns to address devoicing phenomena. This phenomenon occurs to the forms [wadʒɪp], [adʒaɪp], and [akrap], which occur with [p] when they stand alone, but emerge with [b] when they are attached with the circumfix (i.e. [kəwadʒiban], [kədʒaiban] and [kəakraban]). Here, the study proposes a devoicing rule which will turn all voiced obstruent voiceless if they occur in final position.

(12) Voiced Obstruent Devoicing

$$\left[ \begin{array}{l} +obstruent \\ +voice \end{array} \right] \rightarrow [-voice] / \text{ \_\_\_\_\_\#}$$

d. Unsolved problem

In this part, the study tries to provide several problems whose discussion is still open for further debate and argument. The difficulties in solving the following phenomena might result from contradicting data, making it difficult to reach a conclusive discussion regarding the phenomena.

i. Liquid [r] deletion

In Indonesian, there are several prefixes which seem to undergo the same phonological process. The prefixes take the form Xər-, in which X stands for either [p], [t], or [b]. The prefix, which can be used to derive noun (i.e. [pər]), adjective (i.e. [tər]) or verb (i.e. [bər]) each has two phonetic variants; one which occurs with liquid [r]—[pər], [bər] and [tər]—and the other that occurs without liquid [r]: [pə], [bə], and [tə]:

The problem in solving this phenomenon lies in the triggering environment for the deletion. First, it is not possible to state a certain sounds as the trigger for the deletion. This is because, apart from [r] in stems beginning with [r], the distribution of Xər/ Xə seems to overlap; the two variants can both appear before [t], [a], and [p]. Moreover, syllable also cannot be listed as the trigger, because both Xər and Xə can emerge with stems beginning with either open or closed syllable. In addition, from the form [pərkotaʔan] and [pədəsaʔan], we could infer that the number of syllables that makes up the stem also doesn't have any influence on the deletion of [r]. Here, since the study fails to provide further explanation regarding the alternation, the discussion regarding [r] deletion therefore reaches an impasse.

ii. Glottal stop phenomena

The next unsolved problem comes from the forms which takes circumfix ke-...an. Consider the following data:

(13)

[baʔāʔ]	many	[kəbaʔāʔan]	too many
[dʒəleʔ]	ugly	[kədʒələkan]	ugliness
[duduʔ]	sit	[kədudukan]	position
[bapaʔ]	father	[kəbapaʔan]	fatherly
[māsuʔ]	enter	[kəmāsuʔan]	being entered (accidentally)



As seen from (13), some stems exhibit k~ʔ alternation. In explaining this phenomenon, two approaches will be adopted:

**Analysis 1: UR → /k/**

In the first analysis, forms with voiceless velar stop /k/ in the affixed form are considered as the UR of the stems. Hence, a phonological rule is needed to derive glottal sound from the underlying /k/:

(14) Velar Stop Glottalization

$$\left[ \begin{array}{l} -\text{continuant} \\ -\text{voice} \\ -\text{anterior} \\ -\text{coronal} \\ +\text{back} \end{array} \right] \rightarrow [-\text{back}] / \_\_\_\_\_\#$$

Derivation for some forms using this rule:

(15)

UR	/kə+ʧantik+an/	/ʧantik/	/bapaʔ/	/kə+bapaʔ+an/
HFVS	no	yes	no	no
VSG	no	yes	no	no
SR	[kəʧantikən]	[ʧantiʔ]	[bapaʔ]	[kəbapaʔən]

As seen from (15), the rule manages to derive the correct SR from the UR for each form. Having discussed the first analysis, let's now turn to the second analysis:

**Analysis 2: UR → /ʔ/**

The second analysis treats the forms in stem column as UR and forms in the affixed form as the predictable phonetic variant. In order to derive the variant [k], the following rule is needed:

(16) Glottal Stop Velarization

$$\left[ \begin{array}{l} -\text{continuant} \\ -\text{anterior} \\ -\text{coronal} \\ -\text{back} \end{array} \right] \rightarrow [+back] / \text{_____} + \left[ \begin{array}{l} +\text{syllabic} \\ +\text{low} \\ +\text{back} \end{array} \right] \left[ \begin{array}{l} +\text{nasal} \\ +\text{anterior} \\ +\text{coronal} \\ -\text{back} \end{array} \right]$$

Now, let's see how the rule is applied in a derivation:

(17)

<b>UR</b>	/kə+ʈantiʔ+an/	/ʈantiʔ/	/bapaʔ/	/kə+bapaʔ+an/
<b>HFVS</b>	no	yes	no	no
<b>GSV</b>	yes	no	no	yes
<b>SR</b>	[kəʈantikan]	[ʈantiʔ]	[bapaʔ]	*[kəbapakan]
<b>Attested Form</b>	[kəʈantikan]	[ʈantiʔ]	[bapaʔ]	[kəbapaʔan]

Unlike the previous rule, Glottal Stop Velarization fails to derive the correct SR for all of the forms. Here, the rule fails to predict the correct SR for forms which doesn't undergo alternation, such as [kəbapaʔan] and [kəmāsuʔan].

Since the first analysis manages to derive the correct SR for all forms while the second analysis fails to do so, thus it seems that based on predictability argument, the first analysis is the superior one, since it manages to predict the correct SR. Nevertheless, this is not necessarily true.

In the first analysis, the rule is applied whenever a voiceless velar stop is found in final position. By the application of this rule, each /k/ will be turned into glottal stop in final position. The implication of this rule is that no word in Indonesian can end in voiceless velar stop. Nevertheless, this is certainly not true, since Indonesian possesses a lot of words which ends in voiceless velar stop, such as [ŋākak], [listrik] and [oðʒek]. Here, since this rule fails to make the correct prediction regarding Indonesian words, the analysis 1 is therefore judged to have a major flaw. Due to this reason, it is rather difficult to actually determine which analysis is the superior one.

## CONCLUSION

So far, the discussion supplied in the current study is evolved around answering the research questions. Hence, the study has tried to address issues regarding vowel and consonant sounds in Indonesian, as well as syllable structure and phonological processes in the language. Having addressed both distributional issues as well as phonological process in Indonesian, it is therefore interesting to see how the two phenomena seem to be related to one another. One instance of this is the discussion regarding the consonants which can co-occur with nasal. In the discussion about Indonesian nasal distribution, the study figures that consonants which can appear together with nasal mostly share the same place of articulation as the nasal they co-occur with. The only exception for the distribution is involving alveolar fricative [s] and liquid [l, r]. It turns out that [s] is not only limited to co-occurring with homorganic nasal; [s] can co-occur with almost all nasals. This distribution is somewhat portrayed in some phonological processes in Indonesian. Just like how nasal is always homorganic with the following consonants in words, the UR for prefix /məŋ/ is always assimilated to become homorganic nasals.

Another instance of the distribution of sounds being reflected in phonological processes is nasal deletion process. In nasal deletion, the nasal sound from the prefix /məŋ/ is always deleted when this prefix is attached to a stem beginning with liquid. This is in line with the fact that liquid alveolar never occurs contiguous with alveolar nasal [n]. These two instances show that the sound distribution has some sort of influence towards what processes occurs in Indonesian. Thus, the study of the sound distributions helps to explain why some processes occurs to certain sounds.

Finally, the researcher would like to state that the current study regarding Indonesian phonology by no means is the most correct one, and hence is open for further researches which might dispute or support the analyses that have been presented here. In addition to that, since the study still fails to account for some problematic phonological phenomena, the researcher also encourages further researcher in the field to try solving the problems which is currently unsolved for a better understanding towards Indonesian Phonology.

## REFERENCES

- Akmajian, A., Demers, R. A., and Harnish, R. M. 1984. *Linguistics, An Introduction to Language and Communication*, 2<sup>nd</sup> Edition. Cambridge: The MIT Press
- Andi-Pallawa, B. and Alam, A. K. A. 2013. Comparative Analysis between English and Indonesia Phonological Systems. *International Journal of English Education*, **1(3)**, pp. 103-129
- Bataish, S., and Wiltshire, C. 2015. *Constraints in Indonesian Adaptation: OT Analysis*. Paper Presented at LSA Annual Meeting 2015
- Blust, R. A. 2013. *The Austronesian Languages*. Australia: Research School of Pacific and Asian Studies
- Brown, J.D. and Rodgers, T.S. 2002. *Doing Second Language Research*. Oxford: Oxford University Press
- Budiwiyanto, A. *Pendokumentasian Bahasa dalam Upaya Revitalisasi Bahasa Daerah yang Terancam Punah di Indonesia*. Accessed on May 25<sup>th</sup> 2017 from [badanbahasa.kemdikbud.go.id](http://badanbahasa.kemdikbud.go.id)
- Carr, P. 1993. *Phonology*. London: The MacMillan Press
- . 2008. *A Glossary of Phonology*. Edinburgh: Edinburgh University Press
- Crystal, D. 2008. *A Dictionary of Linguistics and Phonetics*, 6<sup>th</sup> Edition. Oxford: Blackwell
- Davenport, M. & Hannahs, S.J. 2005. *Introducing Phonetics and Phonology*. Great Britain: Hodder Education
- Garoma, E. T. 2012. Phonology of Yem: Phonological Processes. *Journal of Language and Culture*, 3(6), pp. 117-125
- Kenstowicz, M. & Kisseberth, C. 1979. *Generative Phonology: Descriptive and Theory*. London: Academic Press
- Kleber, F. 2011. *Incomplete Neutralization and Maintenance of Phonological Contrast in Varieties of Standard German*. Unpublished Dissertation. Ludwig-Maximilian University
- Knight-McKenna, M. 2008. Syllable Types: A Strategy for Reading Multisyllabic Words. *TEACHING Exceptional Children*, 40(3), pp. 18-24.
- Lahkar, N. 2015. Linguistic Data Collection: A Field Observation. *Language in India*, **15(10)**, pp. 216-223
- Lambert, V. A. & Lambert, C. E. 2012. Qualitative Descriptive Research: An Acceptable Design. *Pacific Rim International Journal of Nursing Research*, **16(4)**

- Lapoliwa, H. 1981. *A Generative Approach to the Phonology of Bahasa Indonesia*. Pacific Linguistics, Series D-No34
- McMahon, A. 2002. *An Introduction to English Phonology*. Edinburgh: Edinburgh University Press
- O'Grady, W. and Dobrovolsky, M. 1989. *Contemporary Linguistics*. USA: St. Martin's Press
- Odden, D. 2005. *Introducing Phonology*. New York: Cambridge University Press
- Peng, L. 2013. *Analyzing Sound Patterns*. New York: Cambridge University Press
- Restifiza, S. A. *Phonological Processes of Indonesian Borrowing Words Used by Minangkabaunese in Bukittinggi, West Sumatra*. Unpublished S.Pd Thesis. State University of Padang
- Salka, J. M. 2014. *Phonological Processes Found in Javanese Malang Dialect and Its Boso Walikan*. Unpublished S.Pd Thesis. Mataram University
- Sneddon, J. N. 1996. *Indonesian: A Comprehensive Grammar*. London: Routledge
- Steriade, D. 1982. *Greek Prosodies and the Nature of Syllabification*. Unpublished Doctoral Dissertation. Massachusetts Institute of Technology
- Sugiyono. 2013. *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Bandung: Alfabeta
- Szigetvari, P. 2013. Syllable Structure. *English Phonological Analysis*. Budapest: Department of English Linguistics Eotvos Lorand University