# Phonological Process in Passive Verb Markers of Bahasa Bakumpai

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#### ABSTRACT

This research is about the phonological process which occurs in the forming of passive verbs in bahasa Bakumpai. The theory applied in this research is generative phonology. The object of this research is bahasa Bakumpai, one of the languages used by people in South and Central Borneo who live by Barito River. The data collection was conducted by searching active and passive verbs in bahasa Bakumpai dictionary and verified by a native speaker. Result of the research shows that the prefix which becomes the passive marker is /i/ and when it is attached to stems begin with consonants, there are insertions of consonants such as the [n], [m], [ng], and [ny] which are categorized as allophones since they occur in complementary distribution in the environments.

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### 1. Introduction

Every society in a certain culture has their own way to communicate their feeling, emotion, and share information; therefore they may have interaction in their circle in the form of a language [1]. As a social being, a human cannot be separated from this great thing, language, for sure. Every language has its own characteristics that differentiate it from other languages, and it makes the users able to interact well to those who are in the same culture and language [2]. In this research, the writer would like to talk about language related to phonological events and process that happen in a tribe called Dayak Bakumpai.

Dayak Bakumpai is one of the tribes exists in Borneo whose religion is Islam. The people of this tribe live by the Barito River which lies on South Borneo and Central Borneo, from Marabahan (as the center of the tribe) which is located in South Borneo until Puruk Cahu which is located in Central Borneo [3]. The language used by the people of this tribe is Bahasa Bakumpai [4], and like other languages, Bahasa Bakumpai also has its special style in use. In Bahasa Bakumpai, some words will have new meanings when they are adjoined with morphemes or affixes. As stated above, researcher focus on the phonological part of this language in the forming of passive verbs in this language since to form passive verbs the users will attach a prefix (i-) to the stem of the verbs. When the stems are attached by prefix, there will be some phonological processes which occur as the effect of the segments which get close because of the attachment. This phenomenon is unique that it makes researcher is interested in finding more about the phonological processes occur, and what may affect the sound of the segment, therefore, the researcher can figure out the basic rules applied in the processes. The goal of the researcher is matched with a theory by Chomsky; Transformational Generative focuses on generative phonology, which tries to find the general rule of a certain language. It makes the researcher decided to write this paper about phonological processes occur in bahasa Bakumpai.

The language analyzed in this paper is Bakumpai which has its own system which differs it from other languages. One of the differences is from phonological view since the phonetic alphabets in this language is not as many as in English or bahasa Indonesia. The phonetic alphabet of Bakumpai is as in the table below.

	Bil	abial	Labio	dental	Al	veolar	Retroflex	Palatal	V	elar	Uvular	Glottal
Plosive	p	b			t	d		c	k	g	q	?
Nasal		m				n	η			ŋ	- ME	
Trill						r						
Fricative			f	v	S	d3						h
Approximant		w						j				

Lateral Approximant

1

Table 1 Consonants of Bahasa Bakumpai

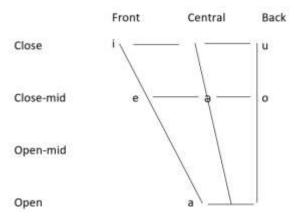


Figure 1 Vowels of Bahasa Bakumpai

To analyze this phonological of bahasa Bakumpai, Generative phonology, which is a component of generative grammar that assigns the correct phonetic representations to utterances in such a way as to reflect a native speaker's internalized grammar is chosen [5]. Generative phonology enables the user to see in the most detail of phonological changes and characteristics of sound that makes this theory becomes one of the most reliable theory to analyze and describe many languages all over the world.

# **Distinctive Features**

The phonetic properties which are the basis of phonological systems are general and somewhat abstract, such as voicing or rounding and are largely the categories which we have informally been using already: they are not the same, as we will see. The hypothesis of distinctive feature theory is that there is a small set, around two dozen, of phonetically based properties which phonological analysis uses. These properties, the distinctive features, not only define the possible phonemes of human languages but also define phonological rules [6].

### **Phonological Process**

In producing a meaningful sound, people are not separated from collaborating sounds or morphemes. When morphemes are attached to the root of the words, the segments which are closely posted in this language then affect other segments and produce what we call phonological process. The phonological process itself has some variations such as assimilation, syllable structuration, strengthening and weakening of sounds, and neutralization. All of those phonological processes occur because of the combination of morphemes which affect the sounds of the stem or roots. [5].

Assimilation is a phonological process that occurs when a segment gets characteristics from the closed segment. [7]. This process may occur in various segments which are close to each other. It may be a consonant gets characteristics from consonants, consonants from vocals, vocals from consonants, or vocals from vocals. Syllables structuration process affects the relative distribution between vocal and consonant in a word. The vocal and consonant might be assimilated or inserted. Every process in this structuration can cause alternation in the real syllable. This process related to how a language tends to form a syllable of words when an affix is attached to the stem of those words. When a sound classified as the strong sound is closely posed to a weak sound, there is a tendency that the strong one will affect the weak such as not pronounced clearly or even not to be pronounced at all. Neutralization is a process where a segment is omitted in a certain situation or environments. This process usually occurs when there are two contrastive segments posed closely in a word that results in the omission one of the segments. [5].

#### 2. Methods

Researcher applied descriptive qualitative method in this research [8] [9]. the researcher collected the data by searching active and passive verbs in bahasa Bakumpai dictionary and verified by a native speaker. From a lot of words in the list, researched chose 100 words which represented the environments where the phonological process happened as samples. The samples were then classified based on the prefixes attached in front of the stems until they were in order. After putting those verbs in groups, the researcher analyzed the variations of the phoneme and

allophones. Then, the researcher analyzed the transformation of the phoneme to the allophone and found the rules based on the environments with transformational generative theory focuses on generative phonology since this theory is the most appropriate one to apply in this research. After that, to make the data more reliable and in detail, the researcher applied distinctive features in the analysis description of the rules found. Finally, from the description researcher got a conclusion about why and how the phoneme transformed into the allophones.

# 3. Results and Discussion

From the data gathered by the researcher, the samples of verbs are taken and can be seen in the list of active verbs in bahasa Bakumpai, the passive verbs and the prefixes of the passive marker, below.

No	Infinitive	Passive	Prefix	meaning
1	/andak/	[iandak]	[i-]	Be put
2	/ekei/	[iekei]	[i-]	Be dried
3	/elai/	[ielai]	[i-]	Be occupied
4	/hiniŋ/	[ihiniŋ]	[i-]	Be listened (to)
5	/ihir/	[ihir]	[i-]	Be brought
6	/lepahan/	[ilepahan]	[i-]	Be finished
7	/rium/	[irium]	[i-]	Be smiled by
8	/umba/	[iumba]	[i-]	Be followed
9	/warah/	[iwarah]	[i-]	Be mocked
10	/arak/	[iarak]	[i-]	Be shown in public
1	/anter/	[ianter]	[i-]	Be delivered
12	/enter/	[ienter]	[i-]	Be lied on
13	/lapasan/	[ilapasan]	[i-]	Be let
14	/rikih/	[irikih]	[i-]	Be ripped
15	/riwas/	[iriwas]	[i-]	Be scattered
16	/ulas/	[iulas]	[i-]	Be covered
17	/unting/	[iunting]	[i-]	Be spotted
18	/ukut/	[iukut]	[i-]	Be taken
19	/barak/	[imbarak]	[im-]	Be Expelled
20	/pakasak/	[impakasak]	[im-]	Be cooked
21	/bane/	[imbane]	[im-]	Be married (male)
22	/butak/	[imbutak]	[im-]	Be resented
23	/birang/	[imbirang]	[im-]	Be stretched
24	/bawah/	[imbawah]	[im-]	Be broken
25	/buntus/	[imbuntus]	[im-]	Be concaved
26	/patei/	[impatei]	[im-]	Be killed
27	/pandui/	[impandui]	[im-]	Be bathed
28	/pihupan/	[impihupan]	[im-]	Be given water
29	/pikeh/	[impikeh]	[im-]	Be frightened
30	/pisik/	[impisik]	[im-]	Be waken up
31	/pujur/	[impujur]	[im-]	Be straightened
32	/parake/	[imparake]	[im-]	Be fastened
33	/catuk/	[incatuk]	[in-]	Be hit
34	/duruh/	[induruh]	[in-]	Be fallen
35	/dʒakat/	[indʒakat]	[in-]	Be ridden

36	/turih/	[inurih]	[in-]	Be incised
37	/dinu/	[indinu]	[in-]	Be picked
38	/dai/	[indai]	[in-]	Be climbed
39	/dabuk/	[indabuk]	[in-]	Be hit
40	/dekeŋ/	[indekeŋ]	[in-]	Be backed up
41	/dawa/	[indawa]	[in-]	Be accused
42	/danum/	[indanum]	[in-]	Be watered
43	/darasan/	[indarasan]	[in-]	Be strengthened
44	/dimpah/	[indimpah]	[in-]	Be crossed
45	/dirik/	[indirik]	[in-]	Be cut (bushes)
46	/duhup/	[induhup]	[in-]	Be helped
47	/dusur/	[indusur]	[in-]	Be cornered
48	/dadah/	[indadah]	[in-]	Be cleaned (by hitting)
49	/dʒudʒu/	[indʒudʒu]	[in-]	Be pushed
50	/dʒatu/	[indʒatu]	[in-]	Be pinned down
51	/dʒelap/	[indʒelap]	[in-]	Be licked
52	/dʒidʒit/	[indʒidʒit]	[in-]	Be scolded
53	/dʒarat/	[indʒarat]		Be tied
55 54	/dʒaga/	[indʒaga]	[in-]	
55	/dʒudʒur/	[indʒudʒur]	[in-]	Be kept
56	/dʒiʒkaŋ/	[indʒidʒur]	[in-] [in-]	Be proposed Be kicked
57	/dʒumput/	[indʒumput]		
	/dʒadian/	[indʒadian]	[in-]	Be taken Be done
58	/karak/	[iŋarak]	[in-]	
59		[iŋgajau]	[iŋ-]	Be taken off
60	/gajau/	[iŋgajau] [iŋarik]	[iŋ-]	Be scratched
61	/karik/	[iŋadu]	[iŋ-]	Be swapped
62	/kadu/	[iŋinan]	[iŋ-]	Be reported
63	/kinan/	[iŋajal]	[iŋ-] [iŋ-]	Be eaten
64 65	/kajal/	[iŋeruh]	[iŋ-]	Be forced
65	/keruh/	[inurah]	[iŋ-]	Be soiled
66 67	/kurah/	[iŋejau]	[iŋ-]	Be mixed Be avoided
68	/kejau/	[ingagap]	[iŋ-]	Be touched repeatedly
69	/gagap/ /gilau/	[iŋgilau]	[iŋ-]	Be searched
70	/galung/	[ingalung]	[iŋ-]	Be tied (hair)
70	/gampir/	[ingampir]	[iŋ-]	Be accompanied
72	/gepak/	[ingepak]	[iŋ-]	Be expelled
73	/gasak/	[ingasak]	[iŋ-]	Be forced to hurry
7 <i>3</i>	/gatuk/	[ingatuk]	[iŋ-]	Be touched
75	/gisang/	[ingisang]	[iŋ-]	Be scrubbed
76	/gite/	[ingite]	[iŋ-]	Be seen
70 77	/saŋa/	[inana]	[iη-]	Be fried
78	/sala/	[inala]	[in-]	Be blamed
78 79	/saluh/	[inaluh]	[in-]	Be changed
80	/sama/	[inama]	[iη-]	Be compared
81	/santah/	[inantah]	[iη-]	Be lied on
01	/ Sailtail/	[11]amanj	[11[-]	De tieu on

82	/santuk/	[iŋantuk]	[iŋ-]	Be touched (sth)
83	/sapuh/	[inapuh]	[in-]	Be covered
84	/sarehan/	[inarehan]	[in-]	Be made sure
85	/sasah/	[inasah]	[iŋ-]	Be chased
86	/seha/	[ineha]	[iŋ-]	Be burnt
87	/sepak/	[inepak]	[iŋ-]	Be kicked
88	/seut/	[ineut]	[iŋ-]	Be said
89	/siŋkap/	[injŋkap]	[iŋ-]	Be caught
90	/siŋgah/	[injngah]	[in-]	Be stopped by
91	/sika/	[injika]	[in-]	Be wiped
92	/sipet/	[inipet]	[in-]	Be targeted
93	/simpun/	[inimpun]	[in-]	Be tidied up
94	/sintar/	[inintar]	[in-]	Be brightened
95	/sium/	[injum]	[in-]	Be kissed
96	/suaŋ/	[inuan]	[in-]	Be filled
97	/suar/	[inuar]	[in-]	Be brightened
98	/surah/	[inurah]	[in-]	Be argued
99	/sulum/	[inulum]	[in-]	Be put (in mouth)
100	/surup/	[inurup]	[iŋ-]	Be drunk

Table 2 list of active verbs, the passive verbs and the prefixes of the passive marker

Based on the data above, the researcher finds that to form a passive verb, bahasa Bakumpai users use prefix /i-/ that is attached to the stems. From the data gathered, there are two phonological processes occurs in the process to change the active into passive: syllable structuration and assimilation.

# 3.1. Syllable Structuration

According to the data, when a Bakumpai speaker wants to make a passive verb he attaches prefix /-i/ to the stems, there are two forms that occur:

- a. When the prefix is attached to stem with begins which begins with vowel, semivowel and liquid sounds like in [iandak] from /i-andak/, [iekei] from /i-ekei/, [ihini ] from /i-hini /, [ihir] from /i-hir/, [ilepahan] from /i-lepahan/, [irium] from /i-rium/, and [iwarah] from /i-warah/, sound /i/ will be directly adjoined to the stem.
- b. When the prefix /i-/ is attached to stem which begins with a consonant sound, there will be the insertion of other sounds between the prefix and the first sound of the stem. In this case, the inserted sounds are nasals such as [n], [m], [n], and [n] as can be seen in [imbarak], [incatuk], [i□arak], and [i□a□a]. From those examples, the researcher can conclude that when the prefix /i-/ is attached to a stem begins with consonant sounds; there is a rule that one of the four nasal sounds above must be inserted between the prefix and the first sound of the stem which begins with a consonant. The rule to choose the nasal to be inserted will be explained in the assimilation section below.

# 3.2. Assimilation

From the finding in syllable, structuration researcher concludes that there are a phoneme and four different allophones. The allophones are [m], [n], [n], and [n]. After these allophones are classified based on the environments that researcher finds that the allophone with the biggest distribution is [n]. Therefore, researcher concluded that /n/ is the phonemes of allophones [m], [n], [n], and [n].

The distributions can be seen as below:

- a. [n] appears before [d], [dʒ] and [t],
- b. [m] appears before [b] and [p],
- c. [ŋ] appears before [k] and [g],
- d. [η] appears before [s].

From the environment's classification, the researcher can formulate three rules for the assimilation processes in this language using distinctive features which enables us to write a complete description of the phonological processes in this language.

The rules are as seen below:

# a. Rule 1

In this first rule there is one assimilation process where the phoneme /n/ will transform into [m] when it meets consonants [b] and [p]. The example of this assimilation process is as below:

/barak/	[imbarak]	[im-]	Be Expelled
/pakasak/	[impakasak]	[im-]	Be cooked
/bane/	[imbane]	[im-]	Be married (male)
/butak/	[imbutak]	[im-]	Be resented
/birang/	[imbirang]	[im-]	Be stretched
/bawah/	[imbawah]	[im-]	Be broken
/buntus/	[imbuntus]	[im-]	Be concaved
/patei/	[impatei]	[im-]	Be killed
/pandui/	[impandui]	[im-]	Be bathed
/pihupan/	[impihupan]	[im-]	Be given water
/pikeh/	[impikeh]	[im-]	Be frightened
/pisik/	[impisik]	[im-]	Be waken up
/pujur/	[impujur]	[im-]	Be straightened
/parake/	[imparake]	[im-]	Be fastened

Table 3 Rule 1

The rule for this assimilation is as below:

# b. Rule 2

In the second rule there are two assimilation processes. The first assimilation process is that where the phoneme /n/ will transform into [ when it meets consonants [g] and [k]. The second assimilation process is that when [ appears right before [k], sound [k] will be omitted because of the nasal sound effect as seen below:

/karak/	[iŋarak]	[iŋ-]	Be taken off	
/gajau/	[iŋgajau]	[iŋ-]	Be scratched	

/karik/	[iŋarik]	[iŋ-]	Be swapped
/kadu/	[iŋadu]	[iŋ-]	Be reported
/kinan/	[iŋinan]	[iŋ-]	Be eaten
/kajal/	[iŋajal]	[iŋ-]	Be forced
/keruh/	[iŋeruh]	[iŋ-]	Be soiled
/kurah/	[iŋurah]	[iŋ-]	Be mixed
/kejau/	[iŋejau]	[iŋ-]	Be avoided
/gagap/	[iŋgagap]	[iŋ-]	Be touched repeatedly
/gilau/	[iŋgilau]	[iŋ-]	Be searched
/galung/	[iŋgalung]	[iŋ-]	Be tied (hair)
/gampir/	[iŋgampir]	[iŋ-]	Be accompanied
/gepak/	[iŋgepak]	[iŋ-]	Be expelled
/gasak/	[iŋgasak]	[iŋ-]	Be forced to hurry
/gatuk/	[iŋgatuk]	[iŋ-]	Be touched
/gisang/	[ingisang]	[iŋ-]	Be scrubbed
/gite/	[ingite]	[iŋ-]	Be seen

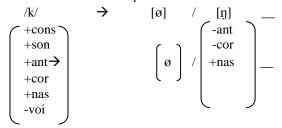
Table 4 Rule 2

The rule of these assimilation processes are as below:

First assimilation process:

$$\begin{pmatrix} -\text{Ant} \\ +\text{cor} \\ +\text{nas} \end{pmatrix} \rightarrow \begin{pmatrix} [\eta] \\ -\text{ant} \\ -\text{cor} \\ +\text{nas} \end{pmatrix} / \# \underline{ \begin{bmatrix} g,k \end{bmatrix} } \begin{pmatrix} +\text{cons} \\ -\text{son} \\ -\text{ant} \\ -\text{cor} \\ -\text{cont} \end{pmatrix}$$

Second assimilation process:



# c. Rule 3

As in the second rule, in the third rule there are also two assimilation processes. The first assimilation process is that where the phoneme /n/ will transform into  $[\eta]$  when it meets consonant [s]. The second assimilation process is that when  $[\eta]$  appears right before [s], sound [s] will be omitted because of the nasal sound effect like in example below:

/saa/	[ina-a]	[iŋ-]	Be fried	
/sala/	[inala]	[in-]	Be blamed	
/saluh/	[inaluh]	[in-]	Be changed	
/sama/	[inama]	[in-]	Be compared	
/santah/	[inantah]	[in-]	Be lied on	
/santuk/	[inantuk]	[in-]	Be touched (sth)	
/sapuh/	[inapuh]	[in-]	Be covered	
/sarehan/	[inarehan]	[in-]	Be made sure	
/sasah/	[inasah]	[in-]	Be chased	
/seha/	[ineha]	[in-]	Be burnt	

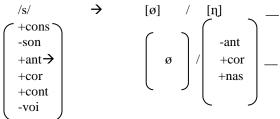
/sepak/	[inepak]	[in-]	Be kicked
/seut/	[ineut]	[iŋ-]	Be said
/siŋkap/	[injinkap]	[iŋ-]	Be caught
/siŋgah/	[injingah]	[iŋ-]	Be stopped by
/sika/	[inika]	[iŋ-]	Be wiped
/sipet/	[inipet]	[iŋ-]	Be targeted
/simpun/	[inimpun]	[iŋ-]	Be tidied up
/sintar/	[inintar]	[iŋ-]	Be brightened
/sium/	[injum]	[iŋ-]	Be kissed
/suaŋ/	[inuan]	[iŋ-]	Be filled
/suar/	[inuar]	[iŋ-]	Be brightened
/surah/	[inurah]	[iŋ-]	Be argued
/sulum/	[inulum]	[in-]	Be put (in mouth)
/surup/	[inurup]	[iŋ-]	Be drunk

Table 5 Rule 3

The rule of these assimilation processes are as below:

First assimilation process:

Second assimilation process:



# 5. Conclusions

From the data analysis conducted on a passive process in bahasa Bakumpai, the researcher can make a conclusion as below:

- a. To form a passive verb, Bakumpai speaker attaches sound /i/ to the active verbs.
- b. When sound /i/ is attached, there are some phonological processes happen. Since the paper is written to describe the rules applied based on generalization from data gathered, the most appropriate theory to apply is a generative transformational one.
- c. When the prefix is attached to stem with begins which begins with a vowel, semivowel and liquid sounds, sound /i/ will be directly adjoined with the stems.
- d. When the prefix i-i-i is attached to stem which begins with a consonant sound, there will be the insertion of nasal sounds such as [n], [n], and [n] between the prefix and the first sound of the stem.
- e. From the finding in syllable, structuration researcher concludes that there are a phoneme and four different allophones. Based on the analysis, the phoneme is /n/ and the allophones are [n], [n], and [n].

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