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Nasal Verbalization of the Kanayatn Dayak Language

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Abstract

This research aims to study the feature of nasals in the Kanayatn Dayak language, spoken in West Kalimantan, Indonesia, and whether they are replacive or additive to particular initial phonemes of the root. The data were collected by recording and interviewing five informants of 45-55 years old native speakers of Kanayatn Dayak. Through the descriptive linguistics approach to describe the linguistic features of the nasals, this study revealed that the feature could be both replacive and additive, depending on the initial phoneme of the root word the nasals enter. These replacive and additive nasal verbalization processes function as class-maintaining and class-changing based on the root class to the nasals attached. As a replacive, the nasal verbalization process replaces the first phoneme of the root with nasals /m-/, /n-/, /ŋ-/, and nasal /p-/. As additive verbalization, it is added to first phoneme of the root by employing allomorph /ma-/ and alternant /m-/, allomorph /am-/, allomorph /an-/ and alternant /n-/, and nasal /ŋ-/ and allomorph /ŋa-/. The replacive nasal verbalization makes the first phoneme of root covert. It is replaced with the replacive nasals. Then, the additive verbalization process maintains the first phoneme of the root staying overt. As a result, these additive nasals also create double homorganic-nasal oral consonants at the first phoneme of the verbs. The verbalization process involving additive allomorph only maintains the first phoneme of the root staying overt. In complex word formation, nasal verbalization creates active transitive and intransitive verbs.

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1. INTRODUCTION

Dayak is one of the ethnic groups in Kalimantan, Indonesia, while the Kanayatn is the subgroup of the Dayak ethnic. In West Kalimantan, Indonesia, the Kanayatn Dayak people, and language are spoken in 4 districts of 12 districts and two municipalities, namely Landak, Bengkayang, Mempawah, and Kubu Raya. Although the year of the source is not provided, it is informed that 280,000 speakers speak the language in West Kalimantan province (Ethnologue, 2022). While numerous people speak the language but its written system, morphologically or syntactically, is, in fact, not easy to find, whether in print or online. This might have happened because the people, mainly the Kalimantan Kanayatn Dayak as the language speakers, are not aware of the linguistic features of the language that convey different meanings. The unawareness affects the lack of studies and publications on this language. Therefore, this research is essential and helpful in contributing to the Kanayatn Dayak language system, especially on spoken word formation, a subbranch of morphology, as the focus of this study.

Currently, Kanayatn Dayak has not been identified as Bahasa Dayak Ahe anymore because the word Ahe roughly refers to or is translated as *Apa* 'what'. The language is gradually and academically recognized as Bahasa Dayak Kanayatn (Kanayatn Dayak language). The language and the people are sometimes called *Kandayan* or *Kanayatn*. Since the people speaking this language call themselves *Kanayatn*, the terminology used for this study purpose is *Kanayatn*. The meaning of 'Kanayatn' varies, but epistemologically, it signifies people who reside by the rugged land or upper stream land (Lansau et al., 1981). The word or terminology *Kandayan* is of *Ka* refers to preposition 'to' or the phrasal verb 'go to,' *Daya*, means uphill, upper stream, forest, and an *N* in word *Dayan* is a suffix that signifies people or citizen, thus making it *Kadayan*. The nasal phoneme /n/ in *Kan* is a dialect or alternant produced by non-speakers in naming these people and their language. Moreover, the suffixation of /-n/ in the word *Dayan* may be the influence of the arrival of European missionaries to Kalimantan or Borneo in the late 1800s. In brief, the *Kadayan* undergoes the changes becoming *Kandayan*, then *Kanayatn*, as the people of this indigenous call and identify themselves.

As many writers and linguists have classified it, the languages in Kalimantan or Borneo are the family member of the Austronesian language group (Asmah, 2013). So, the Kanayatn Dayak language is then one of the members of this language group. This language is unique for its double or triple consonant of a word's last syllable sound or form. The instance is found in the phonological sound /mulakŋ/ or in the orthographical form /mulakng/ 'to return'. The speakers of the Kanayatn Dayak are mostly farmers surviving their lives from tapping rubber and traditional shifting cultivation. A few are from oil palm, cocoa, and pepper plantation in Kalimantan. The position of the Kanayatn Dayak people and language is situated on the map of West Kalimantan Province, as shown in Figure.



Figure 1. Map of West Kalimantan Province, Indonesia (source: [https://wikipedia/commons/4/49/Prov. Kalimantan Barat.jpg](https://wikipedia/commons/4/49/Prov._Kalimantan_Barat.jpg))

This paper aims to describe the Kanayatn Dayak language morphology, involving word formation and morphological processes. The formation consists of free and bound morphemes, and the process is affixation. The free morpheme is a root with its lexical category, and the bound morpheme is a prefix. The root is verb, noun, adjective, and adverb, while the prefix is nasalization with its realizations. The realizations are consonant nasal phonemes. It is nasal verbalization involving nasal phonemes as a constituent of verb and adjective structure. The nasals verbalize verbs, nouns, adjectives, and adverbs by replacing or adding an initial phoneme to the root. Verbalization is a word formation process whereby verbs are derived from bases belonging to other syntactic categories (Batiukova, 2021). So, this study discusses the nasal phoneme that functions as an affix, that is, a prefix. In terms of morphology, this nasal phoneme is a bound morpheme.

This study contributes to the detailed description of the Kanayatn Dayak language morphology. The details cover the nasal phoneme, that is, prefix, the function and meaning, and the initial phoneme of the root the nasal phoneme influences. So, this study may be a postulate for researchers to rewrite or refine the description of the language, especially the morphology. The question raised for this study is: What is the feature of nasals of the Kanayatn Dayak language in nasal verbalization? The importance of addressing this question is to describe the features of the Kanayatn Dayak nasals, whether they are replacive or additive to particular initial phonemes of the root in the verbal formation process of the language. The results can be an essential exemplification of the nasal verbalization of this language.

2. LITERATURE REVIEW

Since language is a social phenomenon (Nakonechna, 2021; Yurchenko, 2021), speakers just simply speak the language or produce utterances without recognizing the morphological laws or phonemes that convey different meanings. The speakers of the language are not conscious of the syntactic and morphological laws of their language;

of the phonemes that they employ to convey different meanings, of the phonological oppositions which reduce each phoneme to a bundle of distinctive features, and of the grammar of the phonemics of their language.

Concerning that unconsciousness, this study tries to investigate and confirm the morphological laws of the Kanayatn Dayak language. It is an investigation of the distinctive feature of a phoneme or the grammar of verbalization formation involving nasal phonemes of the language. The investigation is aimed to describe affixation that covers the nasalization process, one process to derive active verbs and adjectives. The verb and adjective it derives are transitive and adverbial, conveying different meanings. It elaborates the phonology and morphology as a relation in complex word formation and process.

The following sub-section discusses the phonology and morphology of the Kanayatn Dayak Language. The sources are previous studies on phonology and morphology of the language and other related literature. Phonology deals with phonetics and phonemics. The former is sound and symbol of phoneme (Christianti, 2015), and the latter is discrimination of distinctive phoneme to distinguish meaning in word syllable or word or phoneme contrast to discriminate meaning (Yudes et al., 2016).

2.1 The Phonology of the Kanayatn Dayak Language

The phonology of the Kanayatn Dayak language for this study is described phonetically and phonemically. The phonemes are consonants and vowels, and vowel combinations as well. Moreover, phonology concerns deliberated for this part are syllables and words. The words consist of syllables, and the structure of syllables is onset, nucleus, and coda. Onset is the first consonant or set of consonants of a syllable or word, whereas the nucleus is a vowel or group of vowels after the onset (Kracht, 2008, p. 55). Lastly, the coda is the second consonant or group of consonants after the nucleus or group of the nucleus (Kracht, 2008, p. 55).

2.1.1 Plosives

The plosives of the language are /p/ and /ɱ/ for /pm/ sound, /b/, /t/ and /h/ for /tn/ sound, /d/, /k/, and /g/. The phonemes /p/ and /ɱ/, /t/ and /h/, and /k/ are voiceless consonants, while the phonemes /b/, /d/, and /g/ are voiced consonants. Regarding their position in syllables or words, these consonant phonemes are structurally onsets, and codas, except consonants /b/, /d/, and /g/ are only onsets and consonants /ɱ/ and /h/ that are only codas. The instances of these onsets and codas consonants in word syllable or word, as had been exemplified by Jeremia and Marsel (2018) and Sulastri (2020), which are /pulakɲ/ 'return', /bahata/ 'supply', /talino/ 'human', /alaɱ/ 'morning', /daŋo/ 'hut', /kabaŋ/ 'group', /busak/ 'cranky' and /galiʔ/ 'afraid'.

2.1.2 Affricates and fricatives

The affricates consonants of the language are /c/ and /j/, and the fricative is /s/. The consonant /c/ is voiceless, while the consonant /j/ is voiced. Moreover, the fricative /s/ is voiceless. In terms of a syllable or word structure, these affricates and fricative consonants are only onsets. Additionally, Jeremia and Marsel (2018) and

Meriana et al. (2019) recorded examples of syllables or words with the onsets employing these affricates and fricative consonants such as /cɛgaʔ/ ‘beautiful’, /jubata/ ‘lord’, /jilat/ ‘lick’ and /setɛʔ/ ‘one’.

2.1.3 Nasals

The nasals of the Kanayatn Dayak language consist of consonants /m/, /n/, /ŋ/, and /ɲ/. In the syllable or word syllable composition, the nasals /m/, /n/, and /ŋ/ can be onsets and codas, but the nasal /ɲ/ is only the onset. The examples, as had been collected by Jeremia and Marsel (2018) and Sulastri (2020), are consecutively /majuh/ ‘eat’, /damam/ ‘fever’, /nae/ ‘later’, /dian/ ‘here’, /ŋantiʔ/ ‘wait’, /ŋɛak/ ‘cry’, /timawakɲ/ ‘orchard’, and /ɲocok/ ‘drink’. Besides functioning as phonemes that distinguish meaning, the nasals behave as prefix allomorphs when they meet the first phoneme of root words as in /pajuh/ ‘to eat’, /kantiʔ/ ‘to wait’, and /kɛak/ ‘to cry’.

2.1.4 Vowels and vowels combinations

The vowels of the Kanayatn Dayak language comprises /a/, /ɛ/, /i/, /o/ and /u/. In the syllable or word syllable composition, these vowels are the nucleus. The glossary of the language in which the vowels are all initials are /ampus/ ‘go’, /ɛnek/ ‘small’, /incakɲ/ ‘bring’, /orakɲ/ ‘prawn’, and /urakɲ/ ‘people’ (Jeremia & Marsel, 2018, p. 154). Furthermore, the vowel combinations are all those five vowels. The examples of the vowels combinations applied in the glossary of the language are /ai/ as in /tait/ ‘hook’, /au/ as in /binaul/ ‘eagle’, /aɛ/ as in /gaeʔ/ ‘prank’, /iu/ as in /liut/ ‘keep spinning’, /ɛa/ as in /teaʔ/ ‘plenty’, /oa/ as in /boak/ ‘owl’, and /oɛ/ as in /loɛʔ/ ‘tender’. Additionally, based on the instances supplied by Jeremia and Marsel (2018, pp. 154-155), it is concluded that the language does not have native glossaries to refer to as diphthong /ai/, /au/, /oi/ usages, except the /ai/ in loan words /kaloi/ ‘gourami’ and /misai/ ‘mustache’.

2.2 The Morphology of the Kanayatn Dayak Language

The complex word formation or complex word constituent of the Kanayatn Dayak language involves free and bound morphemes. The free morpheme is a morpheme that can stand alone and constitute words by themselves, i.e., verbs, nouns, adjectives, and adverbs (Daulay & Niswa, 2021). The free morpheme is also termed root or base. The bound morphemes, as the element attached to the root or base, are affixes comprising prefixes, infixes, suffixes, and circumfixes. Hence, they cannot stand alone but are always part of words attached to some other morphemes (Daulay & Niswa, 2021).

The complex word formation as the topic of this study is affixation; it occurs when a morpheme is attached to a root (Lieber, 2009). Another word formation process of the language is reduplication, a morphological process of forming new words where the entire or parts of free morphemes are copied and attached to the base by adding or changing a few syllables (Lieber, 2009). The affixes of the Kanayatn Dayak language in terms of form, function and meaning are prefixes /ba-/, /di-/, /ka-/, /ma-/, /pa-/, /sa-/, and /ta-/. The suffixes are /-atn/, /-ɲa/, /-iʔ/, and /-atn/, and the circumfixes are /ba-atn/, /ka-atn/, /pa-atn/, and /sa-ɲa/. The affix also includes the affix combinations of

/ma-.atn/, /ma-.i'/, /ba-.atn/, /ba-.atn/, /di-.atn/, /di-.i'/, /di-.pa-/ , /di-.pa-atn/, /di-.pa-i'/, /m-.pa-atn/, and /ta-.atn/ (Astonis et al., 2018). Unfortunately, this study does not provide examples of complex word formation using the affixes. However, in terms of function, it is noticeable that the prefix /ba-/, for instance, is used to form transitive verbs, adverbials, adjectives, and numerals (Astonis et al., 2018, pp. 5-6). The prefix /ba-/ also has three allomorphs, namely /ba-/, /bar-/ and /baŋ-/.

Moreover, the prefix /di-/ is also mentioned to have allomorphs, those are /di-/, /dim-/, /din-/, /diŋ-/, /diŋa-/ and /diŋ-/ (Astonis et al., 2018, pp. 4-5). The examples of the allomorphs presented imply that the element of the allomorphs is mostly the prefix with nasals. In terms of the affix morpheme, the morpheme in this context, as constructive criticism, is not /di-/. It is /diN-/, and the allomorphs are /di-/, /dim-/, /din-/, /diŋ-/, /diŋa-/ and /diŋ-/. The N in /di-/ is the nasalization consisting of nasal phoneme /m-/, /n-/, /ŋ-/, and /ɲ-/. The appearance of the nasals is frequent. The morpheme or affix morpheme determination is based on the frequency of its appearance in words (Omar, 2014).

Kanayatn Dayak language also employs reduplication for its complex word formation. The reduplication is total and partial (Alexsander et al., 2020; Noveliar et al., 2019). Total reduplication is the formation of free and free morphemes, while partial reduplication is the formation of free and bound morphemes or reversely bound and free morphemes. In the study conducted by Alexsander et al. (2020), the prefix that is nasal or with nasal element is /ŋ-/ as in /ŋagoʔ/ 'seek,' and /paN-/ as in /paŋalok/ 'liar' (Alexsander et al., 2020, p. 42). The former is the nasal prefix that functions to form a transitive verb, and the latter is the one that is used to form a noun. As an addition, the prefix /ŋ-/ in /ŋagoʔ/ is replacive because it replaces plosive /g/ in /gagoʔ/ 'to seek', and the consonant /g/ is covert. The prefix or allomorph /paŋ-/ in /paŋalok/, on the contrary, is additive since it is added to /alok/ 'lie'. Its prefixation does not change the initial vowel phoneme /a/ in /alok/, and the phoneme /a/ is overt.

Moreover, the prefix morpheme can be nasalization and its nasal allomorphs. An example of this prefix morpheme in the Kanayatn Dayak language complex words are /ŋeak/ 'cry', which is derived from /keak/ 'to cry', and /ŋocok/ 'drink', which is generated from /cocok/ 'to drink' (Sulastri, 2020, p. 156); then /neleʔ/ 'see', /ŋium/ 'smell' and /ŋusap/ 'fondle', those are formed respectively from /teleʔ/ 'to see', /cium/ 'to smell' and /usap/ 'to fondle' (Meriana et al., 2019, pp. 6-7). Another similar case of nasal prefixation is also found in Dayak Kenyah Bakung language complex words /ŋelupek/ 'forget' and /ŋapan/ 'to shoot', that is, in respect, prefixed from /lupek/ 'to forget' and /sapan/ 'rifle' (Yan et al., 2019, p. 86).

2.3 Replacive Nasals, and Additive Nasals and Allomorphs

The previous study on the Bidayuh-Somu language found that the nasals are prefix-bound morphemes and are affixed to the root to form verbal that is transitive and adjective. Therefore, the initial phoneme of the root is nasalized. In terms of the morphological process, the nasalization is the morpheme, and the nasals are the allomorphs. The nasals are replacive and additive, and the initial phoneme of the root the nasals influence is covert and overt (Bunau, 2019).

The Kanayatn Dayak language has nasals and allomorphs that are replacive and additive. In nasal verbalization or nasalization process, there is a nasal phoneme that both functions as replacive and additive (Asmah, 2013). It means the nasal is replacive

and additive to the first phoneme of the root. Regarding replacive and additive nasals, [Bunau and Yusof \(2018\)](#) furthermore specified:

Nasalization is a process of prefixing nasal phonemes or nasal sounds to the initial phoneme of the free morpheme. Its prefixation is both replacive and additive. It means that the replacive prefixation is a process of replacing the first phoneme of a free morpheme using a nasal phoneme. Meanwhile, additive prefixation is a process of adding a nasal phoneme to the first phoneme of the free morpheme ([Bunau & Yusof, 2018, p. 205](#)).

Furthermore, the nasal phonemes of the Kanayatn Dayak language represented by the nasalization morpheme are bilabial /m/, alveolar /n/, velar /ŋ/, and palatal /ɲ/. In the discussion later, these nasal phonemes are also called nasal allomorphs. Meanwhile, the consonant phonemes of the language in which the nasal is replacive or additive are plosive, affricate, and fricative. The plosives are consonants /p/, /b/, /t/, /d/, /k, and /g/. Additionally, the affricates are consonants /c/ and /j/, while the fricative is consonant /s/. When it is replacive, the initial phoneme of the root of the language is covert, replaced with nasals phonemes. Then, the initial phoneme of the root is overt if the nasals are additive. Since the allomorph of the nasalization of this language is phonologically conditioned, the nasal verbalization process creates double homorganic nasal-oral consonants at the initial phoneme of the complex verbal word. The creation applies when the nasals are additive.

3. METHODS

This study applied descriptive linguistics as its method. Descriptive is a method used to describe the characteristics of an attribute of a particular phenomenon studied ([Creswell, 2012](#)). It describes linguistic features of the Kanayatn Dayak language in terms of replacive and additive nasal phonemes when it meets the first phoneme of the root words. The method is used to describe the feature that is replacive and additive and the characteristic of the covert and overt features. Moreover, this descriptive linguistics method is aimed to gather data on how the interface between nasal phoneme and first phoneme of root creates double homorganic nasal-oral consonant as a consequence of the additive nasal verbalization. Besides, descriptive linguistics is also a helpful method to identify the functions of the nasal that is class-changing and class-maintaining. The linguistic features that are additive and replacive and the characteristic of the covert and overt features are identified from verbs formulated by the element of nasals and roots.

The data for this study is spoken words in sentences or utterances of the Kanayatn Dayak language containing nasal phonemes that are replacive and additives. The data for this study were collected by recording and interviewing five native men aged between 45 and 55 from the Kanayatn Dayak during a cultural gathering activity in the longhouse. The recording and interviewing were recorded using a Sony recorder with direct consent from the informants. The interviews were in-depth, that is, on the issue and examples of words containing nasal forms or morphemes. The results of the interviews recorded were transcribed phonemically.

The data analysis technique is word form or word form variety analysis (Carstairs-McCarthy, 2016). The complex words of the Kanayatn Dayak language are derived from the nasalization process involving nasalization morpheme and nasal phonemes as allomorphs. The morpheme is {N-} or Nasalization, meanwhile the allomorph is the nasal phonemes /m/, /n/, /ŋ/, and /ɲ/. It is the selection of nasal verbalization of complex words in which the root is verb, noun, adjective, and adverb. In terms of morphological process and complex word formation, the Item and Process, or IP model, and Item and Arrangement, or IA model (Matthews, 2014) were also applied to this study. The IP deals with complex or nasalized verbalization and prefixation, while the IA refers to complex words and nasals or allomorphs that are replacive and additive.

The total data used for this study is 36 verbs containing nasals and eight sentences to contextualize the verbs containing the nasals. The results of this study are presented in sequence by categorizing replacive and additive. The replacive categorization is the nasal verbalization process that assigns replacive nasal phonemes to the root, while the additive one involves additive nasal phonemes to the root. By exemplification, the verbs derived from the process of nasal verbalization are applied in the syntactic model to provide appropriate context. The informants put the example of the verbs with nasals in the sentence as guided during the interviews. The words in the sentences are understood and glossed by following Leipzig's glossing rules (Croft, 2003; Lehmann, 1982; Leipzig Glossing Rules; 2015). The syntactic model is the Kanayatn Dayak language's sentences or utterances.

4. RESULTS

Data of this study is divided into replacive and additive nasal phonemes. In the nasal verbalization process of the Kanayatn Dayak language, the replacive phonemes are /m-/, /n-/, /ŋ-/, and /ɲ-/. Moreover, the additive phonemes and allomorphs applied for this nasal verbalization process are allomorph /ma-/ and alternant /m-/, allomorph /am-/, allomorph /an-/ and alternant /n-/, nasal /ŋ-/, and allomorph /ɲa-/.

4.1 The Replacive Nasal Phonemes

The rule of the first phoneme of root and replacive nasal phonemes assigned to form verbs resulting from data analysis is listed in Table 1.

Table 1. Rule of replacive nasal phonemes of the Kanayatn Dayak language.

Consonant	Root initial phonemes	Replacive nasal phonemes
Plosive	/p/, /b/	/m/
	/t/, /d/	/n/
	/k/, /g/	/ŋ/
Affricate	/c/, /j/	/ɲ/
Fricative	/s/	/ɲ/

Table 1 explicitly shows that the nasal /m-/ is replacive to plosive consonants /p/ and /b/ while nasal /n-/ is replacive to plosive consonants /t/ and /d/. Moreover, the nasal /ŋ-/ is replacive to plosive consonant /k/ and /g/. Lastly, nasal /ɲ-/ is replacive to affricate consonants /c/ and /j/, and the fricative consonant /s/.

4.1.1 *Nasal /m-/*

This nasal /m-/ is class-maintaining and class-changing in terms of function. It is prefixed to roots that are verbs and adjectives, starting with the plosive consonants /p/ and /b/. The nasalized replacive /m-/ examples are shown in Table 2.

Table 2. Nasalized replacive /m-/.

No.	Roots	Gloss	Nasalized verbalization	Gloss
1.	/pampar/	‘flourish’	/mampar/	‘to flourish’
2.	/patak/	‘to tell’	/matak/	‘tell’
3.	/bareʔ/	‘to give’	/mareʔ/	‘give’
4.	/bera/	‘angry’	/mera/	‘to get angry’
5.	/patek/	‘trigger’	/matek/	‘to trigger’

Since the nasal /m-/ is replacive, the first phoneme of the root is covert. It is changed with the nasal /m/. Examples in numbers 1-3 in Table 2 are class-maintaining, and number 4 is class-changing. Then, example number 5 is class-maintaining and class-changing since the root is verb and noun. Moreover, the usage example and gloss of the word resulting from the nasal verbalization is in the following syntactic model of the Kanayatn Dayak language.

- (1) <mototn ayukŋ nian memang ayaʔ paŋa pula dah mampar buahpa>
 rice field-friend-this-really-wide-paddy-the-then-has-flourished-grain-the
 ‘This friend’s rice field is vast; the paddy is now flourishing grains’.

The process of nasal verbalization using phoneme /m-/ in the examples provided and one usage example in the sentence above derives a transitive verb and signifies the meaning ‘to do’. Moreover, the meaning of nasals verbalizations is unchanged when the nasals enter the roots, that is, verbs. They are proof that linguistically the form of the language signifies meaning since morphology deals with form and meaning.

4.1.2 *Nasal /n-/*

This nasal /n-/ is affixed to the root initiated with plosive consonants /t/ and /d/. Since the nasal /n-/ is replacive, the first phoneme of the root is covert. Nasal /n-/ is present with the verb and noun roots; therefore, it is class-maintaining, as exposed in examples numbers 1-4 (Table 3). Nevertheless, the nasal /n-/ is also class-changing, as shown in example 4, since the root is both verb and noun. Table 3 presents examples of this nasal /n-/verbalization process.

Table 3. Nasalized replacive /n-/.

No.	Roots	Gloss	Nasalized verbalization	Gloss
1.	/teleʔ/	‘to see’	/neleʔ/	‘see’
2.	/daŋar/	‘to hear’	/naŋar/	‘hear’
3.	/tosok/	‘to hide’	/nosok/	‘hide’
4.	/teget/	‘hate’	/neget/	‘to hate’

The data of the following syntactic model of the language shows that the replacive nasal /n-/ is assigned to form the verbal word from the verb root. The syntactic model and the gloss are as follows.

- (2) <areʔ ia ku neleʔ kao tumareʔ ku neleʔ kao ampeatn ku neleʔ kao agiʔ kao nian ada kamae mae>
 day-after-I-see-you-yesterday-I-see-you-now-I-see-you-again-you-that-present-every-where
 ‘I saw you in the last two days and yesterday. I am seeing you again now. You have been here and there spying on me’.

The replacement of the first phoneme of root employing the nasal /n-/ as indicated in the example of the sentence above signifies the meaning ‘to do’. The signification infers that the meaning of the replacive nasal /n-/ that is class-maintaining remains unchanged from its root, that is, verbs. The verb this nasal derives is transitive.

4.1.3 Nasal /ŋ-/

The collected data confirm that this nasal /ŋ-/ can be attached to a root that is the verb (see examples numbers 1-4 in Table 4) and noun (please see example number 5), and therefore, the nasal is both class-maintaining and class-changing. Based on the word structure, this nasal /ŋ-/ is present with roots starting with plosive consonants /k/ and /g/. After verbalization, the initial phoneme is covert, replaced with the nasal /ŋ-/. The examples are laid out in Table 4.

Table 4. Nasalized replacive /ŋ-/.

No.	Roots	Gloss	Nasalized verbalization	Gloss
1.	/kokok/	‘to survey’	/ŋokok/	‘survey’
2.	/koseʔ/	‘to peel’	/ŋoseʔ/	‘peel’
3.	/gagar/	‘to shake’	/ŋagar/	‘shake’
4.	/gagoʔ/	‘to look for’	/ŋagoʔ/	‘look for’
5.	/karakek/	‘betel leaf’	/ŋarakek/	‘to chew betel leaf’

The form of /ŋ-/ that is replacive nasal approves that its function is both class-maintaining and class-changing. In the sentence of this studied language, the application of complex words resulting from the nasal verbalization proses is shown in the following extract.

- (3) <ampeatn urakŋ kaʔ kampokŋ agiʔ ŋokok tanah mototn>
 currently-people-in-village-now-survey-land-cultivation
 ‘The farmers in the village are now doing a land survey for their cultivation site’.

The data in (3) shows that the meaning of the form /ŋ-/ signifies ‘to do’. In this case, the nasal is class-maintaining; therefore, the meaning is unchanged from its root form. The nasal also creates a transitive verb. In addition, the signification of the form is proven by the above syntactic model of the language's morphology.

4.1.4 Nasal /ɲ-/

In the verbalization process, this nasal /ɲ-/ is prefixed to the root that is a verb (as in examples numbers 1-3), noun (as in example number 4), and adjective (as in example number 5) (see Table 5). This nasal /ɲ/ is class-maintaining as in examples 1-3 and class-changing as indicated in examples 4-5. Furthermore, it is found that this replacive nasal is attached to the root, beginning with affricate consonants /c/ and /j/ and the fricative consonant /s/. During the verbalization process, the first consonant of

the root is covert and replaced using the nasal /ŋ/, as shown in the examples in Table 5.

Table 5. Nasalized replacive /ŋ-/.

No.	Roots	Gloss	Nasalized verbalization	Gloss
1.	/cocok/	'to drink'	/ŋocok/	'drink'
2.	/jamən/	'to treat'	/ŋamen/	'treat'
3.	/saruʔ/	'to call'	/ŋaruʔ/	'call'
4.	/samah/	'fish catcher'	/ŋamah/	'to catch fish'
5.	/supεʔ/	'shy'	/ŋupeʔ/	'to be shy'

The analysis of the data gathered, as seen above, affirms that the nasal /ŋ-/ is the form of the language. It is functioned to maintain word class, that is, verbs. It also functions to change the word classes, nouns, and adjectives. (4) is the context instance of the verbal word in the syntactic model of the Kanayatn Dayak language.

- (4) <musipm kariŋk tautn arεʔ batol repo ŋamah ikatn kaʔ suŋe mampawah>
 season-dry-year-last-really-happy-catch-fish-in-river-mempawah
 'It was fun to catch fish in the river Mempawah last dry season'.

The sentence in (4) illustrates that the verb it creates is transitive, and the meaning 'to do' is the signification that the nasal /ŋ-/ implies. The form distinguishes meaning or signification from the list of nasalized verbalizations and the sentence displayed in (4).

The discussion of the nasals to verbalize words in (4) confirms that they are replacive. The examples sorted from the data collection indicate that the replacive verbalization with nasals /m-/ , /n-/ , /ŋ-/ , and /ŋ-/ are both class-maintaining and class-changing. It is also shown that the replacive nasals of the Kanayatn Dayak language prevail more with verbs than nouns or adjectives. In other words, it is more class-maintaining than class-changing. Moreover, it is found that these replacive nasals are prefixed more to roots and begin with voiced consonants, that are plosives /b/ , /d/ and /g/ , and affricates /c/ and /j/ compared to unvoiced or voiceless consonants.

4.2 The Additive Nasal Phonemes and Allomorphs

The data of the Kanayatn Dayak collected shows that the nasals /m/ , /n/ , and /ŋ/ , besides replacive, are also additive to the first phoneme of the roots. The results of the analysis imply that the allomorph /ma-/ and alternant nasal /m-/ , and allomorph /am-/ , allomorph /an-/ and alternant nasal /n-/ , nasal /ŋ-/ , and allomorph /ŋa-/ occur as additive elements at the beginning of the roots. It is found that the additive nasal phoneme and allomorph are additive to root beginning with all consonants and vowels. Moreover, the allomorph /ŋa-/ is additive to the root initiated with all vowel phonemes. This allomorph /ŋa-/ is applied to a root that is mostly a monosyllabic loan word. Besides that, affixing additive nasals phonemes and allomorphs /m-/ and /n-/ to root results in double homorganic nasal-oral consonants such as /ml/ , /mp/ , /mb/ , /nt/ and /mr/ at the beginning of the complex or derived words. Finally, affixing nasal /ŋ-/ and allomorph /ŋa-/ to the root maintains the first phoneme overt.

4.2.1 Allomorph /ma-/ and alternant /m-/, and allomorph /am-/

It is discovered that additive allomorph /ma-/ and alternant /m-/ and allomorph /am-/ enter root that is the verb (as seen in examples numbers 1-2 in Table 6), noun (as seen in examples numbers 3 and 6), adjective (as seen in example number 4), and adverb (as seen in example number 5). Therefore, the allomorphs and the nasal alternants are class-maintaining, as found in examples 1-2, and class-changing, as found in examples 3-6. Moreover, the alternant does not change the meaning of the derived words. The examples of the additive nasal verbalization process indicate that the first phonemes /l/, /p/, /b/, and /r/ is overt, and create double homorganic nasal-oral consonants /ml/, /mp/, /mb/ and /mr/ to the first phoneme of the verbs. The examples are presented in Table 6.

Table 6. Nasalized additive allomorph /ma-/ and /am-/, and alternant /m-/.

No.	Roots	Gloss	Nasalized verbalization	Gloss
1.	/laher/	'to give birth'	/malaher/; /mlaher/	'give birth' 'give birth'
2.	/balak/	'to circumcise'	/mabalak/; /mbalak/	'circumcise' 'circumcise'
3.	/bini/	'female'	/mabini/; /mbini/	'to marry' 'to marry'
4.	/rajatn/	'greedy'	/marajatn/; /mrajatn/	'to eat up' 'to eat up'
5.	/peatn/	'currently'	/ampeatn/; /mpeatn/	'current' 'current'
6.	/pagi/	'morning'	/ampagi/; /mpagi/	'tomorrow morning' 'tomorrow morning'

The process of verbalization using the additive nasal /m-/, as listed in Table 6, derives transitive verbs and adjectives. The signification of 'to do' and the derived verb applied is shown in the following sentence of the language.

- (5) <we? ambeka naun dah bamanantu pi tumalapm ia malaher anakpa agi?>
 mother-girl-there-yet-son in law-but-last night-she-give birth-her baby-again
 'That girl's mother already has a son-in-law, but she gave birth to a baby again last night'.

The above verbal word-formation employing /ma-/ and alternant /m-/ and allomorph /am-/ and the syntactic model selected from the utterance data expresses that additive nasals or allomorphs verbalization applies to the Kanayatn Dayak language.

4.2.2 Allomorph /an-/ and alternant /n-/

The data collection of nasal verbalization indicates that the additive allomorph /an-/ and its alternant /n-/ are affixed to verbs and adjectives. The alternant /n-/ prefix does not change the word's meaning. It is evident that the allomorph and its nasal alternant are class-maintaining, as displayed in examples numbers 1-2 in Table 7, and class-changing, as seen in example number 3. Moreover, it is found that this allomorph and its alternant enter the root, starting with a plosive consonant /t/. The examples are in Table.

Table 7. Nasalized additive allomorph /an-/ and alternant /n-/.

No.	Roots	Gloss	Nasalized verbalization	Gloss
1.	/tugoʔ/	‘to ponder’	/antugoʔ/; /ntugoʔ/	‘ponder’ ‘ponder’
2.	/tiʔatn/	‘to wait’	/antiʔatn/; /ntiʔatn/	‘wait’ ‘wait’
3.	/tuha/	‘elder’	/antuha/; /ntuha/	‘to call elder’ ‘to call elder’

The examples in Table 7 approve that allomorph /an-/ and alternant /n-/ enter the root or free morpheme that is verb and adjective. Thus, the nasalization of the additive allomorph and its alternant is to maintain and change the word class. The following is an instance of the usage of nasalized verbalization in the syntactic model of the morphology of the Kanayatn Dayak language.

- (6) <indona antugoʔ kaʔ muha pintu mikiriʔ buukpa naŋ dimotokŋ ponok>
indona-ponder-in-front-door-think-her hair-that-cut-short
‘Indona is now pondering on the veranda, thinking of her haircut that is too short’.

To conclude, the meaning of this additive language feature indicates the signification ‘to do’ as exemplified in (6). Moreover, the verb it derives is an active verb, which is an intransitive verb. The intransitive verb this allomorph derives is an additional verb type besides the transitive ones.

4.2.3 Nasal /ŋ-/

In the process of verbalization, this additive nasal /ŋ-/ is found to enter roots beginning with vowel phonemes and glides. Based on the data analysis, this additive nasal /ŋ-/ is applied to verbs and nouns. Therefore, it is class-maintaining as exposed in examples 1-3 in Table 8 and class-changing as fostered in examples 4-5. Besides, this additive nasal /ŋ-/ results in double-consonants at the beginning of the derived word. In other words, this additive nasal /ŋ-/ maintains the presence of the first phonemes of the root staying overt. Table 8 shows examples of the process of additive verbalization of nasal /ŋ-/ to the root of the language.

Table 8. Nasalized additive nasal /ŋ-/.

No.	Roots	Gloss	Nasalized verbalization	Gloss
1.	/ajok/	‘to pinch’	/ŋajok/	‘pinch’
2.	/gunak/	‘to awake’	/ŋgunak/	‘awake’
3.	/olek/	‘to hurl’	/ŋolek/	‘hurl’
4.	/ajek/	‘prank’	/ŋajek/	‘to prank’

The examples in Table 8 signify that the nasal /ŋ-/ maintains the first phoneme of the roots overt after the process of verbalization. Moreover, the example of a transitive verb and its usage in the sentence of the Kanayatn Dayak language is as follows.

- (7) <alap-alap wəʔna dah ŋgunak anakpa gali talambat ampus kaʔ sakolah>
early morning-his mother-has-awake-her son-afraid-late-come-to-school
‘His mother awakes him early in the morning for not coming late to school’.

The additive nasal /ŋ-/ in Table 8 is verbal word-formation from verbs and nouns. It is illustrated as confirmation of the form of the language. To add more, the syntactic model of the morphology of the language implies the meaning ‘to do’.

4.2.4 Allomorph /ŋa-/

The data of the nasal verbalization process shows that the additive allomorph /ŋa-/ is class-changing, as exemplified in examples numbers 1-3 in Table 9, and class-maintaining as presented in example number 4 since it is affixed to nouns and verbs. The noun root is monosyllabic, and loan words are taken from Indonesian. Nevertheless, this study also supplies one example of an exclusion that is originally native, as seen in number 4. Moreover, it is found that this allomorph /ŋa-/ is affixed to the root that starts with affricate /c/, lateral, and retroflex consonants. This additive allomorph maintains the first phoneme of the root staying overt after its prefixation process, as shown in Table 9.

Table 9. Nasalized additive allomorph /ŋa-/.

No.	Roots	Gloss	Nasalized verbalization	Gloss
1.	/cap/	‘stamp’	/ŋacap/	‘to stamp’
2.	/lap/	‘mob’	/ŋalap/	‘to mob’
3.	/rem/	‘brake’	/ŋarem/	‘to brake’
4.	/lɛlɛt/	‘to bind’	/ŋalɛlɛt/	‘bind’

The verbalization process of additive allomorph /ŋa-/, in which the examples are provided in Table 9, maintains the presence of the initial phoneme of the word to be overt. Furthermore, an example of a verbal word is used in the following syntactic model of the morphology of the Kanayatn Dayak language.

- (8) <timanggong ŋacap kaputusatn adat ka? rumah radakŋ>
 custom chief-stamp-decision-customary-in-long house
 ‘The custom chief stamped the decision on customary law penalty in the longhouse’.

Based on the data analysis and examples collected, it is confirmed that the additive allomorph /ŋa-/ enters the mostly monosyllabic root. In addition, the nasals verbalization process assigning the allomorph /ŋa-/ indicates the meaning ‘to do,’ as demonstrated in (8).

5. DISCUSSION

The study of nasal verbalization in the Kanayatn Dayak language is the phonological study of nasal phonemes and morphologically allomorph of nasalization. This verbalization involves nasal phoneme, a phonetic phenomenon that changes the sound (Igartua, 2015) and discriminates meaning. Morphologically, the nasals are prefixes and allomorphs of nasalization morpheme. They are phonological conditioned allomorph or phonological conditioning environments (Rolle, 2021). The phonological condition allomorphs or nasals as prefix of the language are /m-/, /n-/, /ŋ-/ and /ɲ-/. Moreover, the implication of this study is to contribute to additional linguistic description of the language in terms of nasals as morphemes in word

formation. Therefore, it is an update on the existing literature on the morphology of Kanayatn Dayak.

In relation to previous works, this study is in line with what [Al-Hamadi and Salman \(2011\)](#) reported, that is, the morphophonemic interface. The nasal prefix and allomorph are replacive ([Santos, 2013](#)), and nasalization is the parameter and additive feature ([Maddieson, 2005](#)). The study of this verbalization of the Kanayatn Dayak language confirms that the nasals are prefixes and allomorphs, both replacive and additive. Unlike the study by [Maltseva \(2018\)](#), in which the vowel is dropped and restored to contrast, the vowel in this Kanayatn Dayak language is replacive or exchanged and additively maintained when they meet nasals.

Based on the result of the study and its analysis, it is fixed that the nasal verbalization of the Kanayatn Dayak language employs nasal phonemes as prefixes or allomorphs. This circumstance is appropriate to the notion that the form of morpheme is sound or phoneme sound and syllable ([Manova et al., 2020](#)). Moreover, since the allomorph is a variant of a morpheme ([Denistia & Baayen, 2019](#)), thus the prefix morpheme in the nasal verbalization of the language is nasalization and its nasal allomorphs.

By referring to the existing studies and publications related to this work, the implication of this study on the Kanayatn Dayak language is the necessity to rewrite its morphology. The morphology deals with morphemes and their allomorphs and alternants. Therefore, the prefix /di-/ and its variation ([Astonis et al., 2018](#)) should be the morpheme {diN-}, with the allomorph or affix consisting of prefixes /di-/ , /dim-/ , /din-/ , /diŋ-/ , /diŋa-/ and /diŋ-/. Since allomorph is morpheme in real use ([Mel'cuk, 2016](#)), then consequently, the /dim-/ , /din-/ , /diŋ-/ , /diŋa-/ and /diŋ-/ are not variation of the prefix /di-/. They are all prefixes like the /di-/ itself. In addition, the frequency of word formation using the element of nasals determines {diN-} is a morpheme. By having a correct conception of the morpheme and allomorph, the researchers, students, or speakers' successors of this language can, for example, conduct a study on noun word-formation that applies the nasals.

6. CONCLUSION

Based on the analysis and description, this study has listed and described that the feature of nasals of the Kanayatn Dayak language is replacive and additive. The feature can be both replacive and additive depending on the initial phoneme of the root the nasals enter. These replacive and additive nasal verbalization processes function as class-maintaining and class-changing based on the root class to the nasals attached. As a replacive, the nasal verbalization process replaces the first phoneme of the root with nasals /m-/ , /n-/ , /ŋ-/ , and nasal /ŋ-/. As additive verbalization, it is added to the first phoneme of the root by employing allomorph /ma-/ and alternant /m-/ , allomorph /am-/ , allomorph /an-/ and alternant /n-/ , and nasal /ŋ-/ and allomorph /ŋa-/.

Moreover, the replacive nasal verbalization makes the first phoneme of root covert. It is replaced with the replacive nasals. Then, the additive verbalization process maintains the first phoneme of the root staying overt. As a result, these additive nasals also create double homorganic-nasal oral consonants at the first phoneme of the verbs. The verbalization process involving additive allomorph only maintains the first phoneme of the root staying overt. In complex word formation, nasal verbalization

creates active transitive and intransitive verbs. The signification of these replacive and additive nasals is 'to do'.

The limitation of this study goes into three breakdowns. First, the insufficient academic and scientific sources, so only a few were selected as references. Second, the inaccurate examples provided in the article's publication were chosen as references; therefore, it was puzzling to confront the data collected with examples in the article published. Third, this study does not picture the grammatical description of the language as a whole, for its scope is only a subsection of morphology. Hence, it is suggested that more studies on the language are encouraged to have sharper linguistic descriptions, especially the morphology. Finally, the exemplification and description of this study may hopefully contribute to the implication for other indigenous studies focusing on the language morphology and typology across Indonesian archipelagos.

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