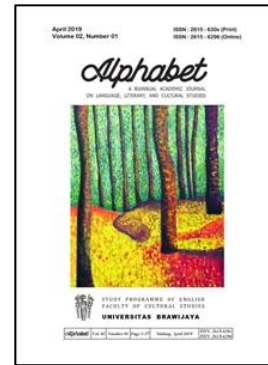


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Phonological Differences in The Sub-Dialect of Dayak Desa Dawak and Dayak Desa Belungai

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Phonological Differences in The Sub-Dialect of Dayak Desa Dawak and Dayak Desa Belungai

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Ermina Toliang¹

Abstract

Dayak Desa language has five sub-dialects, namely Dayak Desa Dawak (DDD), Dayak Desa Belungai (DDB), Dayak Desa Ulu, Dayak Desa Meranggau and Dayak Desa Semalak. This research only deals with the analyses of phonological differences in the sub-dialect of Dayak Desa Dawak (DDD) and Dayak Desa Belungai (DDB) that is located in Toba District. The goal is to document the language from a phonological point of view. This research uses a list of 200 Swadesh vocabularies. The participants were asked to pronounce the words in the list and recorded by PRAAT. The result of the recording was verified by the spectrogram. The findings showed differences between the two sub-dialects such as raising the vowel sound in the closed syllable: /ε~i/, raising the vowel sound in the open syllable: /ε~ə/, the consonant alteration in the first syllable: /s~/h/, the consonant alteration in the last syllable: /s~h/, /ŋ~n/, /r~r/ and sound: /p~j/, and the consonant insertion in the first syllable: /Ø~n/. The difference exemplified by the phoneme /r/ of DDD which changes into /r/ in DDB becomes the special characteristic for DDB.

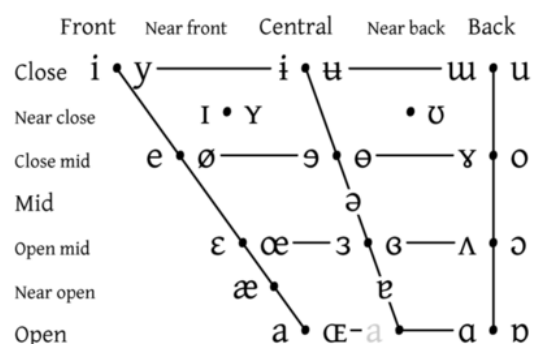
Keywords: sub-dialect, phonological differences, pronunciation

Phonology deals with how the sounds are organized into systems for each individual language (Davenport & Hannahs, 2005). Similarly, Zsiga (2013) stated phonology is a study how language organizes sound into different patterns. Another linguistic discipline which deals with sound is phonetics. But, unlike phonology which is concerned with the abstract, phonetics is concerned with the physical properties of sounds. It studies about how the sounds are produced. There are two classifications of sound, those are vowel and consonant.

The vowel sound is classified based on the position of the tongue and the shape of the mouth. When producing vowel sounds, there is no constriction of air flow. According to Odden (2013), the most important properties

for defining vowels are height, backness/frontness, and roundness.

VOWELS



Vowels at right & left of bullets are rounded & unrounded.

Picture 1. IPA Vowel Chart

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The consonant sounds occur when the air flow through the vocal tract and get the constriction in some places of articulation. There are three criteria of a consonant, namely voicing, place of articulation and manner of articulation.

Voicing is what the vocal folds are doing. There are two types of voicing. Those are voiced sound and voiceless sound. The voiced sound happens when air passes through vibrating vocal folds. The example of voiced sounds are [b], [z], [d], [g], and [v]. Whereas, the voiceless sound happens when air passes through open vocal folds. The examples are [p], [s], [t], and [f].

The other criteria of consonant are the place of articulation where the constriction of airflow takes place. Odden (2013) stated there are eleven places of articulation. Those are bilabial, labiodental, dental, alveolar, alveopalatal, retroflex, palatal, velar, uvular, pharyngeal, and laryngeal/glottal.

The last criteria of consonant are the manner of articulation. It is how the airflow constricted. Davenport & Hannahs (2005) stated there are six manners of articulation, namely stops, affricates, fricatives, nasals, liquids, and glides.

CONSONANTS (PULMONIC)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			r					ʀ		
Tap or Flap				ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

Picture 2. IPA Consonant Chart

The phonological differences can occur in a vowel or consonant variation, and usually, the speaker does not realize if there are any differences in a dialect or sub-dialect (Zulaeha, 2010). The vowel variation happens in the vowel sound of the same sequence in a word.

The consonant variation occurs in the consonant sound of the same sequence in a word.

This research investigates about the phonological differences between the sub-dialect of Dayak Desa Dawak (henceforth DDD) and Dayak Desa Belungai (henceforth DDB). There are different pronunciations of the same words that are used by these two subgroups. Some factors that might influence the different sub-dialects in Dayak Desa language are the geographical condition, assimilation of different languages and intermarriage with the other sub-tribes (Tanco, 2014).

Previous researches about Dayak languages, Alloy et al. (2008) and Tanco (2014) are concerned with the division of the languages of Dayak subgroups. Dayak Desa is divided into two parts based on the geographical condition, Dayak Desa Belungai is located around Belungai hill, Toba districts; and Dayak Desa Ulu is located in Meliau District (Alloy, 2008). Another research by Tanco (2014) also studied Dayak Desa and asserted that Dayak Desa language is divided into five sub-dialects: namely Dayak Desa Belungai, Dayak Desa Dawak, Dayak Desa Ulu, Dayak Desa Meranggau and Dayak Desa Semalak. Three of them, Dayak Desa Ulu, Dayak Desa Meranggau and Dayak Desa Semalak, are located in Meliau district and the small area in Toba District. Toba district itself is divided into two parts: DDB is located around Belungai hill, and DDD is situated along Dawak river.

To the best of the researchers' knowledge, there has not been any research conducted on the phonological differences among DDB and DDD. Therefore, this research intends to complete the existing research about Dayak Desa languages. Specifically, the present study is going to investigate the phonological differences in the sub-dialect of Dayak Desa Dawak and Dayak Desa Belungai. This study is significant to be conducted because of the limitation of the indepth study of the sub-dialects of Dayak Desa. Besides, this research is intended as a step in documenting Dayak Desa language which undergoes shifting due to the

influence of Indonesian, Malay and other languages brought by the comers to this area.

In analyzing those two sub-dialects, the researchers compare them using PRAAT which was developed by Paul Boersma and David Weenink in 1995. PRAAT is a phonetic program that is used to analyze the sound of a language. Using PRAAT, the researchers try to recognize the different pronunciation spoken by the participants of DDD and DDB by seeing the differences between vowel and conso-nant in the spectrogram.

METHODS

This research uses qualitative descriptive research (Dörnyei, 2011). The researchers immediately perform data analysis by transcribing the interview and comparing the data among participants. In this research, the researchers compare the phonological differences between the sub-dialect of DDD and DDB. The data in this research are the sub-dialects of DDD and DDB, which are analyzed for the differences by using the theories of dialectology, phonology and assisted by PRAAT.

The researchers took four participants for each sub-dialect from whom the data were collected. The criteria for choosing the participants are adapted from Nida (1962) and Wakidi et al. (1991), namely: female or male, \pm 16 years old, the native speakers of sub-dialect of DDD for the participants from DDD, the native speakers of sub-dialect of DDB for the participants from DDB. They must have at least finished elementary school so that they can speak Indonesian. In addition, they must have good speech organs, be willing to be the participants, be able to spare much time to participate in the research, be open-minded and not be umbrageous persons.

This study needs the instrument to use in collecting data. The instrument of this research is the list of words based on 200 Swadesh vocabularies (Mahsun, 2000). Swadesh vocabularies contain the basic vocabularies that can be found in many languages and hence minimize the possibility of borrowings.

This list is used as a guideline of collecting data.

The data collection is organized in the following steps. First, preparing the instrument that is the list of Swadesh vocabularies. Then, asking the participants to translate the words into Dayak Desa language. After that, asking them to pronounce the vocabularies based on the list and recording the pronunciation by using PRAAT version 6.0.39 installed on Asus laptop which is equipped with Logitech h110 microphone.

There are some steps in analyzing the data. First, the researchers selected the data that showed significant differences between the sub-dialects of DDD and DDB. Then, the data was classified. Next, the data recorded from the participants was formatted into WAV form. The result of the recording was processed using PRAAT. Then the data was presented into PRAAT spectrogram to show the phonological differences on DDD and DDB. After that, transcribing the data and making the phonetic transcription from the data. Finally, explanation was provided for the result of the analysis.

FINDINGS

The research found the differences between sub-dialect DDD and DDB vowel variation and consonant variation. Those are displayed into PRAAT spectrograms.

Vowel Variation

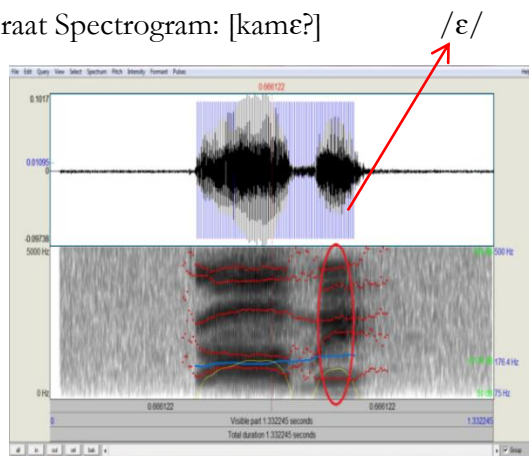
Two vowel variations were found in the data in the form of raising the vowel sound on closed syllable and raising the vowel sound on open syllable as presented in table 1 and in table 2.

Table 1. Raising the vowel sound on closed syllable

WORD	DDD	DDB
We	[kameʔ]	[kamiʔ]

In the datum, the low vowel becomes high in the final closed syllable. The raising occurs before the vowel encounters the final consonant /ʔ/. The phoneme alteration of the vowel from DDD and DDB happens within the range of the middle to high sound that is the sound /ε/ raises to sound /i/. It can be observed that there is a vowel raising /ε/ whose F1 is 958 Hz and it is raised into /i/ whose F1 is 1013 Hz. This can be viewed at the PRAAT spectrograms of [kameʔ] and [kamiʔ].

Praat Spectrogram: [kameʔ]



Praat Spectrogram: [kamiʔ]

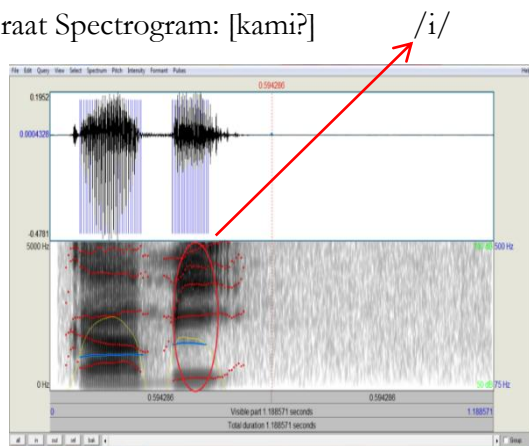
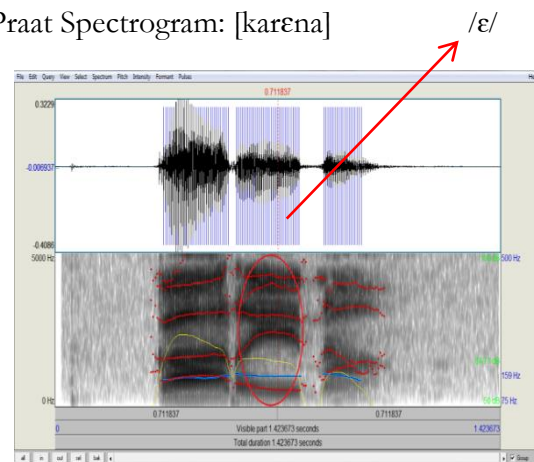


Table 2. Raising the vowel sound on open syllable

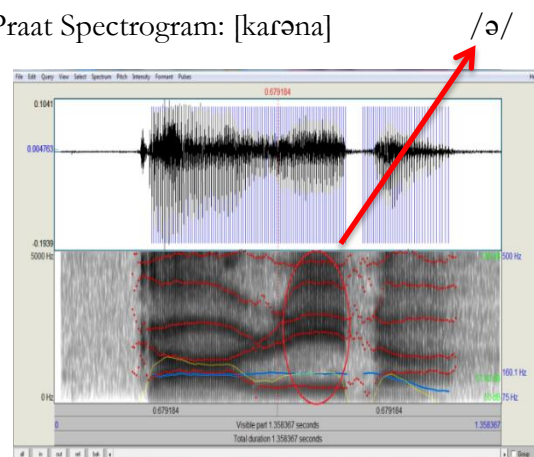
WORD	DDD	DDB
Because	[karəna]	[karəna]

The raising vowel sound on open syllable occurs before the vowel encounters the consonant /n/. From the table, it can be seen that there is a change from phoneme /ε/ to /ə/. The word has the same sequence such as the word "because," in DDD is [karəna], and DDB is [karəna]. This word consists of six sounds. The change is in the fourth sequence that is phoneme /ε/ to /ə/. Seen from each position, phoneme /ε/ is open middle and /ə/ is close middle. It means the position of the tongue when pronouncing /ε/ is low in the mouth. When pronouncing /ə/, because it is affected by the sound /r/, the position of the tongue touches the ridge. It can be observed in the following PRAAT spectrograms.

Praat Spectrogram: [karəna]



Praat Spectrogram: [karəna]



Consonant Variation

There are thirtyseven words described as the consonant variation. They can be divided into three types: the consonant alteration on

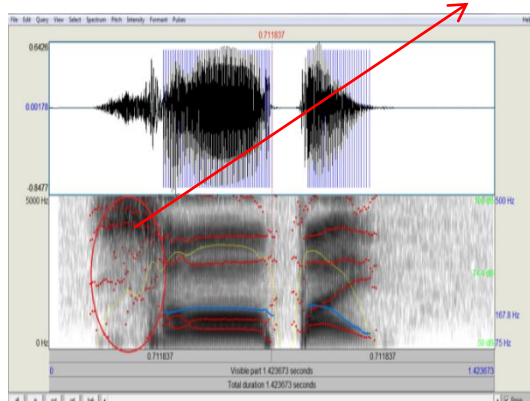
first syllable consisting of eleven words, the consonant alteration on second syllable consisting of twentyfive words, and the consonant insertion in the second syllable consisting of one word. Each of these three types of consonant variation will be presented in table 3, table 4 and table 5

Table 3. The consonant alteration in the first syllable

WORD	DDD	DDB
Who	[səpaj]	[həpaj]

The first type was the consonant alteration in the first syllable altering phoneme /s/ into /h/. Almost all the words that use consonant /s/ in the first syllable of DDD will be changed into consonant /h/ in DDB. Phoneme /s/ is voiceless al-veolar fricative consonant and happens when there is constriction between the blade of the tongue and the alveolar ridge. In another hand, phoneme /h/ is voiceless glottal fricative consonant, and it happens if there is the constriction on vocal cords. In the spectrogram the phoneme /s/ shows the strong turbulence than phoneme /h/. The turbulence noise is stronger in sibilants /s, z, ʃ, Z/ than non –sibilants /f, v, T, D, h/. Therefore, the sound wave of /s/ is darker than /h/. This can be observed in the following PRAAT spectrograms of some examples that the researcher took from the data DDD [səpaj] and in DDB [həpaj] which means ‘who’.

Praat Spectrogram:[səpaj] /s/



Praat Spectrogram:[həpaj] /h/

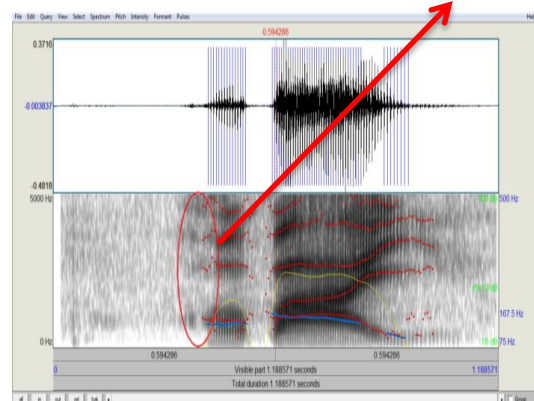


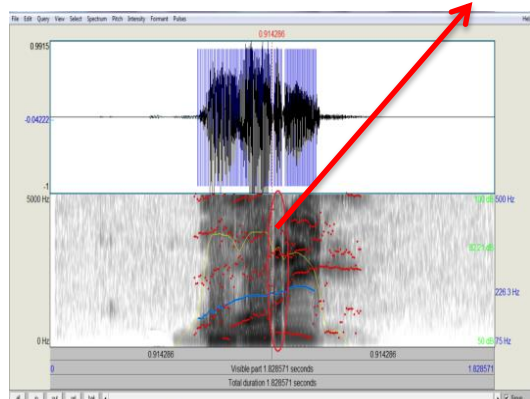
Table 4. The consonant alteration on the last syllable

WORD	DDD	DDB
Lie Down	[guriŋ]	[guriŋ]
People	[uraŋ]	[uraŋ]
Big	[bosar]	[bosar]
Thin	[lipis]	[lipih]
Slippery	[licin]	[licin]
He/she	[iɲa]	[ija]

The first data shows the change is in the third sequences, such as ‘lie down’ in DDD is [guriŋ] in DDD and [guriŋ] in DDB. This alters from phoneme /r/ to become /ɾ/. The phoneme /r/ is a thrill where the tongue flap is more than once and /ɾ/ as flap where the tongue flap is only once. It can be observed in the following PRAAT spectrograms.

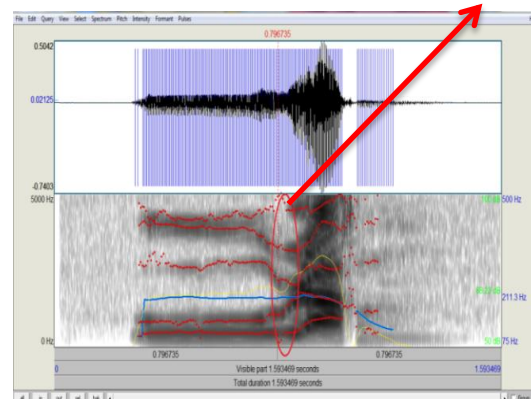
Praat Spectrogram: [guriŋ]

/r/



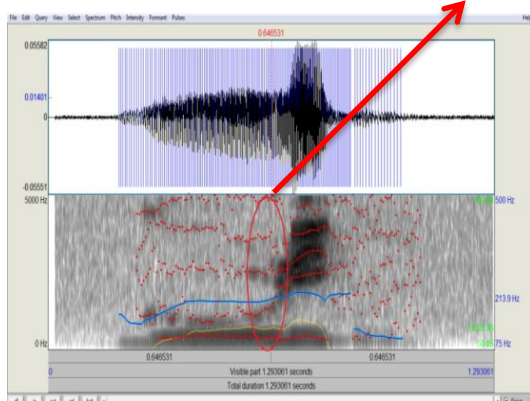
Praat Spectrogram: [uraŋ]

/r/



Praat Picture: [guriŋ]

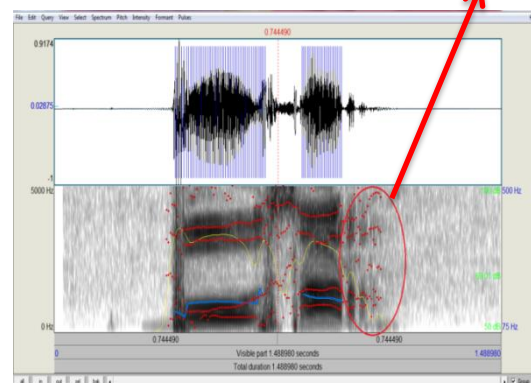
/r/



The alteration from phoneme /r/ to /r/ also happens in the last sequence. The word “big” in DDD is [bosar] and in DDB is [bosar] in fourth data. This happens from phoneme /r/ to become /r/. It can be observed in the following spectrograms.

Praat Spectrogram: [bosar]

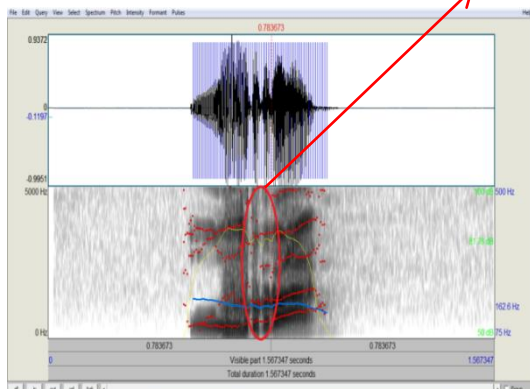
/r/



The change also happens in the second sequence, such as ‘people’ in DDD is [uraŋ] and [uraŋ] in DDB. This changes from phoneme /r/ to /r/. It can be observed from the following spectrograms.

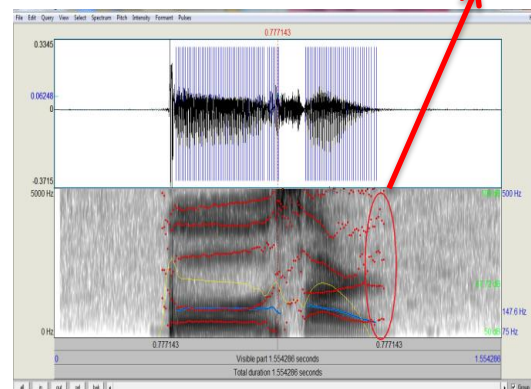
Praat Spectrogram: [uraŋ]

/r/



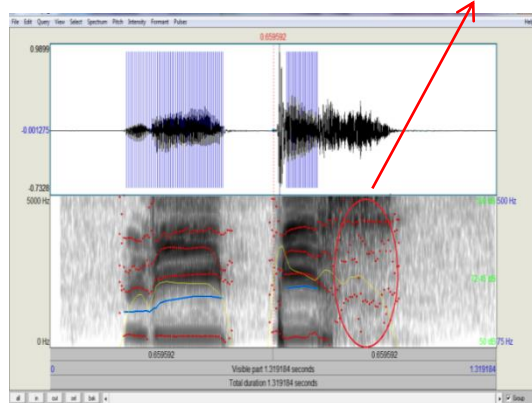
Praat Spectrogram: [bosar]

/r/

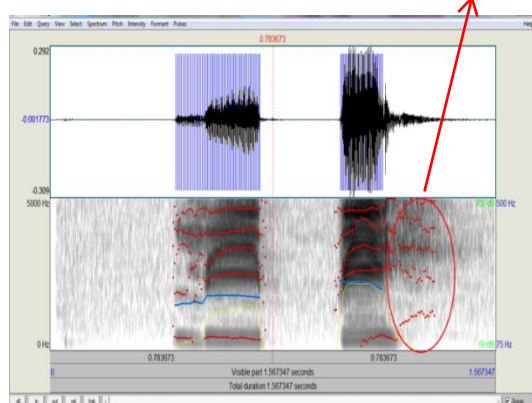


The alteration of phoneme /s/ into /h/ does not only happen in the first syllable but also last syllable, for example on first gloss [lipis] becomes [lipih] in third data. The sequence of alteration is in the previous sequence. It can be said that phoneme /h/ is one of the particular characteristics of DDB where they change phoneme /s/ into /h/ even when they speak the Indonesian words. The spectrogram of these words also shows that the turbulence of phoneme /s/ is stronger than phoneme /h/. It can be observed in the following PRAAT spectrogram between [lipis] and [lipih].

Praat Spectrogram:[lipis]



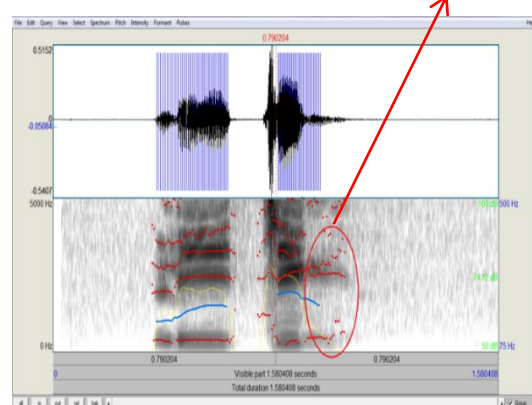
Praat Spectrogram:[lipih]



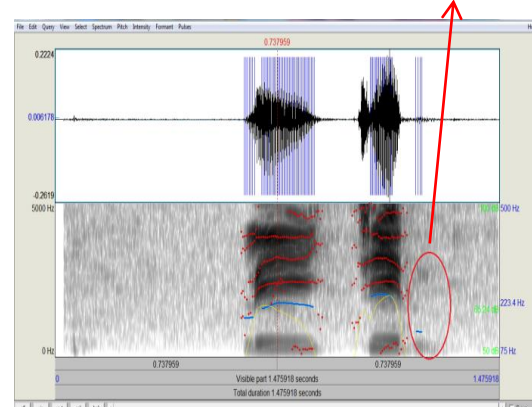
The alteration also happens from phoneme /ŋ/ into /n/. The phoneme /ŋ/ is a voiced velar nasal consonant and /n/ is a voiced alveolar nasal consonant. The nasal sounds are affected by the vowel sound where the vowel sound is raised when it meets the consonant

/ŋ/ in the last s. The sound wave showed an upward direction whose F1 is 491 Hz, and F2 is 2373 Hz. On the other hand, the vowel sound is leveled if it meets the consonant /n/ in the last syllable and sound wave showed a downward slope whose F1 2324 Hz is and F2 is 2381 Hz. It can be observed in the following PRAAT spectrograms.

Praat Spectrogram: [licin]

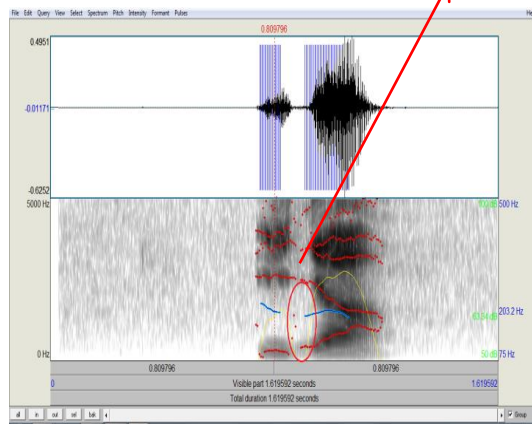


Praat Spectrogram: [licin]

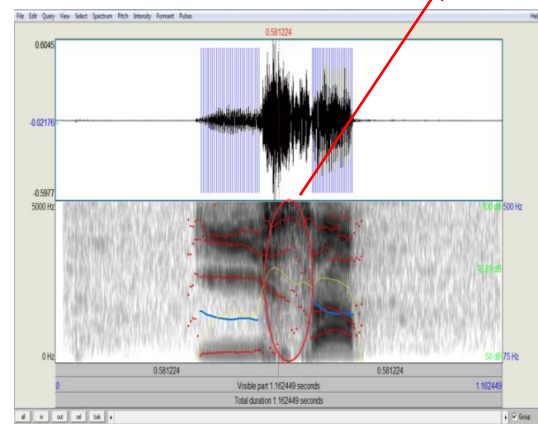


The alteration of consonant sound on last syllable happens on phoneme /ŋ/ in word [iŋa] becomes /j/ in [ija]. The phoneme /ŋ/ as voiced palatal nasal consonant and /j/ as voiced palatal glides consonant. The nasal sounds affect the surrounding vowel sound. Therefore the sound /i/ is raised in [iŋa]. But in [ija], the phoneme /j/ has similar formant pattern like /i/ where the phoneme /j/ is semi-vowel. This can be observed at the following PRAAT spectrograms.

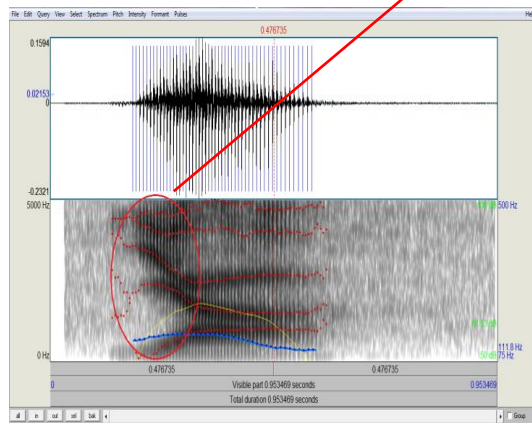
Praat Picture: [jna]



Praat Spectrogram: [isap]



Praat Picture: [ija]



Praat Spectrogram: [insap]

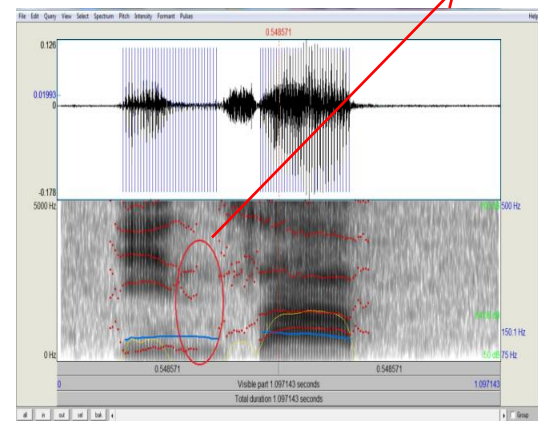


Table 5. The consonant insertion in the first syllable

WORD	DDD	DDB
Suck	[isap]	[insap]

The insertion of consonant happens in the first syllable where there is insertion of phoneme /n/ in the word. The phoneme /n/ is voiced alveolar nasal consonant. It can be observed from the spectrograms between [isap] and [insap].

DISCUSSION

In the words of Dayak Desa language spoken by the speaker of DDD and DDB, there is a variation of phonology in usage. This study confirms the finding of the previous study that a phonological variation happens on both vowel and consonant (Zulaeha, 2010). The variation pertaining to vowel consists of raising the vowel sound in the closed syllable: /ε~i/, and raising the vowel sound in the open syllable: /ε~ə/. As for consonant, the variation is in the form of alteration in the first syllable: /s/~h/, alteration in the last syllable: /s~h/, /ŋ~n/, /r~r/ and

sound: /ŋ~j/, and the consonant insertion in the first syllable: /Ø~n/.

The research also supports the finding of Tanco (2014) that there is the division of Dayak Desa language based on the sub-dialect. It can be differentiated phonologically.

CONCLUSIONS AND SUGGESTIONS

The study concludes there are thirty-nine words from 200 Swadesh vocabularies showing the phonological differences between sub-dialects of DDD and DDB. They contain vowel variation and consonant variation. The differences in some phonemes become a special characteristic for DDB. Those are the alterations exemplified by the phoneme /r/ of DDD which changes into /r/ in DDB. There are twentytwo data showed the consonant variation of /r/.

Then, phoneme /s/ in the first syllable or in the last syllable of sub-dialect of DDD changed into phoneme /h/ of sub-dialect DDB. There are eleven data showing the alteration of phoneme /s/ of DDD into phoneme /h/ of DDB in the first syllable. There is one datum showing the alteration of phoneme /s/ of DDD into phoneme /h/ of DDB in the last syllable. For DDB, phoneme /h/ is not only spoken when using their local language but also when they borrow words from other languages. For example: [səkolah] (school) ~ [həkolah]. Whereas, the other data did not show many changes. Each of them only showed one data.

The result of the study showed the phonological differences of sub-dialect of DDD and DDB tend to happen in the consonant than vowel. Those differences are evident in the sounds /r~r/, /s~h/, /ŋ~n/, /Ø~n/, and /ŋ~j/.

As explained in the introduction, the previous research about Dayak Desa language was only concerned on the division of the language (Tanco, 2014). This research can provide initial information about Dayak Desa language, particularly in term of language vari-

ation, for the next research on this topic. This research also serves as initial data for the effort of documenting Dayak Desa language. However, this research only used two hundreds of Swadesh vocabularies to find out the phonological differences between two sub-dialects. It is suggested that the next researchers use a more extensive range of vocabularies of both sub-dialects.

On the other hand, many aspects of Dayak Desa language can be discovered. If this study only focuses on one phonological differences between DDD and DDB. The next researchers can investigate the different fields, such as the lexical differences, semantic differences, onomasiological differences, semasiological differences, morphological differences, and not to mention the social aspect of the differences. Further research on Dayak Desa language can also be done to find out the differences among sub-dialects of Dayak Desa Meranggau, Dayak Desa Ulu and Dayak Desa Semalak. The researchers assume that by adopting the multidisciplinary approach, other findings and discussion about Dayak Desa language can serve as additional references about Dayak Desa language.

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