Lire Journal (Journal of Linguistics and Literature)
https://lirejournal.ubb.ac.id/index.php/LRJ/index
P-ISSN: 2598-1803 E-ISSN: 2581-2130
Volume 7 Number 2 2023

PHONOTACTIC AND PHONOLOGICAL SYSTEM IN KEMPO AND S>H KOLANG SUBDIALECTS

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ARTICLE INFO
Received: 04-08-2023
Accepted: 26-09-2023
Published: 12-10-2023
Volume: 7
Issue: 2
DOI:
https://doi.org/10.33019/lire.v6i2.215
KEYWORDS

Kempo; Kolang; Manggarai; Phonological Systems; Phonotactics.

ABSTRACT

This study explores the phonological system in the Kempo subdialect (MSdK) and S>H Kolang subdialect (MSdS>H) in West Manggarai Regency. The study was conducted at nine survey sites by interviewing 200 vocabularies compiled by Swadesh. I analyzed the data by comparing the phonological systems between the two subdialects and formulating the possibilities of their occurrence in the word. The results show that the two subdialects have slightly different phonological systems. They have a different inventory of vowel phonemes: 15 consonant sounds in MSdK and 16 consonant sounds in MSdS>H. This study also found three non-pulmonic consonant phonemes in the two subdialects: bilabial /ɓ/, Alveolar /ɗ/, and Velar /ɠ/. In the case of the two subdialects, the non-pulmonic consonant phonemes have unique characteristics: (1) appearing in the initial and middle positions of words, making it impossible for three pulmonic consonants (i.e., consonants /b/, /d/, and /g/) to appear in the initial position. The existence of the three consonant phonemes only appears when at the beginning of the word, it is preceded by another consonant forming a cluster and located on the first syllable (i.e., /mb/, /nd/, and /ŋg/). The two subdialects also have a relatively similar inventory of vocal phonemes: 6 vowel phonemes. Diphthongs are almost identical between the two subdialects, 7 diphthongs which only appear in mono-syllable words and are located at the end of words. In contrast, two additional diphthongs in MSdS>H appear in two-syllable words and the middle position of the word.

1. INTRODUCTION

Manggarai language is one of the languages spoken on the island of West Flores (Wolff, 2010, p. 547), along with other languages such as the Komodo language on Komodo island and the Rembong language in Ngada Regency (Fernandez, 1989, p. 4). The Manggarai language is classified into the Central Malayo-Polynesian (CMP) group, which consists of languages in NTT, Timor-Timor, and Maluku (Blust, 1978). In more detail, the Manggarai language is part of the West Flores language group, including the Rembong and Komodo languages (Fernandez, 1996). The grouping carried out by Fernandez was based on cognate calculations, which showed that the Manggarai, Rembong, and Komodo languages had a high percentage of cognates when compared to other languages in Flores so that these three languages formed the MRK group (i.e., Manggarai, Rembong, Komodo). Another characteristic of the Manggarai language is that it is a language with no derivational system, which means it does not have affixes (Verheijen,1967); isolated language,

only has free morphemes (Mangga, 2020); and has an SVO structure or known as head-initial language (Arka et al., 2014).

Manggarai language, according to the records of the Language Development and Maintenance Agency, is one of the regional languages in Indonesia that needs to be revitalized. The languages belonging to the group that must be revitalized consider the vulnerability of languages to extinction. The young generation's understanding of language and cultural practices is increasingly being displaced along with the rapid spread of other cultures that are more dominant through technology, such as social media. Their treasury of Manggarai language vocabulary is also decreasing compared to previous generations. Thus, in addition to language revitalization, documentation of the Manggarai language is also needed to maintain the existence of the Manggarai language so that it is maintained and studied in the future.

Several previous linguists have documented the Manggarai language in all its aspects, from phonological to semantic aspects, and the use of language concerning the culture being practiced (anthropology and ethnology). The most important of the many linguists include Burger (1946), who described the grammar of Manggarai, and Verheijen (1967-1970), who documented the results of his research in the Manggarai-Indonesian dictionary (Blust, 2013). However, when considering developments in technology and their impact on the development of the Manggarai language, it is necessary to review the grammar of Manggarai in the current context of Manggarai society. This study aims to describe the phonetactical and phonological systems of the Manggarai language in two subdialects spoken in several areas in West Manggarai Regency. In this district, some people speak the Kempo subdialect (MSdK) and the S>H subdialect (MSdS>H), whose documentation still needs to be fully completed.

This study aims to describe more deeply how the differences in the inventory and distribution of phonemes can differ between the Kempo subdialect (MSdK) and the S>H Kolang (MSdS>H) subdialect in West Manggarai Regency. The two subdialects are part of the West Manggarai dialect, according to the classification carried out by Verheijen (1967). Kempo was generally used to refer to the *hamente* or *kedaluan* system in the 1990s. The term Kempo as yet formerly refers to the area where the Manggarai sub-dialect is spoken, in Sano Nggoang and Mbeliling, then known as the Kempo sub-dialect. The S>H subdialect is called that because every [s] sound in the standard Manggarai language becomes a [h] sound in many speech areas which are also commonly known as the Kolang subdialect. The Kolang subdialect is stigmatized as a subdialect that is considered harsh and quite different from the standard subdialect (i.e., the Rahong dialect is considered as the standard dialect for other variations of the Manggarai language). The Rahong dialect, the only dialect in the Manggarai district, is considered a dialect that is more important than the other dialects because it is used as a lingua franca in various sphere of life in the Manggarai community, as well as being a neutral dialect in the economic and cultural fields (Semiun et al., 2016). This sound correspondence is an example of the difference in phonological systems between MSdK and MSdS>H. Several sound differences were also found, which this study will further elaborate on.

The two variations have never been referred to as a dialect for the Manggarai language-speaking community in West Manggarai Regency. The term language or accent is often used to refer to the two variations, namely the Kempo and Kolang languages or sometimes referred to as

the Kempo and Kolang accents. This is in line with Hicks' explanation (1983) which states that "Though in addition to Manggarai proper the last-named "dialect" almost certainly includes language that may more aptly be regarded as languages in their own right." However, if looking at it from a linguistic perspective, language, dialect, and accent are three different things. Two entities are referred to as two languages if the speakers have a low level of mutual intelligibility (i.e., level of difficulty in understanding utterances in a particular dialect). The mutual intelligibility between speakers (Lauder, 2002, p. 38) can be a benchmark for determining whether these variations are two different languages or two dialects of the same language (Fernandez, 1996, p. 13). Conversely, dialects are considered part of the language (Lauder, 2002, p. 37). Language is a set of mutually understandable dialects (Chambers et al., 2004, p. 3).

Dialects is rather sub-standard, low-status, rural languages, more often associated with the language of the peasantry, the language of the workers, or other less prestigious groups. Dialects are also referred to as language spoken in parts of the world that are isolated from civilization and do not have their written forms (Chambers et al., 2004, p. 3). As a general principle, if two languages are structurally similar (phonetically, morphologically, lexically, or syntactically), then the two languages are related; or in other words, if the two are sufficiently similar, then both are dialects of the same language (Feleke et al., 2020). Accents, however, refers to the phonological marking of the most prominent position in a word (Hyman, 2014, p. 56). In other words, the accent is the difference in emphasis on vocabulary pronunciation. It is, thus, clear that dialect is related to segmental sound, while accent is more related to prosodic or suprasegmental problems. Segments or fonts are sounds used in language, namely consonant sounds (C) and vowels (V). Consonant sounds are produced by a significant narrowing process in the vocal tract that blocks air passage out of the mouth. Meanwhile, vowel sounds are the opposite; there is no constriction, so air flowing out of the mouth is relatively free, resulting in a loud and robust sound.

2. LITERATURE REVIEW

Only a few recent research has highlighted the phonological system of the Manggarai language variations in the West Manggarai Regency. However, the following studies are worth examining for comparison. In a study entitled “Phonetic and Phonotactic Analysis of Manggarai Language”, Karjo (2021) highlights the phonetic structure of the Manggarai language and concludes that the Manggarai language has five places of articulation, such as bilabial, alveolar, palatal, velar and glottal, and five manners of articulation: plosive, fricative, nasal, semivowel and approximant. Karjo also explained that the two pre-nasals most commonly appearing in the Manggarai language are [nt] and [mb]. Meanwhile, Eduard (2011) only highlights (MSdS>H) and states that the subdialect has 18 consonant sounds and six consonant clusters, namely /mp/, /mb/, /ns/, nt/, ŋk/ and /ŋg/. In addition, a study of the Manggarai language phoneme inventory conducted by Burgers (1946) and Mustika (in Karjo, 2021, p. 79) showed different results. Burgers found 6 vowels and 26 consonants, while Mustika (2002) found 6 vowels and 25 consonants. These two studies differ not only in the inventory of phonemes but, more importantly, in the description of phoneme composition. According to Eduard et al. (2011), these two studies needed more information about the segmentation and classification of consonant phonemes and clusters. He concluded that the Manggarai language has 18 consonants, and the phonetic realization consists of 22 consonant

sounds. By Maddieson's calculations (in Song, 2018, p. 204), thus, Manggarai language can be grouped into languages with a small consonant inventory size.

According to a report by Blust (2013), the Manggarai language has an inventory of 26 consonant phonemes and 6 vowel phonemes. Verheijen (1967) noted that the sub-dialect of the Manggarai language in the West Manggarai Regency has labial and alveolar burst phonemes and other consonants from the standard language. In other words, the Manggarai language has 28 consonants and 6 vowels, almost reaching the phoneme inventory of the Komodo language across the islands (Blust, 2013).

These studies should have considered how phoneme inventories could differ across the subdialects discussed in this study. In addition, the existence of dilemmas and the results of different documentation between studies motivated me to dig deeper into the phonological system of the Manggarai language and see how this system can differ in the two subdialects. During the field research I conducted in several sub-districts in West Manggarai Regency, I observed a great deal of variation in the phonological variations of the 200 vocabularies I asked informants. The distribution of MSdK narratives can be found in diaspora in several sub-districts such as Mbeliling, Sano Nggoang, Komodo sub-districts, as well as several areas in Lembor, South Lembor, and Boleng sub-districts. The MSdS>H narrative diaspora can be found predominantly in several sub-districts, such as the sub-districts of Kuwus, Kuwus Barat, Pacar, Macang Pacar, Welak, Ndoso, and several areas in Lembor, South Lembor, and Boleng sub-districts. In other words, Lembor, South Lembor, and Boleng are three sub-districts where can be found two sub-dialect variations simultaneously. Based on these findings, I hypothesize that Kempo variations and S>H variations are at the level of sub-dialects and that differences in speech variations arise due to differences in phonological systems. The existence of non-pulmonic sounds, which are very dominant in both subdialects and have never been discussed and highlighted by previous linguists because they do not provide a fundamental difference between pulmonic and non-pulmonic sounds.

Thus, this research offers the most newfangled study, which examines in detail how the phonological systems in the two subdialects can be different. Language typology, more specifically concerning phonological typology, offers an appropriate analytical framework related to this problem. There is no significant difference between conducting phonological typology and phonological theory studies because they have the same analytical problem. The phonological typology study includes the following essential points (Maddieson, 2011, p. 534): first, examines the inventory of sounds, second, the sequencing of sounds (within syllable structure); and third, their occurrence in different structural positions (onset vs coda). Song (2018, 203) further elaborates that the first is related to the question, "What sounds are available in the world's languages?" This means that the question tries to discover which sounds each language must have and which are rare in world languages. The second point seems to discover how combinations of sounds can occur, in other words, which sounds can or cannot happen before or after which sounds. In contrast, the latter relates to the possibility of appearing in the structural position of a particular sound to form a syllable both at the coda and onset positions.

In Song's book phonological typology (2018), he reviews the research of Maddieson (2011) and Hyman (2008), which states that almost all language phonological systems in the world have voiceless plosives such as bilabial, coronal, and velar at the place of articulation. In addition to

plosives, palatal nasal /ɲ/, palato-alveolar affricate /ʧ/, fricative /s/, labio-dental fricative /f/, a palato-alveolar sibilant fricative /ʃ/, voiced coronal lateral approximant /l/ and a rhotic /r/, voiced palatal /j/, labial-velar approximants /w/, the glottal plosive /ʔ/, and the voiceless approximant /h/ are also very common in world languages analyzed by Maddieson (2011). As for vowels, Song (2018, p. 208) cites that of the 564 languages studied by Maddieson, there are 287 languages in the world that have 5-6 vowels (average), 184 languages that have 7-14 vowels (large), and 93 languages who have a vowel inventory of 2-4 vowels (small).

Considering this explanation, it is necessary to conduct tests regarding the inventory and distribution of phonemes in the Manggarai language, especially in MSdK and MSdS>H. This needs to be done to find out and identify whether the sub-dialects of the Manggarai language in the West Manggarai Regency have different or the same phonological systems. It is, therefore, necessary to consider the steps and methods in data collection and analysis as described in the methodology section below.

3. METHODOLOGY

As previously mentioned, the phonological typology theory suggested by Song (2018) is applied in this study as an analytical tool. In the data collection process, I determined the criteria for informants and sample survey sites representative of this study. Making direct contact with native speakers is the primary method of collecting data in linguistics, so the data obtained in this way is referred to as primary data (Song, 2018). I selected one informant at each survey site using the NORMs criteria (nonmobile, older, rural males) promoted by Chambers et al. (2004:29), which means that the informants, and preferably their parents, are native to the area, are smallholders (or at least join a farming community); and must be at least sixty (and most must be at least a decade older). Lauder (1993) explained that the ideal age for an informant is middle age, between 40-50 years, who are considered capable of understanding the language and dialect but have not yet entered a senile age. The educational status of informants is not suggested in Lauder (1993), but the main thing is that informants should be independent of science. The point is that informants should only pursue higher education after high school. I selected one informant in each village consisting of 9 male informants and 1 female informant whose ages ranged from 40-50. These informants included MK (53) in Watu Wangka, TM (52) in Lale, LM (50) in Watu Waja, DU (54) in Mbuit, SH (55) in Tentang, Ra (48) in Siru, GH (59) in West Golo Lajang, YB (54) in Sano Nggoang, SN (51) in Poco Rutang, AK (54) in Benteng Dewa.

Jeszenszky et al. (2021: 3) explain that according to the law of spatial autocorrelation, closer locations are expected to show similar forms, or in other words, geographically separated dialects/subdialects are less identical than adjacent dialects (Chambers et al., 2004). Research in the observation area is quantitatively carried out by calculating the distance between the observation areas. According to Ayatrohaedi (1978), rural areas are preferred for conducting dialectological research because they still retain their old form compared to urban areas, which center on the economy and community mobility. The hamlet area, according to Ayatrohaedi (1978), must be an isolated area, both due to natural factors and due to clans, and is an area that is quite old. This study selected representative observation areas based on the linguistic differences found. I conducted face-to-face interviews with nine informants who are native speakers of the

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https://lirejournal.ubb.ac.id/index.php/LRJ/index
P-ISSN: 2598-1803 E-ISSN: 2581-2130
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language in nine observation areas, such as Watu Waja and Benteng Dewa in South Lembor districc, Siru and Poco Rutang in Lembor district, Lale in Welak district, West Golo Lajang in Pacar district, Sano Nggoang in Sano Nggoang district, Watu Wangka in Mbeliling district, and Mbuit in Boleng district.

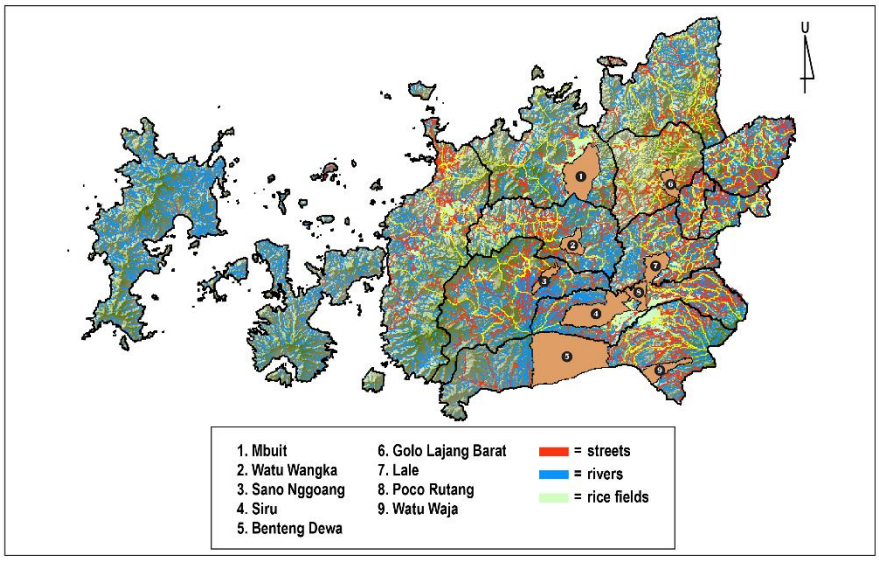

Figure 1. Maps of representative survey sites

I classify the observation areas of Benteng Dewa, Siru, Sano Nggoang, Mbuit, and Watu Wangka into MSdK narrative areas, while Watu Waja, Poco Rutang, Lale, and Golo Lajang Barat fall into MSdS>H. This division is based on discovering linguistic and extralinguistic features (intonation and rhyme) unique to each subdialect. I collected pronunciation variations of 200 vocabularies carried by Swadesh by recording them and transcribing the data using IPA (International Phonetic Alphabet). I am also guided by the Indonesian-Manggarai dictionary compiled by the STKIP Santu Paulus Ruteng language extension team (2018) and the Manggarai-Indonesian dictionary by Verheijen (1967). I took examples of everyday vocabulary in the two sub-dialects from these two references as comparison material. Translating into IPA format may influence future use of the text. Phonetic transcription is an appropriate method for documenting language variations and information about the culture of the people who use these varieties (Podesva et al., 2013, p. 235). With phonetic transcription, the collected data can be used as secondary data in subsequent studies. I then describe the findings in the field explicitly based on the differences in sound systems, which will be elaborated on in the results and discussion section below.

4. RESULTS AND DISCUSSION

4.1.Articulatory Phonetics in MSdK and MSdS>H

4.1.1. Pulmonic Sounds

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Pulmonic or pulmonic egressive is a familiar consonant sound produced by the outflow of air from the lungs accompanied by significant narrowing of the vocal tracts MSdK and MSdS>H. the inventory of vowel sounds in MSdK and MSdS>H is different; MSdK has as many as 15 consonant sounds, while MSdS>H has as many as 17 consonant sounds.

Table 1. Consonant phoneme inventory in MSdS>H

Pulmonic	Bilabial	Labiodental	Alveolar	Palatal	Velar	Glottal
Plosive	p b		t	ʤ	k g	ʔ
Nasal	m		n		ŋ	
Trill			r			
Tap or Flap						
Fricative		v	s		ɣ	h
Lat. Fricative						
Approximant						
Lat. Approx			l			

Table 2. Consonant phoneme inventory in MSdK

Pulmonic	Bilabial	Labiodental	Alveolar	Palatal	Velar	Glottal
Plosive	p b		t	ʤ	k g	ʔ
Nasal	m		n		ŋ	
Trill			r			
Tap or Flap						
Fricative		v	s			h
Lat. Fricative						
Approximant						
Lat. Approx			l			

The table below shows the distribution of consonant phonemes in the two subdialects. This also proves the opinion of Fernandez (1988, p. 191) who explains the possibility of the appearance of these phonemes in various word positions. He stated that the phonemes /b/, /d/, /g/, /ʤ/, and /ʧ/ cannot appear in the final position. Apart from that, the phonemes /b/, /d/. and /g/ can only appear in the middle position because the Manggarai language tends to use the implosive phonemes /ɓ/, /ɗ/, and /ɠ/. The glottal /ʔ/ does not appear in the initial position, but in the case of the MSdS>H subdialect, it can appear in the final position. this is in contrast to the glottal phoneme /h/ which cannot appear in the final position in both subdialects.

Table 3. Distribution of pulmonic sounds

Place of Articulation	Consonant Sound	Example in BM					
		Initial		Middle		End	
		Gloss	Transc.	Gloss	Transc.	Gloss	Transc.

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Bilabials	p	throw	[pəke]	thick	[kimpur]	fly	[lelap]
	b	-	-	talk	[tombo]	-	-
Labiodentals	m	rotten	[masu]	tongue	[ləma]	-	-
	v	stone	[vatu]	cloud	[rəvuŋ]	-	-
Alveolars	t	green	[taʔak]	sit	[lonto]	narrow	[keʔot]
	d	-	-	sing	[rindo]	-	-
	n	think	[nu:k]	cold	[mənəs]	-	-
	s	two	[sua]	rope	[vase]	navel	[putəs]
	l	walk	[lako]	kill	[mbəle]	hit	[ɓoɓol]
	r	husband	[rona]	sharp	[harat]	river	[ŋalor]
Velars	k	scratch	[kərok]	tail	[[iko]	ash	[ravuk]
	g	-	-	and, with	[agu]	-	-
	ŋ	teeth	ŋiʔis	stick	[ɗoŋkar]	moon	[vulaŋ]
	ɣ	sharp	[ɣarat]	egg	[ruɣa]	-	-
Palatals	ʧ	when	ʧəpisa	dog	[aʧu]	-	-
	ʤ	sew	[ʤaʔit]	tree	[puʔu hadʒu]	-	-
Glottal	ʔ	-	-	old	[tuʔa]	hunt	[vonoʔ]
	h	lice	[hutu]	egg	[ruha]	-	-

Combinations of consonant phonemes or clusters are also possible in the languages of the two subdialects. Fernandez (1989, p. 191) reports that the Manggarai language has several nasal consonant clusters, including /mp/, /mb/, /nt/, /nd/, /nc/, /nj/, and /ŋg/. From my observations of two sub-dialect variations of the Manggarai language in the Manggarai district, I found seven consonant clusters according to data obtained from 200 Swadesh wordlists which I used as a questionnaire. The following is an example of data showing the possibility of the emergence of clusters that are common in MSdK and MSdS>H.

Table 4. Clusters in MSdK and MSdS>H

Cluster	Meaning	Transcription
mb	kill	[mbəle]
	earthworm	[mbolek]
nt	star	[ntala]
	year	[ntauŋ]
nd	here	[ndoʔo]
	blunt	[ndeɠal]
ŋg	slippery	[ŋgəlek]
nc	jump down	[ncuar]
	stream	[ncaeŋ]
ndʒ	katydid	[ndʒieŋ]
	rowdy	[ndʒaor]
pl	fight	[plaŋ tau]

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4.1.2. Evaluation of pulmonic consonant sounds according to Fernandez (1988)

The statement stating that the voiced velar plosive [g] occurs only between two vowels needs to be re-examined because, in practice, this sound can appear in double consonants [ŋg] as in the example of gloss "slippery" [ŋgəlek], "wide" [ŋeŋga], and so on. Fernandez (1988) does not distinguish between voiced velar plosive [g] and voiced velar implosive [ɠ] sounds so that an example can validate the statement stating that the plosive [g] only occurs between two vowel sounds only in the gloss "and/with" [agu], and also may not appear in the initial position of the word because the implosive [ɠ] is more commonly used.

The sound of a glottal stop [ʔ] can indeed be lost when it is between two identical vowel phonemes in the bisyllabic morpheme, so the sound will change to a long vowel in the final position, as in the example, the gloss "here" [ndoʔo] can change to [ndo:] if glottal stop [ʔ] is omitted. However, if the position is in a different vowel phoneme, then the rule cannot be applied, such as the glottal stop [ʔ] in the gloss "head" [saʔi] in MSdK or [haʔi] in MSdS>H cannot be removed. Manggarai language, including the two subdialects discussed in this study, does not have a voiced labial–velar approximant [w] but a voiced labiodental fricative [v]. The sound that Fenandez (1988) is referring to may be an orthographic writing of the fricative [v]; the same thing is stated by Blust (2013) above, so the examples presented as the gloss "flower" should be written as [vela] not [wela].

4.1.3. Unique Sounds Changes Between MSdK and MSdS>H

Sound change assumes that every change is regular, or in other words, occurs in general and uniformly wherever the phonetic state in which the change occurs (Campbell, 2013, p. 15). The change in sound that is regular must occur every time the sound or sounds that are changing are found in circumstances or the environment that conditions the change. In addition to the regularity principal concept, it is also necessary to understand that sound change is classified according to whether they are unconditioned or conditioned (Campbell, 2013, p. 15). Unconditioned means that the sound change occurs in general and is independent of the phonetic context in which it occurs; that is, it is not dependent on or limited in any way by neighboring sounds. This explains that unconditioned sound change can modify a sound in all the contexts in which it occurs, regardless of what other sounds may be found in words containing the sound change: that is, the change occurs regardless of the phonological context in which the sound change may be found. Meanwhile, conditioned sound change occurs only in a particular context (when it depends on adjacent sounds, the position of sounds in words, or other grammatical aspects). Based on field observations, the following will describe several forms of regular and unconditioned sound change between MSdK and MSdS>H.

a. The sound [ɣ] in MSdS>H corresponds with the sound [h] in MSdK:

Table 5. Example of correspondence sound [s] > [h]

Position	Gloss	Transcription	
		MSdK	MSdS>H
Initial	you	[hau]	[ɣau]
	this	[hoʔo]	[ɣoʔo]
	that	[hitu]	[ɣitu]
Middle	egg	[ruha]	[ruɣa]

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	fight	[raha]	[raɣa]
	broken off	[ɓəhas]	[ɓəɣas]

b. The sound [h] in MSdS>H corresponds to the sound [s] in MSdK, or in other words, every word that contains the sound [s] in MSdK will change to [h] in MSdS>H.

Table 6. Example of correspondence sound [h] > [s]

Position	Gloss	Transcription	
		MSdK	MSdS>H
Initial	lake	[sano]	[hano]
	leaf	[sauŋ]	[hauŋ]
	hear	[seŋet]	[heŋet]
Middle	how many/much	[pisa]	[piha]
	big	[mese]	[mehe]
	stand	[həse]	[ɣəhe]
End	smoke	[nu:s]	[nu:h]
	cold	[ces]	[səh]
	teeth	[ŋiʔis]	[ŋeh]

c. The sound [s] in MSdS>H corresponds to the sound [ʧ] in MSdK; or other words, every word that contains the sound [ʧ] in MSdK changes to sound [s] in MSdS>H. In the Manggarai language, the affricative symbol [ʧ] indicates a voiceless postalveolar affricate sound.

Table 7. Example of correspondence sound [s] > [ʧ]

Position	Gloss	Transcription	
		MSdK	MSdS>H
Initial	what	[ʧoʔo]	[soʔo]
	when	[ʧəpisa]	[səpiha]
	dig	[ʧake]	[sake]
Middle	wet	[ɓaʧa]	[ɓasa]
	dog	[aʧu]	[asu]
	wash	[vaʧa]	[vasa]

d. The sound [k] in MSdK corresponds to the sound [ʔ] in MSdS>H, which only appears at the end of a word.

Table 8. Example of sound correspondence [k] > [ʔ]

Position	Gloss	Transcription	
		MSdK	MSdS>H
End	hunt	[vonok]	[vonoʔ]
	dust	[kəɓok]	[kəɓoʔ]
	scratch	[kərok]	[kəroʔ]

4.1.4. Non-pulmonic Sounds

Non-pulmonic sounds are consonant sounds made in another way (Fromkin et al., 2000, p. 512). Three non-pulmonic consonant sounds are clicks, voiced implosives, and (voiceless) ejectives. The MSdK and MSdS>H only have voiced implosives, which are consonant sounds produced when the larynx moves downward during the closing of a halt, thereby giving a unique, strong quality to the voice during a halt and, at the same time, increasing the size of the air voids in the vocal tract. The table below shows the three voiced implosives common in MSdK and MSdS>H. Implosive consonants are considered a standard and unique feature in the lesser Sundanese languages (e.g., Bimanese, Komodo, Ngadha, and Hawu). Verheijen (1967) noted that several dialects of the Manggarai language in West Flores have labial and alveolar implosives (Blust, 2013, p. 196).

4.1.4.1. Voiced Bilabial Implosive [ɓ]

During my field investigation, I discovered that speakers of the Manggarai language in West Manggarai Regency possess two distinct bilabial sounds. Bilabials are sounds created by bringing the lips together (i.e., place of articulation) and blocking airflow in the vocal tract (i.e., manner of articulation). MSdK and MSdS>H distinguish between voiced bilabial implosive [ɓ] and voiced bilabial plosive [b]. Quoting from the University of British Columbia, the sound [ɓ] has the manner of articulation of this sound as follows: 1) Makes a closure between the articulator and the point of articulation. 2) When the glottis vibrates (i.e., sound occurs), move the larynx down. 3) Remove the flap made in stage 1, which allows air to flow into the mouth. In the Manggarai language, this sound generally appears in the initial and middle positions of the world, as shown in the table below.

Table 9. Voiced bilabial implosive [ɓ] found within words

Position	Gloss	Transcription
Initial	wind	[ɓuru]
	recline	[ɓirit]
	wet	[ɓaʧa]
	stomach	[ɓara]
	inside	[ɓone mai]
Middle	play	[laɓar]
	unplug	[kəɓut]

Meanwhile, voiced bilabial plosive [b] has the following characteristics: 1) voiced, vibrates when articulated; 2) bilabial, pronounced by bringing two lips together; and 3) plosive, airflow is completely blocked. The difference from the first sound above is that it is pulmonic, articulated by pushing air only by the intercostal muscles and the diaphragm, as with most sounds. This type of sound appears only in the case of a double consonant phoneme preceded by a voiced bilabial nasal [m].

Table 10. The possible emersion of voiced bilabial plosive [b] within words

Position	Gloss	Transcription
Middle	kill	[mbəle]
	talk	[tombo]
	worm	[mbolek]
	Some Indonesian loanwords:	
Initial	book	[buku]

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P-ISSN: 2598-1803 E-ISSN: 2581-2130
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	flower	[buŋa]

The two Indonesian loanwords examples in the table above show no difference or adaptation of pronunciation in the Manggarai language. When I asked for the translation of the two vocabularies, the informant, without confusion and difficulty, found the equivalent in the Manggarai language. I observe that every foreign term adopted in the absence of it appears to be pronounced the same without any change. Thus, voiced bilabial plosive [b] can occur at the beginning of a word in both subdialects only if the word is a loan word.

4.1.4.2. Voiced alveolar implosive [ɗ]

Whether it is MSdK or MSdS>H, both are more likely to produce voiced alveolar implosive [ɗ] than voiced alveolar plosive [d] in the initial and mid-word positions. I believe that previous researchers did not highlight or differentiate the two sounds, even though the two sounds are very much different. An implosive voiced alveolar sound [ɗ] is produced at the tip of the tongue, which is placed on the back of the upper front teeth or alveolar ridge. The University of British Columbia states that the way to produce this sound is to make a closure between the articulators and the point of articulation, then when the glottis vibrates (that is, sound occurs), then move the larynx down. Next, remove the flap made in the first step, which allows air to flow into the mouth.

Table 11. The occurrence of voiced alveolar implosive [ɗ] within words

Position	Gloss	Transcription
Initial	good	[ɗiʔa]
	plenty	[ɗo:]
	bad	[ɗaʔat]
	blood	[ɗara]
	near	[ɗini]
Middle	far	[taɗaŋ]
	grow	[toɗo]
	accompany	[paɗoŋ]
	take-off (*i.e.*, attire)	[kəɗok]
	repair	[ɗeɗek]

However, voiced alveolar plosive [d] only appears in the Manggarai language when the alveolar nasal sound [n] forms a double sound or cluster [nd], as shown in the examples below.

Table 12. The possible emersion of voiced alveolar plosive [d] within words

Position	Gloss	Transcription
Initial	here	[ndoʔo]
	red	[ndereŋ]
	blunt	[ndəɓul] [ndeɠal]
Middle	mother	[ənde]
	however, but	[landiŋ]
	talk	[nunduk]

The two Indonesian loanwords examples in the table above show no difference or adaptation of pronunciation in the Manggarai language. When I asked for the translation of the two vocabularies, the informant, without confusion and difficulty, found the equivalent in the

Manggarai language. Every foreign term adopted without it appears to be pronounced the same without any change. Thus, voiced bilabial plosive [b] can occur at the beginning of a word in both subdialects only if the word is a loan word.

4.1.4.3. Voiced velar implosive [ɠ]

Another unique feature of the Manggarai language is that this language distinguishes two types of velar sounds: voiced velar implosive [ɠ] and voiced velar plosive [g]. The first sound seems dominant to appear in the initial and middle position of the word, while the second sound appears in words preceded by a voiced velar nasal [ŋ] to form a double consonant or cluster [ŋg]. Voiced velar implosive [ɠ] has the following characteristics: (1) occlusive, which means it is produced by blocking airflow in the vocal tract; (2) implosive (glottalic ingressive), which means it is produced by drawing in air by pumping the glottis downwards; (3) velar, which means it articulates with the back of the tongue (dorsum) on the soft palate; and (4) voiced, which means the vocal cords vibrate during articulation. The following are examples of data on the discovery of voiced velar implosive [ɠ] in the Manggarai language vocabulary.

Table 13. Voiced velar implosive [ɠ] found within words

Position	Gloss	Transcription
Initial	fat	[ɠemok]
	mountain	[ɠolo]
	wait	[ɠereŋ]
Middle	split (i.e., with a machete)	[teɠak]
	blunt	[ndeɠal]
	cut off	[teɠak]

Meanwhile, voiced velar plosive [g] only appears in a word when it is preceded by a voiced velar nasal [ŋ], thus forming a double consonant [ŋg]. However, it should be noted that there are exceptions in some instances where voiced velar plosive [g] can also appear without being followed by a nasal [ŋ] sound, as shown below.

Table 14. Possible emersion of voiced velar plosive [g] within words

Position	Gloss	Transcription
Penultima	hit	[oŋga]
	indifferent	[ɠaŋga]
	wide	[ŋeŋga]
	slippery	[ŋgəlek]
Antepenultima	stand	[ŋgehe]
	big	[ŋgeɓak]

4.1.5. Vowels Inventory in MSdK and MSdS>H

Several linguists in previous studies have identified that the Manggarai language has six vowel phonemes, which makes it included in the language group with an inventory of average vowel phonemes with 5-6 vowels. The vowel sound segments in the MSdK and MSdS>H subdialects also only identified six vowel sounds. Three conventional parameters must be understood for

Lire Journal (Journal of Linguistics and Literature)
https://lirejournal.ubb.ac.id/index.php/LRJ/index
P-ISSN: 2598-1803 E-ISSN: 2581-2130
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vowel description: height, backness, and lip-rounding (Maddieson, 1984, p. 123). Vowels can be classified into five different heights: high, higher mid, mid, lower mid, or low, or the last four heights can be referred to as higher and lower mid positions. Following are the six vowels in MSdK and MSdS>H, which have the same inventory.

Table 15. vowels inventory in MSdK and MSdS>H

	Front	Central	Back
Close	i		u
Close-Mid	e	ə	o
Open	a		

All vowel phonemes in the Manggarai language can appear in all word positions, except the phoneme /ə/ which cannot appear in the final position. The table below presents the distribution of vowel phonemes within word positions.

Table 16. Vowels distribution within words

Position	Vowel	Initial		Middle		End	
		Gloss	Transc.	Gloss	Transc.	Gloss	Transc.
Front	i	tail	[iko]	black	[mitəŋ]	heart	[ati]
	e	easy	[emoŋ]	float	[lenteŋ]	wing	[ləɓe]
	a	sky	[avaŋ]	stick	[ɗoŋkar]	husband	[rona]
Central	ə	stop	[əmo]	throw	[pəke]	-	-
Back	u	garden	[uma]	Stomach	[tuka]	nail	[vuku]
	o	inside	[one mai]	pull	[poto]	walk	[lako]

Combinations of vowel phonemes or diphthongs also exist in both dialects. This table displays combinations of vocal phonemes in the Manggarai language in the two subdialects.

Table 17. Diphthongs appear only in mono-syllabic

Position	Diphthongs	End	
		Gloss	Transcription
High Vowels	ia	where	[nia wan]
	ie	night	[vie]
	eo	left	[leo]
	ae	know	[ɓae]
	au	In (location)	[lau]
	ua	fruit	[vua]
Mid Vowels	oe	small	[koe]

The table above shows that many diphthongs in the two subdialects only appear in monosyllable words and only in word ending positions. While in the example below, there is also a diphthong that appears in the middle of a word and consists of two syllables.

Table 18. Diphthongs found only in MSdS>H

Position	Diphthongs	Middle	
		Gloss	Transcription
High Vowels	iə	sand	[laiəŋ]
	ea	red	[ɗereaŋ]

5. CONCLUSION

In this research, I describe the phonological system of the Manggarai language, especially in the two subdialects of the West Manggarai Regency, the MSdK and MSdS>H subdialects. I discussed contrasting phoneme inventories and their distribution in each subdialect. Apart from that, I also parsed the unique sound changes in the form of sound correspondence between the two subdialects and evaluate the distribution of pulmonic consonant sounds according to Fernandez (1988) in the two subdialects. The results show that the two subdialects have different phoneme inventories. Both dialects have a different inventory of pulmonic consonant phonemes; MSdK has as many as 15 consonant sounds, while MSdS>H has as many as 17 consonant sounds, and 3 non-pulmonic phonemes that are the same in both dialects. The vowel phonemes are relatively the same, as many as 6 vowel phonemes. Meanwhile, phoneme combinations also exist in the two subdialects, in which both have the same 7 consonant double phonemes, whereas the diphthongs are relatively different; MSdK has 7 diphthongs and MSdS>H has 9 diphthongs. Thus, the two subdialects are included in the language group or those with an average inventory of phonemes. According to Maddieson's opinion (Song, 2018, p. 204), the inventory of typical consonants in the world's languages is below 20, so it is considered an average phoneme inventory

Almost all pulmonic sounds can occur in the middle of a word. However, some sounds seem to be absent in the last position, such as the bilabial /b/ and /m/, labiodental /v/, alveolar /d/ and /n/, velar /ɣ/, palatal/ʧ/ and /ʤ /, glottal /h/, and velar /g/. In addition, several pulmonic sounds also do not appear in the initial position, such as bilabial /ɓ/, alveolar /ɗ/, and velar /ɠ/, and tend to be filled by three non-pulmonic consonant phonemes, bilabial /ɓ/, alveolar /ɗ/, and Velar /ɠ/. Several sound correspondences between the two subdialects are from MSdS>H to MSdK: [ɣ] and [s], [h] and [s], [s] and [ʧ], [ʔ] and [k]. This causes the difference in the inventory of phonemes in the two subdialects. Vowel, on the other hand, is included in the average inventory. The combination of vowel phonemes (diphthongs) appears more in word-ending and mono-syllabic positions. Two additional diphthongs are characteristic that seem in MSdS>H, as shown in Table 24 above.

This present study provides a deeper insight that specifically highlights the differences in the phonological systems of the two subdialects. In addition, I also evaluated the phoneme inventory of the Mangarai language conducted by Fernadez (1989) on two subdialects being investigated in this research. I found that several differences do not correspond to the reality of the Manggarai language spoken in the two sub-dialects, including plosive [g] does not only appear between the two vowels, but also after a consonant, and the absence of the approximant [w] which turns out to be an orthograph of the fricative [v]. This comprehensive analysis of the phonological system is expected to be a reference for subsequent research experts who wish to dig deeper into other

matters that have not been touched upon before, such as a comparison of the phonological system of the Manggarai language subdialect in the Manggarai district with other subdialects in the other two communities that predominantly speak Manggarai as their first language.

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