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| RESEARCH ARTICLE

Phonological Features of Manobo Spoken in Davao Occidental

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| ABSTRACT
The study provides a description of the phonological features projected in Manobo, which is spoken in Jose Abad Santos, Davao Occidental, as an effort to monitor the status and vitality of the language. In eliciting the segmental and suprasegmental features, the respondents translated the questionnaire, a pre-determined word list of Cebuano vocabularies and sentences, and it was documented through audio-recording. The transcribed words were rated through International Phonetic Alphabet symbols. For the suprasegmental features, those focused on length, stress, and intonation in statement form and in answering WH/Yes-No questions. The study identified a total of 42 phonemic units in the Manobo language's phonetic code: nine (9) vocoids, four (4) vocoid chains, 15 contoids, and four (4) contoid-clusters, and 10 supra-segmental phonemes. Also, factors such as age somewhat affect their phonological features. Native speakers were observed borrowing words from the dominant languages –Bisaya, Tagalog, and English, clipping some of the native words and code-switching to other languages when speaking. Manobo language is still used in home and community; however, it is not being sustained in the formal institution. Finally, the paper echoes the call for future studies of Manobo morphophonemic features of various Manobo speakers.

| KEYWORDS

Phonological features, Manobo, Davao Occidental, vitality of language, segmental, suprasegmental

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1. Introduction

Manobo language belongs to the Malayo-Polynesian branch of the Austronesian linguistic family, and it is one of the 170 languages spoken in the Philippines. In 2018, there were approximately 375,870 Manobo speakers distributed throughout the country (Eberhard, Simons, & Fennig, 2018; Simons & Fennig, 2017) and the majority live in the regions where it is their native tongue, namely: Agusan, Surigao, North Cotabato and Davao. Manobos have heavily migrated to Agusan del Norte, Agusan del Sur, Surigao del Sur, North Cotabato, Southern parts of Davao del Sur and Sarangani (DuBois, 1976, 2016; Ethnic Group of the Philippines, 2018; Gelacio, Kwok Loong, & Schumacher, 2000; Havana, Gonsalez, & Schumacher, 1978; Otanes & Hale, 1988; SIL International, 2018).

In Jose Abad Santos, the people speak multiple languages such as Bisaya, B'laan, Sangil and Manobo. These languages, however, embody Tagalog and foreign (English or Spanish) sounds [a, e, u, f, o, ng] in their phonetic code (DuBois, 1976). These sounds are in the phonetic systems of Bisaya and B'laan languages. Also, borrowing of words, such as Tagalog words and bilingualism, are visible in their speech repertoire. This means to say that these linguistic phenomena have significant implications for Manobo morphophonological structure. According to Arto Anttila (2018), language is a system that maps meaning to forms; however, mapping is not always meant that one meaning corresponds to one form because there is variation. This variation can be traced to the variability of both the segments and at the prosodic level, which can affect different features of the phonological system, such as the composition of the phonemes and allophones, phonotactic patterning of phonemes, and their lexical distribution in the language system (Aviles, 2008; Chomsky,1965; Chomsky & Hale, 1968; Ohala, 2019;) In this case, the reason for this phenomenon must be traced back to recent and rapid standardization and to the prolonged contact with other languages (Vietti, 2019). Variation in language phonology can be traced back to two dimensions: geographic and social contacts, in which long-term

contact with other languages can consequently lead to outcomes such as bilingual mixed languages and 'indigenized' varieties of the colonizer's language (Thomason, 2011; Thomason & Kaufman, 1988; Winford, 2012).

Many researchers have studied the morphological and grammatical structures of the Manobo language spoken in some parts of Mindanao. However, most studies on the Manobo language were conducted decades ago, and these studies were limited only to classifying and describing the existing phonemic units of the Manobo language spoken in Agusan, Cotabato and Sarangani (DuBois, 1976; Gelacio, Kwook Long, & Schumacher, 2000). Like all languages, the Manobo language and the speakers of the language face various challenges in the light of the contemporary world where young people are greatly exposed to quad media. Ronald Wardhaugh (2006) maintains that language usage is changing rapidly because of continued contact and exposure to other languages. These inevitable circumstances could result in language change, which could also lead to language extinction (Alvanoudi, 2018; Brighton, Kirby, & Smith, 2005; Haspelmath, 2009;). Hence, constant monitoring and efforts for language preservation are important quests to maintain the developing language and save the dying one. The study aimed to describe and classify the phonetic and phonemic features of Manobo spoken in Jose Abad Santos, Davao Occidental.

2. Literature Review

2.1 Phonological Grammar

Noam Chomsky (1965) regards grammar as a system of rules that generates those combinations of words that form grammatical sentences in each language. Grammar involves morphological and syntactic structures on which some phonetic processes depend their interpretation on them. In language, it pertains to grammar, the system of rules that specifies the sounds and meaning correspondence. It is this system of rules that enables a person to interpret and produce sentences that he has never encountered even though he knows a language perfectly and has little knowledge of the rules that he uses constantly. Thus, grammar is an innate ability of a human to produce, understand and learn his language.

According to Olaya (1967), phonological grammar refers to the system of rules characterizing the native speaker-hearer's knowledge of the phonemic code of his language and his use of that code in actual speech situations. In a language community, the knowledge the people possess about the language or languages that they speak is abstract. This knowledge is shared by both the individual and people who speak the language. Therefore, communication among people who speak the same language is possible because they share such knowledge - knowledge of rules and principles, the sounds, words, and sentences, not just the knowledge of specific sounds, words and sentences.

Additionally, Chomsky (1965) believed that meaningful discoveries about a certain language mean distinguishing the characteristics, principles and rules that speakers follow in constructing and interpreting sentences, which is also called universal grammar, from the least important matter, such as how individual speaker use specific utterances in actual speech situations. Basically, studying the phonology of a certain language will dive into determining its descriptions and characteristics, particularly the phonemic units: the segmental and supra-segmental.

The phoneme is the smallest unit of language that distinguishes meaning. For example, in English, /k/, /u:/, /l/ 'cool' /ku:l/ is called the segmental phoneme, realized by vocalic and consonantal segments of words that occur in a certain order relative to another. Stress, pitch, intonation and juncture are supra-segmental units. Stress is an effort in utterance given to a syllable of speech resulting in relative loudness. It also serves to distinguish meaning, such as

ke.'let/ 'close together'	tu.'gek/ 'to brace, prop'
kelét/ 'species of bird'	tugék/ 'to break down'

Pitch is the highness or lowness of a tone. Intonation conveys differences in expressive meaning, such as indicating the attitudes and emotions of the speaker. The International Phonetic Alphabet (IPA) of the International Phonetic Association is used by most linguists when studying the language, for it is designed to represent qualities of speech that are part of oral languages, such as phonetic and phonemic transcriptions.

2.2 Speech Sounds

Speech sounds are produced with the outgoing breath stream controlled and modified by the speech organs. Speech sounds are the result of the control and modification of lung air in different ways at one or more points in the vocal tract. The sounds are produced through speech organs that are either movable or stationary. Movable parts, called articulators, are the lips, tongue, velum, uvula, vocal bands and the lower jaw. The tongue which is involved in articulation is described in terms of its subdivisions, namely, tip, blade, front, back, and root. The stationary parts include the teeth, alveolar ridge, hard palate, soft palate and the back wall of the pharynx.

2.3 Vocoids and Contoids

Speech is a continuum of sounds in which each unit is merged unnoticeably into another. It has two kinds: contoids and vocoids. Kenneth L. Pike (1955) used the term contoids and vocoids to designate the phonetic types as distinguished from the consonant-vowel phonemic categories. Contoids are speech sounds that are articulated with complete stop or audible friction. One or more points in the vocal tract are where the obstruction of the outgoing air stream is either by stopping the passage of air completely or by forcing it into narrow channels producing audible friction. The sounds produced with the continuous stream of air passing to the resonance chamber are the vocoid. Olaya (1967) said that vocoids act as syllable nuclei. Intermediate between the two types is the semi-contoids - vocoids patterning as contoids that are not syllabic.

Further, the tongue has no contact with the roof of the mouth in vocoid articulation. In this case, the lip shape can be described by visual means. The differences in the degrees of tongue elevation and tongue advancement are so small that it is impossible to assess them accurately. The Cardinal Vowel Scale, devised by Daniel Jones (1960), a British linguist, and adopted by the International Phonetic Association, is a phonetic grid that consists of a series of eight basic vowels of known formation and acoustic qualities, which is used in this study. Daniel Jones (1960) said that "the selection of these eight cardinal vowels is based upon the principle that no two of them are so near each other as to be incapable of distinguishing words." The basic eight vowels are i, e, ɛ, a, u, o, ɔ, ɑ which are shown on a trapezium.

The trapezium is taken as a conventionalized representation of the human mouth, with the lips to the left and the pharynx to the right. The dots represent the relative positions of the tongue in the articulation of the vowels. Close, close-mid, open-mid and open refer to the degrees of tongue elevation. Vocoids situated in the line i-aor near to it are called front vocoids, and those in the line u-ɑ, or slightly in advance of it, are back vocoids. Central indicates that the highest point of the tongue is in the center of the mouth, midway between front and back. The values of different cardinal vocoids can be illustrated in different types of English in which the vocoid types are found in the IPA. The example is found below.

[i] we	[wi:]	(General)
[e]day	[de:]	(Scottish)
[ɛ] get	[gɛt]	(Northern British English)
[a]back	[bak]	(Northern British English)
[u] too	[tu]	(General)
[o] coat	[ko:t]	(Scottish)
[ɔ] hot	[hɔt]	(Scottish)
[ɑ] half	[hɑ:f]	(Southern British English)
[ə] about	[ə'baUt]	(General)

Meanwhile, contoids considered two factors. These are a point of articulation and manner of articulation. Voiced and voiceless are characterized by the presence or absence of vocal band vibration.

Place of Articulation

Point of articulation refers to the place of contact or near the contact of an articulator with another articulator or with a stationary part. The following linguistic terms are used to describe the articulatory structure involved in relation to their speech function.

Linguistic Terms	Structures Involved
Bilabial	both lips
Labio-dental	lower lip, upper teeth
Dental	tongue tip and rim, upper teeth
Alveolar	tongue blade, or tip and blade, alveolar ridge
Retroflex	tongue tip, hard palate
Palatal	tongue back, hard palate
Velar	tongue back, soft palate
Uvular	tongue back, extreme back of velum known as the uvula
Glottal	vocal bands

2.4 Manner of Articulation

Manner of articulation is the interaction of the articulators when making speech sounds. The obstruction of articulators occurs at the point of articulation. Contoids are to be classified into different types, such as plosive, nasal, trill, taps or flaps, fricative, lateral fricative, approximant, and lateral approximant. Plosives or stops are consonants where the air is blocked at the place of articulation to accumulate pressure, and then it is released in one instant. Nasal is when the speaker lets air out of his nose as he pronounces them. Trills are a series of repeated bursts, such as in Spanish 'carro' where r is a trill. The air flows continuously when producing trills. Taps or flaps are single brief bursts with little accumulation of pressure at the place of articulations. Fricative uses vocal apparatus to partially block the airflow in such a way that only some air passes through. Approximant is when the air flows smoothly through the vocal apparatus, so that very little friction is created.

The relationship between the two dimensions of contoid articulations can be regarded as a matrix in which the columns represent the points of articulation and the rows, the manner of articulation.

2.5 Review of Related Studies

Like any other studies in languages, some linguists include the descriptions and productions of sounds and speech patterns which are used to determine human experiences and culture. Analyzing the language of a certain group would help in explaining why certain phenomena happened or are practised in the present or will continue in the next few years, and sometimes would predict its extinction in the future. Identifying the structure of language also traces the changes that take place, which result in language variations and differences. Many factors have influenced these changes, such as language-intermarriage, migration, technology, trade, cross-cultural contact, media and others (Wardhaugh, 2006). Amidst that uncontrollable outcome of cultural and social contact, speakers of the same language are able to communicate.

Manobo language is not an exception that goes around other languages - changes and differentiation, particularly in phonology and morphology. In the recent census recorded by the Ethnic Group of the Philippines (2018), there are approximately 375, 870 Manobo speakers distributed throughout the country. Majority of them live in Agusan, North Cotabato, and the southern part of Davao. Constrastive analysis shows that the Manobo spoken in North Cotabato differs from the Manobo spoken in Sarangani, particularly in meaning and intonation. For example:

Manobo, North Cotabato	Manobo, Sarangani
uton / u-ton/ 'fish'	ikan/i-kan/ 'fish
lumiku/ lu-mi-ku/ 'home'	lumiko/lu-mi-ko/ 'return'
angayan ko ya? /'where are you going?	Kenen ka pasalo?/ 'where are you going?

In question form of Manobo, Sarangani, "the pitch is raised higher on the next to the last syllable of the last word of the sentence and not dropped as low in the last part of the syllable" while of Manobo, Cotabato, "the pitch races in a penultimate syllable, the falls again on the next syllable to the original level unless it is utterance final" (DuBois, 1976; Gelacio, Kwook Long, & Schumacher, 2000).

In the regions where Manobo is spoken, phonological dialectal variation can be a function of its coexistence with the native language or languages. For instance, in Jose Abad Santos, there are three major languages: Bisaya, Manobo, and Blaan. These languages tend to help preserve the tagalog and foreign (English or Spanish) sounds [a, e, u, f, o, ng] in their phonetic code. These sounds are in the phonetic systems of these native languages. Examples of these are the Blaan phonemes f and u, as in afiU flafəs/ / 'good morning'; and the Manobo Agusan phoneme ng, as in kelang /kelang/ 'corn'. Aside from that, the Manobo in Sarangani and North Cotabato have assimilated the tense schwa /ə/ of the native language (DuBois, 1976; Gelacio, Kwook Long, & Schumacher, 2000). There are also Tagalog words that are slightly similar to Manobo words. For example: in Tagalog, Ulan/ u lan / 'rain' while in Manobo, Udan/ u dan/ 'rain'; suklay/ suk lay/ 'comb' in Tagalog while in Manobo suklay/ suk lay/ 'comb'; in Tagalog, ngipin/ ngi pin/ 'teeth' while in Manobo ngipen/ nge pen/ 'teeth'. Additionally, the phenomenon of bilingualism or multilingualism, such as utterances combined of Manobo and Tagalog, is practised. For example:

Minayad/ mi nayad/ 'bought
Domateng/ do ma teng/ 'will arrive'
Binegayan/ bi ne gayan 'given'
Kimaen/ ki ma en 'eat.'

There are three books that deal with the phonological analysis of different dialects of Manobo. Carl D. DuBois (1976) published an introductory guide to generative grammar - grammatical transformation, morphophonemics, phrase structure of Manobo dialect

spoken in Sarangani. His book focused more on the syntactic rules of the dialect. His linguistic analysis of the Manobo Sarangani revealed 21 phonemes. These are:

5 vowels / a e i u o /
14 consonants /b d g h k l m n ng p s t w y /
stress /'/
length / : /
intonation /high pitch, which tends to occur in the stressed syllable of the last word of the sentence; mid-pitch on words and syllables before the high pitch, and low pitch that occurs on the syllable after the high pitch /
3 syllabic pattern / CV, CVC, CCV/

Another book was published by Gelacio, Kwook Long, & Schumacher (2000) in Urios College, Butuan City, that dealt with the phonemic analysis of Manobo in Agusan River valley and Diwata mountain range. The phonemic analysis revealed 25 phonemes, as follows:

7 basic vowels (in writing) /a ae e i o u ue/
2 additional vowels / ey iy/
16 consonants /b d g h j k l m n ng p r s t w y/
glottal stop / - /
emphatic stress /' /

Studies in the Philippine Linguistics published a Cotabato Manobo Grammar (1988) that also dealt with the phonemic structure of the language. The author established the following 20 phonemes in the Cotabato dialect:

6 vowels /i ɛ ə a u č /
14 consonants /b p m w t d s n l y k g ng h/ 9 syllable patterns / V, VC, CV, CVC, VCV, VCVC, VCCVC, VCCV, CVCCVC/, where V is vowel and C is consonant.

All clusters except h occur in root-medial consonant clusters formed at the juncture of syllables. g is the initial member of the cluster, which occurred 142 times as the first member of the cluster. The next highest frequency that occurs in the same position as the g is m, 43 times, and ng, 39 times. Other consonants are nasals with a following homorganic non-nasal consonant. The researchers checked approximately 1,400 roots.

The studies have little to offer to the proposed study in terms of linguistic procedures, such as phonetic descriptions and phonemisization, even though these are helpful in explaining how the Manobo language differs in their phonemic system.
Overall, the studies can only show the increased importance of scientific analyses, which are comprehensive, of the phonological system of a multi-language like Manobo.

3. Methodology

3.1 Research Design and Participants

The study was a descriptive study that aimed to describe the phonological features of Manobo. It was conducted in Jose Abad Santos, Davao Occidental. Before the identification of the informants, a Free Prior and Informed Consent (FPIC) had been sought from the Indigenous Peoples Mandatory Representative (IPMR) of Jose Abad Santos and from the National Commission on the Indigenous Peoples (NCIP) head of Davao Occidental. These two offices assisted the researcher in identifying the respondents. The 10 respondents of the study were residents of Jose Abad Santos who are Manobo and speak the language as their mother tongue and native language. The informants were 50 to 70 years old and above and 20 to 30 years old.

3.2 Research Procedure

In this study, the first task was to record the raw material of speech, then identify the recurring speech sounds and describe how they are produced. Through the recorded corpus, the researcher conducted a phonetic analysis, in which there is segmentation of the sample Manobo language into phonetic units and described the production and characteristics of each unit. In the phonemic analysis, the phonetic units were classified into phonemes of the Manobo language. Finally, it was followed by the generalization of the phonological rules. A mobile phone with an audio-recorder and microphone were used to record the sounds of the utterances and conversations. The word lists were Cebuano translations of Manobo-Agusan vocabularies taken from the book, *Agusan Manobo Vocabulary*, compiled by Havana, Torres, Gonzales & Schumacher (1978).

Further, the analysis of this study is based on the Tagmemic theory of Keneth L. Pike. Pike (1955) believed that there are components in a language that is distinctive. A specific language has a unit that is unique and plays an important role within the structure. To identify their distinctiveness, each unit must be differentiated from the other units. Thus, it is called contrast. The distinctiveness of a unit is classified by its position, articulation, and obstruction during speech production (Richard Young, Becker, & Pike, 1970). Aside from that, the theory aims to identify the variants of a phoneme; and to determine how it is distributed in the phonological system of a language. In this study, the theory applies to the phonemic units of the Manobo language and to the phonological variations among the Manobo speakers.

Kenneth Pike (1955) suggested having two different distinctions: one is strictly phonetic, and the other is based on function or phonological criteria. For phonetic distinction, he advocated using the words vocoid and contoid (de Souza, 2010; Hornéy, 2012). In this study, the researcher used the term vocoid instead of vowels and contoid instead of consonants to identify and classify the phonetic alphabet of the Manobo language. Vocoid is defined as the air that passes through the oral cavity without constriction, while contoid is defined as the breath stream that passes through the oral cavity with constriction (Anttila, 2018; Brosnaha & Malmberg, 1976). According to Hockett (1960), the function of sound in the language is to keep utterances apart. This means to say that the phonological system of language is a "network of differences between sounds".

All Manobo words that were recorded were transcribed to identify the phonetic units. The coding sheet was in the form of a checklist. It contains lists of phonetic features, such as voiced, voiceless, stops, plosives, fricatives, bilabial, labiodentals, etc., that help determine the range of variation of each phoneme. Each phonemic unit was described according to its phonetic features. The analysis was done by contrasting the phonetic codes, classifying their variation, and describing their distribution in the language system. Vowels and consonants were contrasted first to enable to further specify each phonemic unit by describing its variations and distribution of allophones in the Manobo language system. The second procedure was the variation and distribution of these phonemic units in the language system of the Manobo language.

4. Results and Discussion

This study made use of the conventional symbols of the International Phonetic Association. However, some of the signs and symbols have been modified to suit the grammar of the Manobo language under the study. Thus, the symbols [e] and [ɑ], which have the qualities of [ɛ] and [æ], are used in the study since, in Manobo, there is no contrast involved between [e] and [ɛ], and [ɑ] and [æ]. The symbols: [ɪ], [ə], [o], and [U] stand for [ɪ], [ə], [o], and [ʊ], respectively.

4.1 Segmental Symbols

Symbol			Example
[ɑ]	inay	['i'nɑɪ]	'mother'
[a]	wayeg	[wa:yəg]	'water'
[e]	alasdose	[alasdo'se]	'noon'
[ə]	teptep	[təp'təp]	'spit'
[i]	metinaw	[məti:naU]	'praise'
[ɪ]	banis	['banɪs]	'legs'
[u]	suwat	['su'wat]	'comb'
[U]	koda	['kU:dʔ]	'horse'
[o]	soso	[soso]	'breasts'
[b]	balad	[bal'lad]	'hands'
[d]	dekdek	[dəkdək]	'beat'
[g]	getek	[gət'tək]	'belly'
[ɦ]	maho	[ma'ɦiʔ]	'smelly'
[k]	kagnan	[kaʔnɑn]	'run'
[l]	logay	[lu:gaɪ]	'hair'
[m]	minukit	[minu:kɪt]	'pass by'
[n]	netongan	[nəto:ŋan]	'fall down'
[ŋ]	ngipen	[ŋi:pən]	'teeth'
[p]	pingin	[pi:ŋin]	'kaluha'
[r]	tinidor	['tinidor]	'fork'
[s]	sebed	['səbəd]	'one'
[t]	tito	[ti:tʔ]	'puppy'
[w]	wedad	['wədad]	'none'
[y]	niyog	[nɪ'yog]	'coconut tree'

4.2 Segmental Symbols and Signs

Symbol Description
[ˈ] - phonetic stress (before the stressed syllable)
[ʔ] - glottal stop
[:] - length: the sound represented by the preceding letter is long
['] - length: the sound represented by the preceding letter is short
[3] - high pitch level
[2] - normal pitch level
[1] - low pitch level
[↑] - rising intonation
[↓] - falling intonation
[ ] - brackets to enclose phonetic transcriptions
[.] - single dot to mark syllable
[©] - loan words

4.3 Manobo Vocoids

In vocoids, the sound is produced by a continuous stream of air that passes through the larynx and finally out through the oral and nasal cavity without producing any audible fiction. The air is relatively unimpeded (Rowe & Levin, 2014). All the vocoids in Manobo are pure and simple. The quantity of [a, e, i, o, u] is modified by the strength of pronunciation. The articulatory description and assessment of the quality of the vocoids of Manobo are treated in terms of the Cardinal Vowel Scale. The treatment also includes examples of distributional features in utterance and syllables. Table 1 below shows the Manobo vocoids in the Cardinal Vowel Scale.

	Front	center	back
High	[i], [ɪ]		[u], [U]
Middle	[e]	[ə]	[o]
Low	[ɑ]		[a]

Table 1 Manobo Vocoids

The frontal vocoids of the Manobo language are never rounded.

The Manobo [i] occurs in stressed syllable in initial and middle positions and unstressed syllable in the final position.

[i] in initial position:

idong	[i:doŋ]	'nose'
ipanawa	[iˈpɑ'naU]	'journey'

[i] in medial position:

talinga	[taˈli:ŋɑ]	'ears'
deitek	[dəˈit'tək]	'small'

[i] in final position:

ngingi	[ŋiŋi]	'saliva'
balisi	[baˈlisʔ]	'noisy'

[ɪ] is produced with the tongue tip near to the center than the front, raised just above the position of [e]; lip and tongue muscles are lax compared with the tension in [i]. Rowe & Levine (2014) said that vowels could be divided into two categories depending on the degree of tension of the tongue muscle and the degree of vocal tract constriction. Tense vowels are produced with more tension and more constriction of the vocal tract. On the other hand, lax vowels are produced with less tension and constriction and are shorter in duration than tense vowels.

[ɪ] occurs in unstressed syllables in all positions.

[ɪ] in initial position:

ispiho	[ɪsˈpi:ho]	'mirror'
isalem	[ɪˈsaləm]	'morning'

[ɪ] in medial position:

mengit-ngit	[məŋitʔŋɪt]	'dark'
masalig-et	[masa'lɪʔət]	'no space'

[ɪ] in final position:

©baldi	['baldɪ]	'bucket'
menuli	[mə'nu:lɪ]	'go home'

[e] is produced with the tongue positioned in the middle and lower the standard English vowel [e]. The mouth is half-open, and the tongue is humped toward the front of the mouth. It is tensed and spread. It occurs in an unstressed syllable. [e] in Manobo is mostly borrowed words, such as:

alas dose [alas 'do'se] 'noon'
megeskwela [məgəs'kwe'lɑ] 'schooling'

During the collection of data, the researcher found out that [e] is seldom spoken in the language because it is confused with the characteristics of [ɪ]. In Manobo's writing, [e] usually pertains to stressed, centralized, laxed and briefed in duration. It has a similar projection as schwa [ə].

[ɑ] is the most open of the front vocoids. This open, lax, front vocoid occurs in stressed – initial syllable and unstressed – middle and final syllables.

[ɑ] in initial position:

apo	['ɑ'pʔ]	'ancestors'
agaw	['ɑ:gaU]	'cousin'

[ɑ] in medial position:

esawa	[ə'sɑwɑ]	'wife or husband'
komaen	[ko'mɑ'ən]	'eat'
©bintana	[bɪn'tɑnʔ]	'window'

[ɑ] in final position

gina	['gi:nɑ]	'awhile ago'
loba	['lo'bɑ]	'happy'
baha	['ba:hɑ]	'mouth'

[a] occurs in stressed syllables in the initial position of the two- or polysyllabic-word when the final syllable does not have ended in plosive. If a word ends in plosive, the strong stressed is in the final syllable.

[a] in initial position:

amay	[a'mɑɪ]	'father'
sablag	[sab'blag]	'plate'

[a] in medial position:

binalos	[binalos]	'hungry'
kadangan	[ka'daŋ'ŋan]	'long time ago'
maama	[ma'a'mɑ]	'male'

[a] in final position:

madita	[ma'di:ta]	'many'
liwan	['lɪ:wan]	'money returned when payment'
wedad	['wədad]	'none'

The Manobo [ə], a central, unstressed, and lax vocoid, is articulated in a neutral lip and tongue position. However, [ə] following a contoid in a syllable is uttered with subordinated force and not with strong prominent utterance. Unless when it is a question form, such as aden? [ad''dən?] 'what?', the final syllable is uttered with stronger stress. The vocoid [ə] is in initial and final syllable positions only in Manobo native word forms, never in loan words.

[ə] in initial position:

teptep	[təptəp]	'spit'
legdeg	['ləg'dəg]	'light'

[ə] in final position:

komaen	[ko'mɑ'ən]	'eat'
mininem	[mɪ'ni:nəm]	'drink'

aden? [ad''dən?] 'what?'

[u] is a tense, close, rounded and back vocoid. In its articulation, the lips are almost puckered, and the tongue is raised, almost touching the palate without producing friction. [u] occurs in stressed syllable in initial and medial positions.
[u] in initial position:
bulaw ['bu:laU] 'two or more persons are fighting.'
[U] occurs in stressed syllables in initial and medial positions.
[U] in initial position:
©sukli ['sUklɪ] 'money returned when payment'
omay ['Umɑɪ] 'year'
In Manobo, [o] occurs in stressed syllable in initial and medial positions and unstressed syllable in final positions unless it is following a contoid-cluster.
[o] in initial position:
toyang ['toyɑŋ] 'dog'
tobed ['to:bəd] 'root of the plant'
[o] in final position:
inog ['i:nog] 'riped'

4.4 Manobo Vocoid Chains

In this study, vocoid chain is a diphthong: [aɪ], [əɪ], [aU] and [oɪ]. Table 2 below shows the Manobo vocoid chains.

	front	Central	back
High			
Middle		[əɪ]	[oɪ]
Low	[aɪ]		[aU]

Table 2. Manobo Diphthongs

Two sub-types were distinguished in describing this type of Manobo speech sound:

1. those with syllabics that have as their center on one of a large choice of vocoids followed by a close-front offglide; hence, the movement from syllabic to offglide is forward or upward, and backward, as in [aɪ] in amay [a'mɑɪ] 'father'; and
2. those with close-back offglide, i.e., the movement from syllabic to offglide is either backward or upward, as in [aU] in miyaw [mi'yaU] 'cat'. [aɪ] only occurs in unstressed syllable in the final position.

[aɪ] in final position:
balay ['bɑ:laɪ] 'house'
alosay [a'losaɪ] 'spoon'
This fronting vocoid [əɪ] only occurs in the morpheme nemeypey [nəməɪ'pəɪ] 'shout.'
[aU] is classified as lax, half-close and rounded. It occurs only in unstressed syllable in the final position.
[aU] in final position:
utaw ['u:taU] 'man'
aldaw ['ɑldaU] 'day'
[oɪ] occurs only in unstressed syllable in the final position.
apoy ['a:poɪ] 'fire'
menongkoy [mə'noŋkoɪ]' on the top of a thing.'

4.5 Manobo Contoids

Contoids are articulated with varying degrees of obstruction of the breath stream. It ranges from a complete stop to a slight narrowing which produces audible friction as it passes the lungs (Levin, 2006; Hocket, 1960; Williamson, 2015). In this section, the Manobo contoids are analyzed in some detail according to the place in which the obstruction is made and how it is made. This includes voicing or non-voicing. Table 3 below shows the chart of the Manobo contoids.

	Labial	dental & alveolar	Velar	Glottal
Plosives	[b] , [p]	[d], [t]	[k], [g]	[ʔ]
Fricatives		[s]		[ɦ]
Nasalized	[m]	[n]	[ŋ]	
Lateral		[l]		
semivocoid	[w]	[y]		
Flap		[r]		

Table 3. Manobo Contoids

The Manobo plosives are aspirated or with audible release in all positions. Other general features of Manobo plosives are:

1. When followed by nasalized contoid, a plosive release is nasal. e.g., pangatobong [paŋa'tobоŋ] 'shoulders', and taking ['tɑ:kiŋ] 'go'.
2. Manobo plosives that are followed by vocoids [o] and [a] in unstressed syllable in final position tend to end in a glottal stop. e.g., intetodo [in:tə'todʔ] 'fingers', malipa [mɑ'lipʔ] 'dirty', onto ['on:tʔ] 'very'.
3. When followed by alveolar sound, [r], Manobo plosives tend to be generated in stressed syllable when it is located in the initial and medial positions, e.g.,
   tr trapohay ['trapohɑɪ]'rug'

   pr timprano [tim'pra'no]'early'

4. When followed by the alveolar sound [l], the stress is stronger in the final syllable; for example
   [bl] sablag [sab'blag] 'plate'
5. When [ə] is following the plosives, usually in the medial and final positions of the syllable, the air rushes out from the mouth with an explosive force after the release of the obstructions.

In Manobo native words, [b] is uttered with an explosive force that the air rushes out from the mouth and [p] is uttered with slight force unless when it is followed by vocoids [i and o] and it is located in the initial and medial positions of the syllable.

[p] and [b] in initial position:

pangatobong	[paŋa'tobоŋ]	'shoulders'
pilek-pilek	[pɪləkʔ'pi:lək]	'eyebrows'
balisi	[ba'lisʔ]	'noisy'

[p] and [b] in medial position:

dipanog	[di'pɑ:nog]	'blood'
nebayat	[nə'bɑ'yɑt]	'laughing'

4.6 Dental and Alveolar Plosives

In Manobo, [t] is articulated with the tongue contacts against the upper teeth; hence, it is dental plosives. [d] is articulated at the alveolar ridge. There is a slight vibration in the larynx of production of [d] and in the production of [t]. [d and t] are voiced. Just like the case for [p] and [b], the lips' position is conditioned by the alveolar plosive sounds. e.g., spread lips for tiyo ['ti'yoʔ]'uncle', and lip rounding for tito [ti:tʔ] 'puppy'. A sudden separation of the tip and rim of the tongue and the upper teeth closure allows the air stream to escape with force unless it has been blocked by a second and directed elsewhere in anticipation of contoid following it, e.g., when there is a glottal stop before the final syllable, such as tuminggaten [tUmiŋ'gat'tən] 'about face'; when the back of the tongue articulate with the soft palate, as for [g] in legdeg ['ləgdəg] 'light'; [k] in dekdek ['dəkdək] 'beat'.

4.7 Velar Plosive

Complete obstruction of the air stream is formed by a closure made between the back of the tongue and the soft palate or the velum. The obstruction compresses the lung air behind the velar closure; during this, the vocal bands are wide open for [k] but are set in vibration, producing the voicing [g]. The adjacent sounds of [k, g] condition its labialization, that is, there is an anticipatory lip spreading for the plosives before the semi-contoid [w] and front vocoids, e.g., kwani ['kwa'ni] 'later', kwalta ['kwal:tɑ] 'money';

and an anticipatory lip rounding for the plosives before the back vocoids and semi-contoid, e.g., kowa [ˈko:wɑ] ‘uhm’, podok [ˈpo:dok] ‘knife’. The articulation releases a compressed lung air with force upon sudden separation of the lingua-velar closure.

4.8 Glottal Stop Plosive

Carl D. DuBois (1978) emphasized that a grave accent must be written over the proceeding vowel and a hyphen must be written between a plosive and the following vowel to emphasize the glottal stop in a Manobo word and so that the person reading the Manobo words would understand the correct meaning and would read the word correctly. A glottal stop is a form of plosive in which the closure is made by bringing the vocal folds together, as when holding one’s breath (Brosnaha & Malmberg, 1976; Encyclopedia Britannica, 2018). David Crystal (cited in Honéy, 2012 p. 67) informed that glottal stop is part of humans’ phonetic ability and is waiting to be used.

Manobo glottal stops are often used to reinforce voiceless plosives, such as [t] as in mangitngit, tuminggáten ; [k] nakalid, and to enforce voiced plosives [d] as in eden [ʔe.dən] ‘what’ and [g] as in beget [bʔgət] ‘heavy.’ Glottal stop in Manobo occurs:

(1) at the beginning of the word, such as ikan [ʔi'kan] ‘fish’, odan [ʔo'dan] ‘rain.'
(2) in between the vowels [a, e, i, o, u], such as bitoen [biˈtoʔ'ən] ‘star.'
(3) at the end of the word, such as apó [a.ˈpoʔ] ‘grandparent’, olo [oˈloʔ] ‘only.'
(4) before a consonant, such as mámis [ˈmaʔmis] ‘sweet’, kánen [ˈkʔnən] ‘food.’
Manobo glottal stop often occurs in initial and final unstressed syllables in the syllable patterns:

(1) initial position: CV and VC

sísí	[ˈsʔsʔ]	‘lips’

(2) final position: CV, VC, CVC, cV

kinitá	[kɪˈni:tʔ]	‘seen’
lieg	[ˈli:əʔ]	‘neck’
dipanog	[diˈpɑ:noʔ]	‘blood’
yáyá	[ˈyʔyʔ]	‘shy’

where:
C = contoid
V= vocoid
c= semivocoid

4.9 Fricative

In Manobo, fricatives are produced in the position of alveolar and glottis. The simultaneous combination of vibration and fiction and resonatory transmission through the nasal tract results in nasal voiced fricative [ɦ̃] (Brosnahan & Malmberg, 1976). [ɦ̃] is the result when the glottis is just partially closed, such as heman [ˈɦeman] ‘also’.

4.10 Nasals

Manobo nasal contoids are nasalized except when it is in the final position of the syllable, such as [ŋ] in toyang [ˈtoyɑŋ] ‘dog’. Manobo nasal contoids are also articulated in a manner similar to the plosives; however, they are different in two features: 1. nasal contoids are voiced when it is in the initial and medial positions of the syllable and are voiceless when it is in the final position of the syllable; 2. the velum is lowered which gives outgoing breath stream a nasal resonance. Nasal accommodation in contextual adjustments is seen frequently when nasal contoids follow a vocoid articulation.

4.11 Velar Nasal

A complete oral closure is formed between the soft palate and the back of the tongue in [ŋ], resembling that for the plosive [k] and [g]. In this position, the voiced air stream is emitted through the nasal cavity. The preceding vocoid determines the lip position, i. e., spread and withdrawn lips, slightly spread, and rounded. Manobo [ŋ] occurs in pre-and post-vocalic in all positions.

[ŋ] in initial position:

ngadan	[ˈŋadɑn]	‘name’

[ŋ] in medial position:

kadangan	[kaˈdaŋ'ŋan]	‘long time ago’

[ŋ] in final position:

owang	[ˈowaŋ]	‘open’

4.12 Lateral

Manobo [l] is an alveolar lateral. It is articulated with a complete velo-pharyngeal closure shutting off the nasal resonator and with a partial closure between the rim and the upper teeth. With this position, the voiced air stream is released.

[l] in initial position:

leba [lə'bɑ] 'happy'

4.13 Alveolar Flap

The Manobo [r] is produced with a single flap. The tip of the tongue is raised towards the alveolar ridge, but not touching it. This closure completely blocked the nasal resonator. In Manobo, [r] is seldom observed and used in native words of the language system. [r] only occurs in the following words:

timprano	[tim'pra'no]	'early'
©tarbaho	[tar'bɑ'ho]	'job, work'
©tinidor	['tinidor]	'fork'
©barko	['barko]	'ship'

The lip position for [w] depends on the adjustment of the vocoid, but usually, in Manobo, it is rounded, such as wayeg [wa: yəg] 'water' is devoiced after [k], such as kwalta ['kwal:tɑ] 'money', kwani ['kwa'ni] 'later'.

4.14 Palatal Semi-vocoid

Manobo [y] is voiced. The tongue assumes similar position as of [i], and glides immediately to the position of the following vocoid. [y] is always unstressed in all position.

[y] in initial, medial and final positions:

yaya	['yaʔyaʔ]	'shy'
meyaman	[mə'yɑ'mɑn]	'rich'

4.15 Manobo Contoids Cluster

A Contoid cluster is a sequence of two or more consonants without an intervening vocoid or syllable division that constitutes a contoid cluster (Rowe & Levin, 2014). In the phonological system of Manobo, the initial is plosives, such as [b, k, p, t], followed by [l, r and w]. However, some of the words are loans and have been acquired by the native speakers of Manobo; thus, these become part of the daily conversation and language system of the natives. The following examples illustrate the point:

©kwalta/kwarta ['kwal:tɑ] 'money'
©eskwela [əs'kwelɑ] 'schooling'
kwani ['kwani] 'later'

4.16 Manobo Supra-segmental Prosodemes

This study restricts the supra-segmental features to the phenomena of stress, length, pitch and intonation.

4.17 Stress and Rhythm

Manobo stress is either strongly stressed (') or weakly stressed (unmarked). In the polysyllabic Manobo word, such as; nakadogso [na.ka.'dog.sʔ] 'to trip in walking or running' the third syllable is given prominence by strong stress, the others are subordinated by weak stress; katadogihen [katado'gihən] 'sleepy' the strong stress is in the fourth syllable. The following examples will tell that the Manobo stress is fixed, in the sense that the stress is strong when the word is a two-syllabic; the strong stress is in the first syllable. When the word is polysyllabic, the stress is strong in the position before the final syllable. Unless when there is a schwa [ə] in all positions of the word, the stress may be before or after the schwa, such as:

salep [saləp] 'stream'
megenaw [məgə'nɑU] 'cold'

When there is a contoid cluster in a polysyllabic word, there is strong stress in the first or second syllable, depending on where the contoid cluster is located. However, when the contoid cluster is the final syllable of a word, it is always unstressed. In Manobo phonological system, the final syllable of a word is always unstressed.

(1) on the vocoid initial word in the two-syllabic word
inay [ʔi:nɑɪ] 'mother'

(2) on the contoid initial word in the three-syllabic word
balangay [balaŋaɪ] 'small boat'
(3) on the contoid cluster word in all positions
trapohay ['trapohɑɪ] 'rug.'
When there is a glottal stop before the contoid in the final syllable of a two-syllabic word, the stress in the final syllable, such as sosó [so'sʔ] 'mollusk'; and oló [o'lʔ] 'only'.

Rhythm results in the recurrence and occurrence of strongly stressed and weakly stressed syllables in utterances that are longer than the word. In Manobo, in connected speech or in a discourse, the syllable stress found at a word level retains its base syllabic stressed form. For example,

amang, ayas ka una. [a.'mɑŋ. a. 'yɑs. ka. 'u.na] 'Mother, come here for awhile.'

4.18 Length

Length, [:], ['] pertains to the duration of the articulation of the sounds or syllables. It is a feature of prominence, which is a complex of length and stress. In Manobo, length is either long or short. A Manobo word could be confusing or could have a different meaning if it is incorrectly uttered; thus, a speaker must identify the duration of the articulation of the sounds, particularly the glottal stop. For example,

soso	['so:so]	'breasts'
sosó	[so'sʔ]	'mollusk'

Vocoids are generally lengthened at the beginning and at the end of the syllable. However, a syllable in the final position is always shortened, whether or not it is a stressed or unstressed syllable. In the first syllable of a two-syllabic word, the length is longer, especially when the initial of a word is a vocoid [ɑ, ə, i, o and u]. The length is longer in the second syllable of a polysyllabic word where there is a vocoid [ɑ, o and u]. For example, ipanaw [ipɑ:naU] 'walk'

The contoid length of Manobo is often and is realized as gemination. The beginning of the articulation of the first contoid of a geminate is followed by a hold, and then the second syllable, with a renewed momentum across the syllable boundary, is realized as the release, which blends with the next speech sound. For example:

dangnga	[daŋ:'ŋa]	'play'
dallem	[dal'ləm]	'under'

4.19 Pitch and Intonation

In Manobo speech, only the natural speech, which makes use of the pitch phones [3, 2, & 1], is used because emphatic and emotional speech characterizes the pitch level 4. For example, the syllable [ba] in dibaloy [di.'ba.loɪ] 'behind' when utter monotonously is not prominent even with exaggerated stress. Hence, stress should be associated with pitch change, such as [^{1}di.^{2}'ba.^{1}loɪ]. The example below may illustrate the combined supra-segmental features of pitch and intonation.

a. Ayas ka uná diyá. [^{1}a.^{2}'yaska.^{3}u.^{2}naʔ 'dɪ.^{2}yaʔ↓] 'come here for awhile'
b. kenen? [^{1}kə.^{3}'nən↑] 'where?'
c. doton [^{2}'do.^{1}ton↓] 'there'
d. doton? [^{1}do.^{3}'ton↑] 'there?'
e. domoton ka? [^{2}domo.^{1}ton ^{3}ka↑] 'are you going there?'
f. moton ka? [^{1}mo.^{2}ton ^{3}ka↑] 'are you going there?'
g. domoton ka man basi? [^{1}do.^{2}mo.^{3}ton ^{2}Kaman ba.^{1}si↓]
'you are going there, aren't you?'
h. abati una sa baso. [^{1}a.^{2}'bati'u.^{1}na sa ^{2}ba.^{1}so↓] 'kindly, take the cup.'

i. mapakay abati una sa basa? [^{1}ma.^{2}'pakay ^{1}a.^{2}'ba.^{1}ti ^{2}'u.^{1}na sa ^{2}ba.^{3}so↑] 'could you take the cup?'
j. si Randi, si Lisa, aw si akə. [^{1}si ^{2}Ran.^{1}disi ^{2}Laɪ.^{1}sɑawsi ^{2}a.^{1}kəʔ↓]
'Randi, Lisa and I'

The combined supra-segmental features of pitch and intonation can be summed up in the following patterns:
Communication/situation PLPattern examples command 123212↓ (a)
request 12121↓ (h)

	121212123↑	(i)
yes or no question	213↑ or	(e)
	123↑	(f)
open-ended question	13↑	(b)
echo question	21↑	(d)
tag question	12321↓	(g)
statement of fact 21↓	(c)	
series	1212121↓	(j)

In a Manobo discourse, the intonation is simple and fixed. If the speech is a statement such as a command, tag question, series, and statement of fact, the intonation that falls at the end of the sentences falls.

5. Conclusion

The study aimed to describe and classify the phonological features of Sarangani Manobo, which is spoken in Jose Abad Santos, Davao Occidental. The result showed a total of 42 phonemic units in Manobo. Clipping, code-switching, and borrowing of words are detected. Interestingly, [r] as an alveolar flap has inhabited the phonological system, which is commonly identified in some loan words. Manobo is still actively learned and used at home and in the community by children, but it is not being sustained in the formal institution. It is recommended that a further study, with a large corpus, on the morphophonemic variations of various native speakers. Finally, it is important that the language policymaker, such as the MTB-MLE policy, should actively promote local languages like the Manobo language in schools where this language has been spoken by most students to be used in instructions to help strengthen its vitality.

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