PHONOLOGY OF MOSIYE

by

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Abstract

This thesis is a description of the phonology of Mositacha, a Lowland East Cushitic language of the Afro-Asiatic family, based on original field research. Mositacha is spoken by approximately 6,000 Mosiye people who live in the North Omo Zone of the Southern Nations, Nationalities, and People's Region in southwestern Ethiopia. Very little has been written on the Mositacha language. With the exception of a brief overview of the phonology in Wondwosen's recent grammar (2015), which identifies the consonant and vowel phonemes, notes the presence of consonant gemination and vowel length, and briefly comments on tone, there has been no systematic study on the Mositatcha phonology. This thesis offers a more comprehensive study on the phonology of Mositacha. It examines consonant and vowel phonemes, syllable structure, phonotactics, phonological processes and tone. Of particular interest in this phonology are marginal consonant phonemes which may be attributed to ongoing language shift, phonemic vowel length, consonant sequences and gemination, and a description of pitch patterns in words in isolation.

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ABBREVIATIONS

FEM	Feminine
MASC	Masculine
FOC	Focus marker
N	Noun
SG	Singular
PL	Plural
PRF	Perfective aspect
1	First person
2	Second person
3	Third person
IMPF	Imperfect aspect
IMP	Imperative

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Writing books is endless, and much study wears you out. – The Preacher (Eccl. 12:12)

There were certainly times along this journey of thesis-writing where I felt like it was a never-ending and wearisome task! Now that it has been completed, I look back with joy and deep graditude for each one who walked with me through this journey. From the research stage in Ethiopia, to courses in Canada, and writing in Michigan, I am profoundly indebted to each one of you who cheered me on.

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Thank you to each and every one of my Mosiye friends. You welcomed me into your homes and hearts, your faces were always before me as I wrote each page, and your language has both challenged and inspired me. I hope to someday soon hand this thesis to you personally. Your language is beautiful. It was a privilege to write about it.

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INTRODUCTION

The primary goal of this thesis is to describe the phonology of the Mosiye language spoken in southern Ethiopia. It is a Lowland East Cushitic (LEC) language of the Cushitic language family in the phylum Afroasiatic. This thesis will take a close look at the phonemes, allophones, phonetic variations, vowel length, syllable structure, phonological processes, gemination, and tone patterns found in the Mosiye language. It relies heavily on field research as well as extensive background knowledge of Cushitic languages and typology. Interesting phonological features which will be explored in depth in this thesis include consonant gemination, vowel length, morphophonemics, and lexical tone.

A recent survey (Mohammed & Harlow 2013) showed that the Mosiye language is threatened by encroaching neighboring languages, particularly Gamo and Zayse. Without active intervention by the Mosiye people themselves, bolstered by academic research and description, their language may cease being passed down to future generations. This thesis seeks to be a starting point for linguistic description of Mositacha by describing the phonology of the language. It is an important study for the Mosiye, who are in danger of losing their language, and some of the culture identified with their language. This study is also important to linguists who desire to know and understand more about Cushitic languages, particularly Lowland East Cushitic languages. As a descriptive linguistic study, this thesis will also indirectly contribute to the discussion on Mositacha's classification within LEC.

OVERVIEW OF THESIS

Chapter 1 introduces the Mosiye people, their cultural and linguistic context, and describes the field research conducted by the author. In Chapter 2, the consonant phonemes are identified and described. A discussion of marginal phonemes is given as a possible indication of ongoing language shift. Vowel phonemes are discussed in Chapter 3, along with long and short vowels and voiceless vowels. Chapter 4 is a description of the syllable with special attention devoted to syllable structure and phonotactics, which includes consonant gemination and vowel co-occurrence. Chapter 5 discusses several phonological processes such as reduplication, metathesis, and assimilation. A description of surface tone pattens found in nouns and verbs is given in Chapter 6.

1 BACKGROUND INFORMATION

The Mosiye people live in a diverse, multilingual context. This chapter provides the reader a brief ethnographic introduction to the Mosiye people in §1.1 and situates them in their linguistic context in §1.2. Section 1.3 summarizes previous studies that relate to the Mosiye language, and the chapter concludes in §1.3.1 with a description of the field research conducted by the author.

1.1 THE MOSIYE PEOPLE

Within the linguistically diverse country of Ethiopia, where approximately eighty languages are spoken, there are twenty-eight languages identified by UNESCO as endangered languages (Moseley 2010).[1] One of these is Bussa, whose speakers call themselves *Mosiye*. The Mosiye people live in the North Omo Zone of the Southern Nations, Nationalities, and Peoples Region (SNNPR – see Figure 1) in the Federal Democratic Republic of Ethiopia.

[1] Per UNESCO (2016), "A language is endangered when its speakers cease to use it, use it in fewer and fewer domains, use fewer of its registers and speaking styles, and/or stop passing it on to the next generation. No single factor determines whether a language is endangered, but UNESCO experts have identified nine that should be considered together: Intergenerational language transmission; absolute number of speakers; proportion of speakers within the total population; shifts in domains of language use; response to new domains and media; availability of materials for language education and literacy; governmental and institutional language attitudes and policies including official status and use; community members' attitudes toward their own language; and amount and quality of documentation."

Figure 1: Political Regions of Ethiopia (www.mapsofworld.com)

The Mosiye are surrounded by their neighbors, the Dirashe (Gidole) to the south, Ale (Gobeze) to the west, Zayse to the east, and Zergulla to the north (see Figure 2 below for a map of Mosiye in relation to surrounding people groups). *Mosiya* is the name the people call themselves; *Mosiye* is the name of their land; and *Mositacha* is the name of their language. To their neighbors, they are often known as the *Bussa*. Although this is different than the name they call themselves, it is not considered derogatory. Throughout this paper, *Mosiye* will refer to the people and *Mositacha* to their language.

Within the Southern Nations, Nationalities, and People's Region (SNNPR) alone, there are more than fifty languages spoken. The latest Ethiopian census in 2007 states that there are approximtely 19,000 Mosiye people (Lewis, Simons, & Fennig 2013), but the number of those who speak Mositacha is less than that most likely due to rapid language shift. Estimates of the number of Mosiye speakers vary. Dimmendaal and Voeltz (2007) estimate 1,500 speakers, whereas the Ethnologue (Lewis, Simons, & Fennig 2013) states that there are over 6,000 speakers. This latter number agrees with numbers estimated in a sociolinguistic survey conducted in 1994 (Wedekind 2002). Regardless of the exact number of speakers, however, it is known that the number of speakers is diminishing as the Mosiye are increasingly speaking the neighboring languages on a daily basis.

Mosiye villages are scattered along the eastern side of *Puso,* the Mosiye name for Gardula Mountain northwest of Gidole town and west of Lake Ch'amo (see Figure 2 below). Mosiye is located in the northern part of the Diraysha *woreda*, and forms two *k'ebeles*:[2] Bussak'ila and Bussabaso. Bussak'ila, the southern k'ebele, includes the villages Moro, K'ila, Toysala, Balk'o, and Karfikela. There is a small enclave of Dhac'e Gamo people in K'ila village who primarily speak Gamo. Bussabaso includes Dubaysho, Loola, Ots'a, Makio, Docha, and Hoda.

[2] Administration unit. Regions → Zones →Woredas →K'ebeles. A *k'ebele* is the smallest administrative unit and consisists of at least 500 families, or 3,500 to 4,000 people (Wikipedia. Retrieved from www.wikipedia.org/wiki/Kebele).

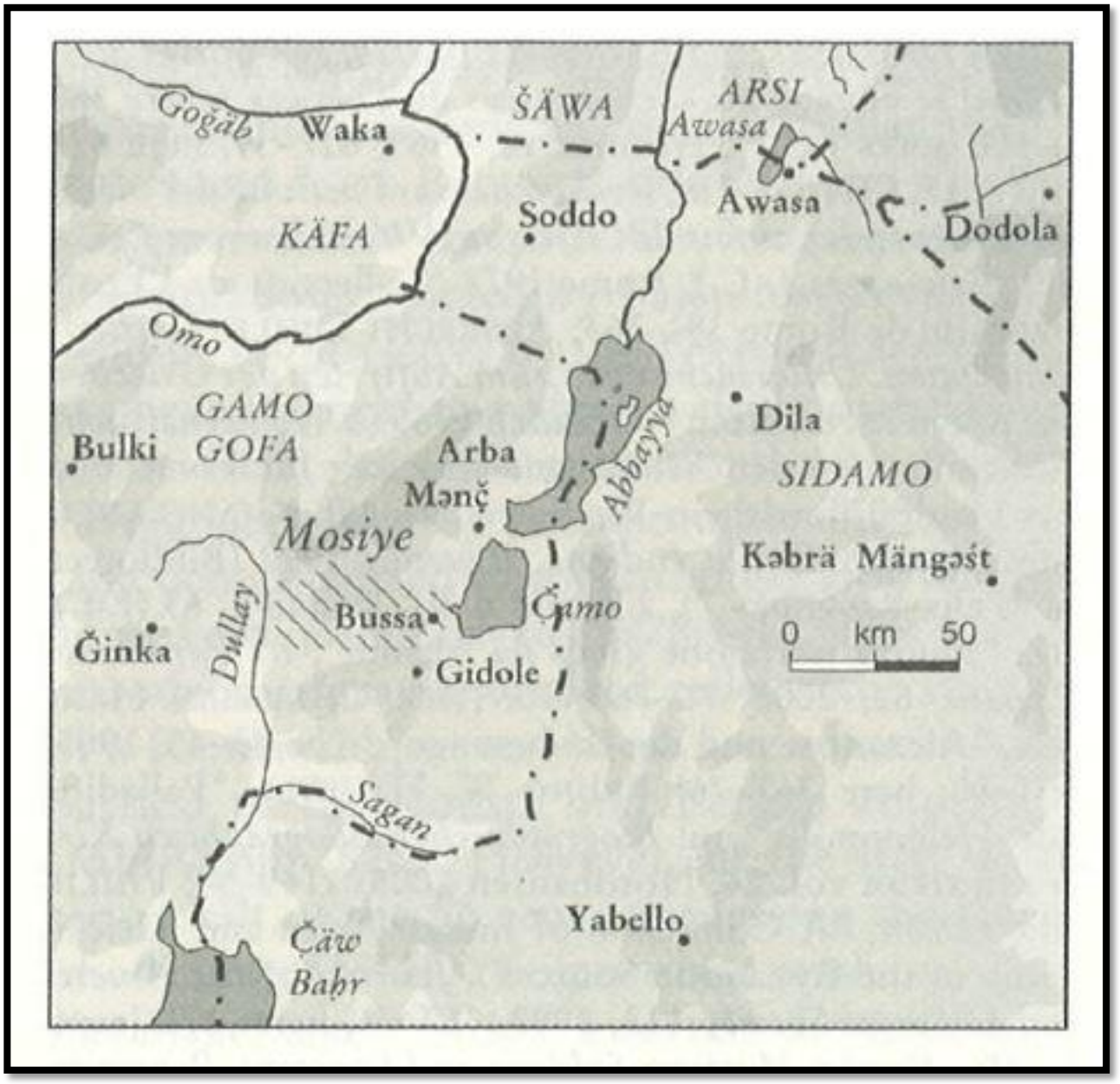

Figure 2: Mosiye and surrounding people groups (map taken from Encyclopaedia Aethiopica)

A road recently built from Gidole,[3] the nearest town, to the central Mosiye village has made it possible for the installation of electricity in K'ila and Toysala villages as well as regular public transportation ito the region. Most Mosiye who live in the southern villages travel to Gidole for their weekly market needs. The two primary schools are located in K'ila and Dubaysho. Secondary students live in Gidole where they attend high school at the Gidole Secondary

[3] The population of Gidole is approximately 15,000.

School. Protestant Christianity is the dominant religion, and most of the villages have at least one Protestant church. Toysala also has a Catholic church. The most remote villages, Hoda and Otsa, do not have a Protestant Christian presence, and the people in those villages are primarily animistic (personal fieldnotes 2013). *Puso* Mountain is considered sacred to the Mosiye because it is where they historically buried their religious leaders (Amborn 2007).

The Mosiye live in round houses with grass roofs (see Figure 3) although some homes in the larger village of Toysala are made with mud bricks and corrugated roofs. Like the surrounding people groups, they are primarily an agricultural people, growing a variety of crops: sorghum, teff, maize, and *ensete* (also known as the false banana plant). Their staple food, which they call *pambé,* is small balls formed out of flour and water that are steamed and eaten with a variety of greens and beans (personal fieldnotes 2013). On special occasions, they eat *injera,* a sourdough flatbread that is a staple in many regions of Ethiopia. Favorable ecological conditions, a small population, and sustainable agricultural practices assure an adequate food supply. Unlike their Konso neighbors, the Mosiye do not use terracing in their agricultural practices (Amborn 2007).

Figure 3: Mosiye house overlooking Lake Ch'amo (photo by author, 2013)

The Mosiye people are organized into nine patrilineal clans. Historically they are known for their military organization and strong cavalry. During the nineteenth century, they participated in violent wars against their neighbors and the imperial army. Oral tradition states that it was not until 1897 that the Mosiye were finally subdued (Amborn 2007).

1.2 LINGUISTIC CONTEXT

The linguistic context in which Mositacha is found is a richly diverse setting. Not only are they located in the region with the greatest number of language, but the Mosiye people maintain close contact with their neighbors who speak other Cushitic and Omotic languages. In this section, we will examine the impact of such a diverse linguistic setting on Mositacha.

1.2.1 Multilingualism and Language Shift

A recent sociolinguistic survey found that intermarriage between people groups and economic exchange with neighbors has led to multilingualism among the Mosiye (Mohammed & Harlow 2013). Other languages often spoken by Mosiye include Zayse (Zergulla), Afaan Oromo, Gamo, and Amharic. Proficiency in Amharic is due to education (Mohammed & Harlow).

In some areas, this multilingualism has aided the language shift as Mositacha is used in fewer domains. For example, in the more outlying villages, such as Makio in the north, Mositacha is no longer spoken, and Zayse has become the predominant language. Youth in still predominantly Mositacha-speaking areas are increasingly choosing to use Zayse as their primary language of communication. In other areas, however, language shift is due to migration. The village of K'ila in the south is predominantly Gamo-speaking due to an enclave of Gamo speakers that historically settled there (Mohammed & Harlow).

The following is a language map of Southwestern Ethiopia. Mositacha (labelled as Bussa in the map) is located at #73.

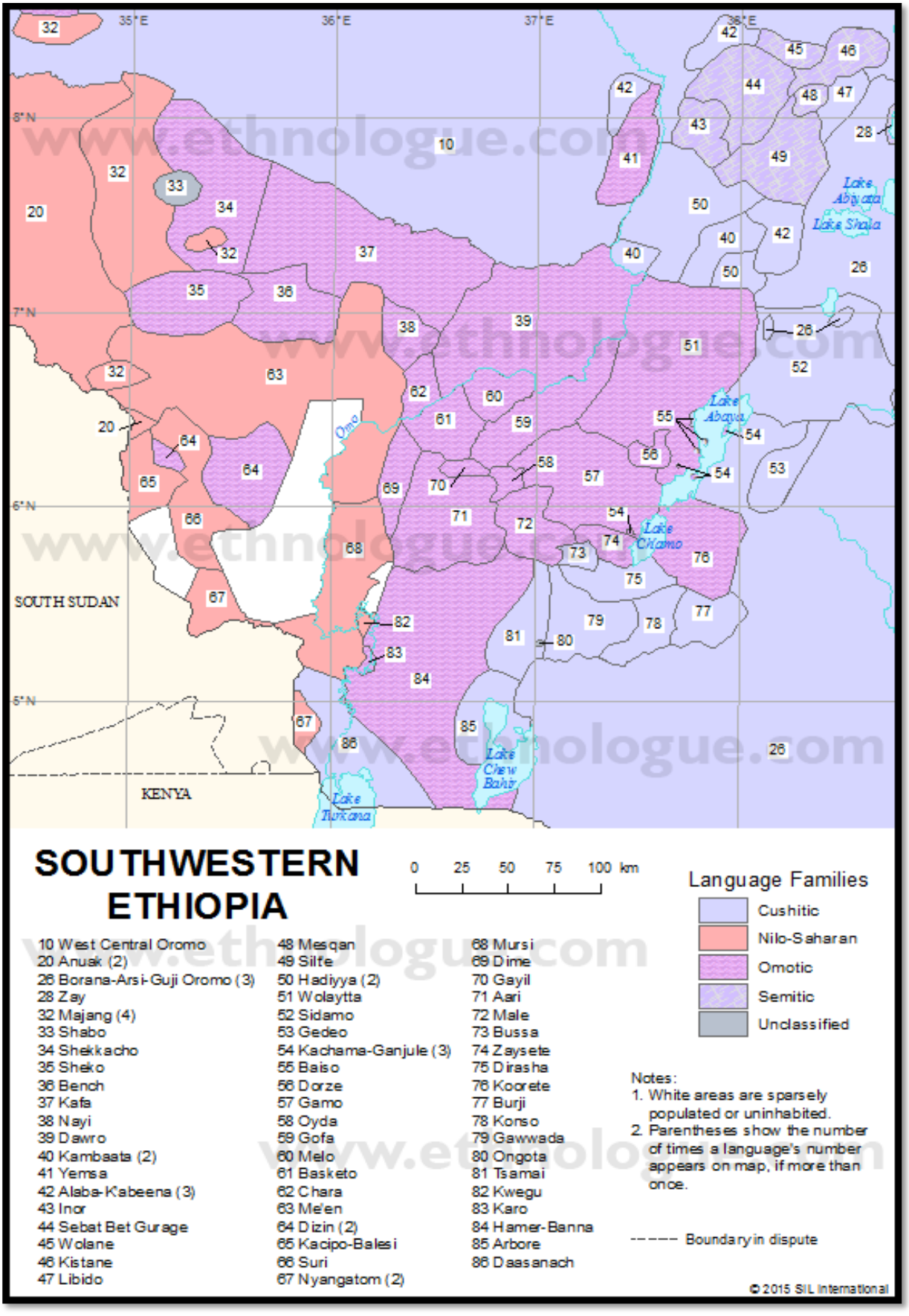

Figure 4: Language Map of Southwestern Ethiopia (ethnologue.com)

1.2.2 The Classification Question

Mositacha is a Cushitic language in the Afroasiatic phylum, the fourth largest language phylum in the world with 375 languages spoken by over 300 million people (Frajzyngier & Shay 2012). Cushitic languages are generally divided into four subgroups which are given geographically-based labels: North, Central, South and East. East Cushitic is the most complex branch, with further branches of Lowland East Cushitic (LEC), Highland East Cushitic and Dullay. The position of these three branches has not been satisfactorily defined and agreed upon by linguists. Dullay is sometimes located under LEC and other times given its own branch., Mositacha is found in the midst of this classification muddle. Scholars give two classification schemas for Mositacha, one of which locates Mositacha in the Konsoid node of Oromoid in LEC, and the other of which classifies it as a Dullay language. The first classification was originally given by Bender (1971) and upheld by Blench (2006). It classifies Mositacha as Cushitic > Eastern > Lowland > Konsoid. The Konsoid languages are Konso and Dirayta (Dirashe), and Mostitacha is usually included in this list. This dialect chain was first established by Bender (1971) due to the high lexical-statistical percentages between the three main languages – Konso, Dirayta, and Mositacha. Hayward (1981:126) states that Dirayta and Mositacha are the most northern dialects of the the Konsoid dialect chain. Figure 5 below provides a visual representation of this first classification scheme.

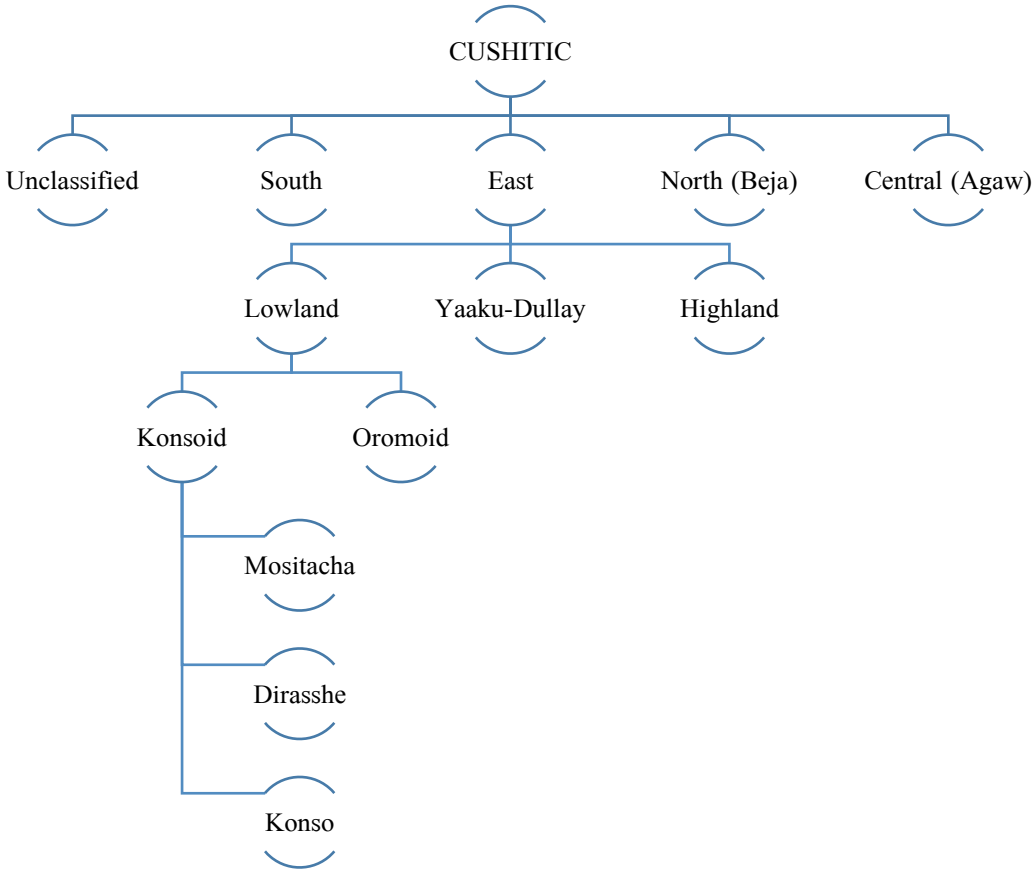

Figure 5: Mositacha classification

The second classification given by the Ethnologue (2013) classifies Mositacha as Afro-Asiatic > Cushitic > East Cushitic > Lowland East Cushitic > Southern Lowland East Cushitic > Transversal Lowland East Cushitic > Dullay. In this classification scheme, Dullay is part of LEC branch, instead of having its own branch within East Cushitic as Tosco (2003) and Hayward (2000) proposed. Although the Enthnologue identifies Mositacha as a Dullay language, it notes that Mositacha is part of a Konso-Dirashe (Dirayta)-Dobase dialect chain. What is striking about this classification is that while Mositacha is not classified as a Konsoid language, it is still considered part of the Konsoid dialect chain.

Reconciling these two classification accounts is not as difficult as it might seem. The history of the Konsoid and Dullay languages is closely intertwined. The Dullay languages – Gawwadda, Tsamay, Gobeze – are still spoken in the same areas as when the people first migrated there. The Dullay area is adjacent to the area where Konsoid languages are spoken. Ehret (1976) proposes that the high cognate counts found by Bender (1971) between Werezoid (Dullay) and

the Konsoid languages indicates an intrusion by the Konsoid languages into Dullay. This history corresponds with the account given by the Mosiye elders to the author about how their ancestors originally migrated from Borana in the south to *Puso* mountain where they intermingled with the indigenous people living on that mountain. Presumably, these people were from the Dullay, which may explain why alternate names given for Mositacha in the Ethnologue are also names of Dullay languages.

Phonologically, it appears that Mositacha has more in common with the other Konsoid languages than with Dullay languages. One of the most salient features of Dullay languages is pharyngeal consonants found in Gawwadda and Gobeze, but pharyngeal consonants are not found in Mositacha or the Konsoid languages. A dialectal study of the Konsoid by Black (1992) supports this claim that Mositacha is a Konsoid language. This analysis accepts the first classification scheme which locates Mositacha as a Konsoid language, and not as a Dullay language.

1.2.3 Dialects

There are three dialects of Mositacha, two of which were encountered during the author's field research. The first dialect is found in the western villages, Moro and Toysala. The second dialect, found in the northern villages such as Dubaysho, is more heavily influenced by the Omotic language, Zayse. Wondwosen (2000) calls these two dialects West Bussa and North Bussa, respectively. One of the most salient differences between these two is voicing. More discussion regarding voicing in Mositacha will be provided in Chapter 2 on consonant phonemes.

The third dialect, Nalo, spoken in the northern villages, is reported to be quite different from Moro and Baso. At present, no known research has been conducted in this dialect. Some Mosiye report that this dialect is so different it should be considered a separate language (Mohammed & Harlow 2013).

1.3 PREVIOUS STUDIES

Mositacha continues to be one of the least studied languages in Ethiopia. In M. L. Bender's (1976) classic work on the non-Semitic languages of Ethiopia, he notes that very little is known about Mositacha. Bender estimated there were 1,000 speakers who self-identified as *mósiya*. In a more recent overview of Cushitic languages, Cushitic expert Maarten Mous (2012) notes that Bussa (Mositacha) is one of six Cushitic languages yet to be analyzed and described.

As mentioned previously, Mositacha is included in the Konsoid dialect chain (Bender 1971). Black's (1992) research on the Konsoid dialect chain prompted him to argue that Konsoid is a linguistic cline in the process of dividing up into independent languages (Black 1992:5). This short article is helpful in that it provides phonological and grammatical isoglosses with notes. An article on the language by Wondwosen (2000) examines the claim by Bender (1976) that North and West Bussa are separate languages. Through a lexico-statistical comparison showing that North and West Bussa share 78% cognates and an examination of phonological, morphological, and syntactic processes, Wondwosen concludes that the two language varieties are not separate languages, but indeed dialects of the same language.

Only two sociolinguistic surveys of the language have been completed (Wedekind 2002; Mohammad & Harlow 2013). The first survey completed in 1994 and published in 2002 as part of the *Survey of Little-Known Languages of Ethiopia (S.L.L.E).* It focused on bilingualism between Konso and Gawwada, but it also contains a 320-wordlist of Dirayta and Mositacha words with phonemic and phonetic transcriptions. Respondents in this survey believed that Mositacha is more closely related to Dirayta, not Dullay (also called Gawwadda).

The second survey was completed in 2013 by Hussein Mohammed and the author. We interviewed thirty Mosiye people living in Moro, Gidole, and Toysala. While we found that Mositacha is still being passed on to the children in those areas, not all the respondents were certain that this transmission would continue due to the increased use of Zayse and Gamo in Mosiye areas. According to the interviewees, in some of the more remote villages, such as Makio, Mositacha is no longer spoken and thus already dead. The youth in particular are choosing to use Zayse for everyday communication instead of Mositacha. Factors for this

language shift include intermarriage, the political strength of Zayse in comparison to Mosiye, and movement of other people into Mosiye areas.[4]

There are two encyclopedia entries on the Mosiye people and their language in the *Encyclopaedia Aethiopica* (Uhlig 2007). This is the only published ethnographic information about the Mosiye people. Although brief, it highlights their location, favorable ecological conditions, myth of origin, and patrilineal clan structure (Amborn 2007). The entry on the Mosiye language includes a list of consonant and vowel phonemes and a sampling of grammatical information. It also notes the presence of two main dialects (Bileat 2007).

The most recent work on Mositacha is a grammar by Wondwosen Tesfaye (2015) from Addis Ababa University. In this grammar, he devotes a chapter to Mositacha phonology, identifying twenty consonant phonemes and ten vowel phonemes. Wondwosen explores noun and verb morphology, adjectives, other word classes, and the structure of clauses. Unless noted, the similarities in our analyses are purely coincidental. I had no access to Wondwosen's research until its recent publication.

[4] The results of this survey seem to correspond with the only other known work on Mosiye, an unpublished paper by Aleymayehu Gurmu. This paper, titled 'Some Notes on Sociolinguistics Aspects of Bussa,' was presented at the International Conference on Endangered Ethiopian Languages in Addis Ababa in April 2005. According to the abstract, Gurmu identified Mositacha as one of Ethiopia's endangered languages because of the rapid language shift occurring primarily due to intermarriage with neighboring people groups. He found that the northern varieties of Mositacha are shifting to Zayse and Zergulla while the southern varieties are shifting to Gamo and Dirayta.

1.3.1 Some Notes on Morphology

Cushitic languages frequently employ the following morphological processes: suffixation, prefixation, infixation, ablaut, stem alternation, reduplication, and tonal marking (Mous 2012:359). While the purpose of this study is not a morphological analysis, a few comments on Mositacha morphology will aid the reader. Throughout this thesis, all known morphemes will be indicated in the phonemic form with a dash.

Nouns and verbs in Cushitic languages tend to be unambigous categories (Mous 2012:359), and this appears to be the case in Mositacha. Adjectives in Cushitic languages, however, are often more difficult to identify as their own class (Mous). They will behave more like nouns or verbs depending on the language. In Mositacha, adjectives seem to appear more like verbs than nouns.

Mositacha nouns are minimally two syllables long, but are often much longer, most likely due to affixation. Their citation form generally ends in /a/, /o/ or /e/. Mositacha nouns have grammatical gender, but unlike some of the other LEC languages, grammatical gender does not seem to be morphologically marked on nouns (Wondwosen 2015). Masculine nouns require a third person masculine verb form, while feminine nouns take the third person feminine verb form.

One of the most common sequences found at the end of nouns is *-ʧa*, but the function of this possible suffix is not known. Below are a few examples.

(1)	a.	[mamotʃa]	‘father's sister (aunt)’[5]
	b.	[poónétʃa]	‘darkness’
	c.	[sitotʃa]	‘broom’
	d.	[ʃumetʃa]	‘mushroom’

Compounds are frequently found in the dataset. The following shows a handful of compounds formed using the noun *móle* ‘fish’ to identify parts of the fish.

[5] Throughout this thesis, high and high falling surface pitches are marked in the phonetic transcriptions. Low tones are not marked at all. Transcriptions with no tone markings are considered to have a level surface pitch pattern. Tone is discussed more fully in the final chapter.

(2)

a.	[hoola-mole]	‘fin’
b.	[kʾoola-mole]	‘fish-scale’
c.	[mékʾété-mole]	‘fish bone’
d.	[móle]	‘fish’
e.	[kʾoolá]	‘hide of animal’
f.	[hoolá]	‘feather’
g.	[mékʾéte]	‘bone’

Verbs also contain significant morphology. There are several recurrent sequences found among the verbs. While it is not possible to emphatically claim that these sequences are suffixes because their function is not known, I highly suspect that they are suffixes based on their common occurrence and the expectation of significant morphological processes in Cushitic languages. These common potential suffixes on verbs include *–so, -eetʃa* and *-usa,* as well as the potential prefix *ʔii-.* Below are a few examples of each affix.

(3) Examples of Possible Verb Suffixes

/-so/	koki-so	[kókísô]	‘dry out (clothes)’
	passi-so	[pássísô]	‘escape’
	ɗeha-so	[ɗéháso]	‘(be) flat’
	palla-so	[pállásô]	‘cook (v)’
	ɗokko-so	[ɗókkóso]	‘crush’
	taaɾo-so	[taáɾósô]	‘prevent’
	ʔeɾka-so	[ʔéɾkásô]	‘make’
/-eetʃa/	mook-eetʃa	[móokéetʃa]	‘bury’
	tooɾ-eetʃa	[tóoɾéetʃa]	‘accumulate’
	tʃʾiib-eetʃa	[tʃʾíibéetʃa]	‘squeeze’
/-sa/	kaanu-sa	[kaanusa]	‘grow up’
	palʔu-sa	[pálʔúsa]	‘(be) wide’
	ɾoomu-sa	[ɾóomúsa]	‘be red’

/ʔii-/	ʔii-ʔikaane	[ʔiiʔikaane]	‘be important’
	ʔii-twee	[ʔiitwee]	‘(be) dead’
	ʔii-ʔeetʃa	[ʔiiʔeetʃa]	‘crow (as a rooster) (v)’

1.4 SUMMARY OF FIELD RESEARCH

This present study builds on language research I conducted from September 2012 to June 2013 under the supervision of SIL Ethiopia and the University of Addis Ababa. I lived in Addis Ababa for two months learning Amharic, the national language of Ethiopia, before moving to Gidole, the closest town to the Mosiye.[6] While living in Gidole, I periodically went to Addis Ababa for two weeks at a time to discuss my research with my supervisor. Not counting my trips to Addis, I spent six months living in Gidole.

Because it was not viable to live among the Mosiye due to the remote location, the bulk of my field work was through regular language sessions with three Mositacha speakers who either came to Gidole on a weekly basis or lived in Gidole. Mrs. Aster Feleke Mamo came from Moro village, the village closest to Gidole. She had two small children and came to Gidole weekly for market. She had completed tenth grade. Mr. Ephrata Emiru was from Dubaysho, but he was residing in Gidole at the time, where he was attending high school.[7] He completed tenth grade during my time in Ethiopia. Ms. Werknesh Tesfaye was from Toysala. She also lived in Gidole for schooling and completed eleventh grade during my residence in Gidole.

I worked with these three Mositacha speakers to collect language data. We transcribed and recorded over fifteen hundred Mositacha words using the SIL Comparative African Wordlist (Roberts & Snider 2006) translated into Amharic by Andreas Joswig. We also recorded verb paradigms, plurals, possessives, and short sentences.

We worked together in my house, which had a large front room. It was not ideal for recording as it shared a wall with offices for the local Bible translation project. When meetings were held in these offices, voices could be heard in my house, and consequently on the recordings. Also, my house had a wooden floor which caused voices to echo. On some of the recordings, outside

[6] Gidole is approximately five kilometers away from the closest Mosiye villages.

[7] There are no secondary schools in the Mosiye region.

noises such as animals can be heard. For recording, I used an H2 Zoom Recorder. The recordings were made with Stereo settings, a 44.1kHz sampling rate, and a 16-bit resolution. During each session, the Mositacha speaker and I would work through a small wordlist, discussing the meaning of each word and transcribing it using the International Phonetic Alphabet (IPA). At the end of each session, we would record the words. Later, I entered these sound files into Audacity (http://www.audacityteam.org/) and separated each individual word into a .wav file. The IPA transcriptions and recording files were entered into a FieldWorks (http://fieldworks.sil.org/) database. All the original recordings were given to SIL Ethiopia and a hard copy of the wordlist was given to the University of Addis Ababa.

In total, the final database contains 740 nouns, 560 verbs, and 245 words of other categories. Of the 1545 total words, 1340 have at least one sound recording of the word.

2 SEGMENTAL PHONOLOGY: CONSONANTS

This chapter examines the consonant phonemes of Mositacha. In the first section, an overview of the twenty-four consonant phonemes is provided. Next, §0 offers a description of each consonant phoneme along with illustrative examples. Section 2.3 deals with four marginal phonemes which are analyzed as part of the ongoing language shift mentioned in the previous chapter. The final portion of the chapter discusses consonant adaptation within loanwords.

2.1 CONSONANT PHONEMES

There are twenty clearly attested consonant phonemes in Mositacha[8] and four additional phonemes which this analysis considers to be marginal phonemes. Apart from the marginal phonemes, the consonant phonemes found here agree with Wondwosen's (2015) findings. The table below shows these phonemes and identifies the marginal phonemes with parentheses.

Consonant Phoneme Table

	Labial	Alveolar	Palatal	Velar	Glottal
Voiceless stops	p	t		k	ʔ
Voiced stops	(b)	(d)		(g)	
Implosives	ɓ	ɗ			
Ejectives		ts'	tʃ'	k'	
Voiceless fricatives	f	s	ʃ		h
Voiceless affricates		(ts)	tʃ		
Nasals	m	n			
Laterals		l ɾ			
Approximants	w		j		

The reader should note that three of the four marginal phonemes are voiced plosives. Voicing is not common among the Konsoid languages, but the presence of voiced plosives in Mositacha

[8] This is comparable to the other two Konsoid languages, both of which have twenty-one consonant phonemes.

may be due to language shift and the increasing number of Zayse speakers in Mosiye regions. Further discussion of voicing is found in Section 2.3.1.

A second noteworthy observation about the phoneme chart is that Mositacha boasts two implosive consonants and three ejectives. While it is unusual among the world's languages to have both implosives and ejectives in one language, it is not uncommon among Cushitic languages to find implosives, ejectives or both (Mous 2012:355). Additionally, the closest neighboring languages, the Konsoid languages, contain both implosives and ejectives, so it is not surprising to find the same in Mositacha.

All the consonant phonemes can be geminated except for /ɓ/, /ts'/, and the marginal phonemes. A fuller discussion of consonant gemination is provided in chapter 4.

2.2 Description of Consonant Phonemes

In this section, a description of each consonant (including the marginal phonemes) is provided along with illustrative examples. A more in-depth description of the marginal phonemes, their distribution, and native-speaker intuition is provided in the following section (§2.3).

2.2.1 Voiceless Stops /p, t, k, ʔ/

There are four voiceless stops, all of which can be geminated. The stops /p/, /t/, and /k/ are sometimes aspirated.

/p/ is a voiceless bilabial stop.

(4)	a.	/peʔa/	[péʔa]	‘kid’
	b.	/pinano/	[pínáno]	‘animal’
	c.	/panpano/	[pánpáno]	‘second month’
	d.	/polloho/	[pollohó]	‘woodpecker’
	e.	/puuɾe/	[púuɾé]	‘rubbish’
	f.	/hekapila/	[hekapila]	‘other (men)’
	g.	/hampiɾo/	[hampiɾo]	‘bird’
	h.	/hoola-puto/	[hoolaputo]	‘flame’
	i.	/paɾpaɾotʃe/	[paɾpaɾotʃe]	‘dawn’
	j.	/ʃikisa-mpajtʃa/	[ʃíkísámpájtʃa]	‘shepherd’

/t/ is a voiceless alveolar stop. The tongue tip is usually placed slightly behind the upper teeth so that it is pronounced as a dental stop.

(5)	a.	/torɾotʃa/	[torɾotʃa]	‘story, history’
	b.	/tanka/	[taŋká]	‘honey’
	c.	/tunna/	[túnna]	‘termite hill’
	d.	/tiʔo/	[tiʔo]	‘flood (n)’
	e.	/teekatʃa/	[teekatʃa]	‘chair’
	f.	/paata/	[paatá]	‘village’
	g.	/fuulto/	[fuultó]	‘waterhole’
	h.	/kote/	[kóte]	‘wave’
	i.	/taatiso/	[táatísô]	‘strain food’
	j.	/foolanta/	[foolanta]	‘stink, smell’

/k/ is a voiceless velar stop.

(6)	a.	/kaala/	[kaalá]	‘camel’
	b.	/koonka/	[kóoŋka]	‘canoe’
	c.	/keeto/	[keeto]	‘be right, just’
	d.	/kiiɾa/	[kiiɾá]	‘tax (n)’
	e.	/kula/	[kula]	‘bulb, tuber’
	f.	/haɾka/	[haɾka]	‘hand’
	g.	/kankulu/	[kaŋkulu]	‘hoe (n)’
	h.	/kaska/	[kaska]	‘shoulder’
	i.	/ɗulka/	[ɗulká]	‘curdled milk’
	j.	/maaka/	[maaka]	‘leader’

/ʔ/ is a glottal stop.

(7)	a.	/ɗusʔe/	[ɗusʔe]	‘kidney’
	b.	/faaʔa/	[faaʔa]	‘bush’
	c.	/leeʔo/	[leeʔo]	‘moon’
	d.	/talʔe/	[tálʔe]	‘debt’
	e.	/miilusaʔa/	[miilusaʔa]	‘be clean’
	f.	/keɾʔusa/	[keɾʔusa]	‘be old (not new)’

The examples above only show the distribution of the glottal stop word-medially. While the glottal stop is phonetically present in vowel-initial words to avoid an onsetless syllable (see chapter 4 on syllable structure), native speakers may not be aware of its presence word-initially. Uusitalo (2013) notes that in neighboring Dirayta the people are not aware of the word-initial glottal stop when they write. More research is needed to determine whether or not native Mositacha speakers are aware of the glottal stop's presence word-initially. This analysis treats the glottal stop as a phoneme word-initally.

According to Mous (2012:354), the glottal stop is found in most Cushitic languages as a phoneme. When the glottal stop is present word-medially, contrast with other phonemes is clearly found. It is not surprising that there are no examples of the glottal stop as the first consonant in a consonant cluster because plosives never occur in that position unless they are geminate (see Chapter 4 for more on consonant gemination).

2.2.2 Voiced Stops /b, d, g/

There are three voiced stops, all of which are analyzed in this description as marginal phonemes. The reader is referred to §2.3 for a more complete discussion of this analysis. None of the voiced stops are found geminated.

/b/ is a voiced bilabial stop. It is the most common voiced stop in the dataset, found in over one hundred entries. In fast speech, this stop is often phonetically realized as a voiced fricative.

(8)	a.	/balbutʃe/	[balbutʃe]	'stutter'
	b.	/burtukaane/	[burtukaané]	'orange'
	c.	/kubiso/	[kuβiso]	'be hot (of objects)'
	d.	/buk'ajja/	[buk'ajja]	'shoot (new plant'
	e.	/hibo/	[híβo]	'dry season'
	f.	/hembeetʃa/	[hembeetʃa]	'call someone'
	g.	/kaba/	[kaβa]	'mouth'
	h.	/kilba/	[kilbá]	'knee'
	i.	/hajbatʃa/	[hajbatʃa]	'husband'
	j.	/ʔoboba/	[ʔoboba]	'male grandchild'

/d/ is a voiced alveolar stop.

(9)	a.	/daɾk'o/	[daɾk'o]	'small intestine'
	b.	/doge/	[doge]	'oryx'
	c.	/foɾondo/	[foɾondó]	'throat'
	d.	/goondafe/	[goondafe]	'arrow'
	e.	/k'umbajdo/	[k'umbajdó]	'smallest knife'
	f.	/maadeetʃa/	[maadeetʃa]	'help'
	g.	/zamade/	[zamadé]	'largest rat'
	h.	/tʃ'ide/	[tʃ'idé]	'chaff'
	i.	/ʔufaditta/	[ʔúfádítta]	'perspiration, sweat'

/g/ is a voiced velar stop.

(10)	a.	/goondafe/	[goondafe]	'arrow'
	b.	/gaama/	[gaama]	'mane'
	c.	/galata/	[galatá]	'praise, glory'
	d.	/gilagiste/	[gilagisté]	'small mushroom that grows in clumps'
	e.	/geegotʃa/	[géegótʃa]	'land tortoise'
	f.	/doge/	[doge]	'oryx'
	g.	/maɾgaba/	[maɾgabá]	'fan'
	h.	/ʔiigaɾɾaminkio/	[ʔiigarramiŋkio]	'dwarf'
	i.	/ʔagazane/	[ʔagazané]	'antelope'

2.2.3 Implosives /ɓ, ɗ/

There are two implosive phonemes in Mositacha, the bilabial implosive and the alveolar implosive. The bilabial implosive is an infrequent phoneme, found only fifteen times in the dataset, while the alveolar implosive is found in over 200 words. The bilabial implosive is not found geminated, while the alveolar is frequently geminated.

/ɓ/ is a voiced bilabial implosive.

(11)	a.	/ɓokʾole/	[ɓókʾóle]	‘egg’
	b.	/ɓatsʾa/	[ɓatsʾa]	‘pimple’
	c.	/ʃeeɓo/	[ʃeeɓó]	‘crocodile’
	d.	/ʃiiɓo/	[ʃiiɓó]	‘tenth month’
	e.	/kʾamɓo/	[kʾamɓó]	‘coffee’
	f.	/ʔomɓaʃa/	[ʔomɓaʃa]	‘grinding stone’
	g.	/ʔamɓa/	[ʔamɓa]	‘breast’
	h.	/he-ɓukʾul-itʃe/	[heɓugulitʃe]	‘lay eggs’
	i.	/hemɓanta/	[hemɓantá]	‘invite’

As previously noted, /ɓ/ is not a common phoneme, but it does contrast in a reasonable number of examples, occurring in the same environments as other labial consonants. It is also worth noting that my language consultant chose to write the implosive differently than the voiced plain stop.

/ɗ/ is a voiced alveolar implosive.

(12)	a.	/ɗaamo/	[ɗaamó]	‘flour’
	b.	/ɗete/	[ɗéte]	‘squirrel’
	c.	/ɗikila/	[ɗikila]	‘elbow’
	d.	/ɗooɗe/	[ɗóoɗe]	‘vine’
	e.	/ɗulka/	[ɗulká]	‘curdled milk’
	f.	/meɾaɗo/	[meɾaɗo]	‘children’
	g.	/hajɗo/	[hajɗo]	‘fat’
	h.	/honɗa/	[honɗa]	‘love’

2.2.5 Ejectives /tsʼ, tʃʼ, kʼ/

There are three ejectives in Mositacha.

/tsʼ/ is an alveolar affricate ejective. This is the least common of the ejectives with only thirty-five examples found in the dataset. It is the only ejective not found geminated.

(13)	a.	/tsʼukʼe/	[tsʼukʼe]	‘ring finger’
	b.	/tsʼaaɾotʃa/	[tsʼaaɾotʃa̰]	‘earthenware cooking pot’
	c.	/tsʼeeta/	[tsʼeetá]	‘one hundred (100)’
	d.	/tsʼinkʼa/	[tsʼíŋkʼa]	‘grass’
	e.	/tsʼotsʼetʃa/	[tsʼotsʼetʃa]	‘hang up’
	f.	/kʼiɾtsʼetʃa/	[kʼiɾtsʼetʃa]	‘earring’
	g.	/ɓatsʼa/	[ɓatsʼa]	‘pimple’
	h.	/faatsʼo/	[fáatsʼo]	‘branch of tree’
	i.	/kʼiltsʼime/	[kʼiltsʼime]	‘bone marrow’

/tʃʼ/ is a voiceless palatal affricate ejective.

(14)	a.	/tʃʼolta/	[tʃʼolta]	‘blind person’
	b.	/tʃʼaatʃʼa/	[tʃʼáatʃʼa]	‘quarrel’
	c.	/tʃʼide/	[tʃʼidé]	‘chaff’
	d.	/tʃʼuuluka/	[tʃʼuuluká]	‘leprosy’
	e.	/kʼintʃʼo/	[kʼintʃʼo]	‘thread’
	f.	/hobatʃʼa/	[hobatʃʼa]	‘armpit’

/kʼ/ is a voiceless velar ejective. Found over two hundred times in the dataset, it is the most common ejective.

(15)	a.	/daɾkʼo/	[daɾkʼo]	‘small intestine’
	b.	/ɗullukʼo/	[ɗullukʼo]	‘abscess’
	c.	/kʼoɗe/	[kʼoɗe]	‘pap, mushy food’
	d.	/kʼeeɗɗo/	[kʼeeɗɗo]	‘marriage’
	e.	/kʼintʃʼo/	[kʼintʃʼo]	‘thread’
	f.	/kʼawwa/	[kʼawwá]	‘thunder’
	g.	/ɗookʼo/	[ɗókʼo]	‘be sour’
	h.	/hekʼa/	[hékʼa]	‘ringworm’
	i.	/masalkʼo/	[masalkʼo]	‘snail’
	j.	/tsʼinkʼa/	[tsʼíŋkʼa]	‘grass’

When found intervocalically or following [ŋ], the velar ejective /k'/ is often realized as [g] as the following examples show.

(16)	a.	/he-tʃik'aʃe/	[hetʃigaʃe]	'look at, watch'
	b.	/mana-tʃik'aso/	[mánátʃígáso]	'bathing place'
	c.	/najk'iso/	[nájgísô]	'destroy, spoil'
	d.	/ʃonk'a/	[ʃóŋga]	'guitar'
	e.	/he-ɓuk'uli-tʃe/	[heɓugulitʃe]	'lay (eggs)'

It is worth emphasizing that the ejective /k'/ clearly contrasts with the plain velar stop /k/ as demonstrated by the examples listed below.

(17)	a.	[k'intʃ'o]	'thread'	b.	[kiiɾá]	'tax (n)'
	c.	[k'awwá]	'thunder'	d.	[kaalá]	'camel'
	e.	[ts'íŋk'a]	'grass'	f.	[kaŋkulu]	'hoe (n)'
	g.	[masalk'o]	'snail'	h.	[ɗulká]	'curdled milk'

2.2.6 Nasals /m, n/

The two nasals in Mositacha are the bilabial nasal and the alveolar nasal.

/m/ is a voiced bilabial nasal.

(18)	a.	/maaka/	[máaka]	'snake'
	b.	/mole/	[móle]	'fish'
	c.	/meetʃa/	[méetʃa]	'child'
	d.	/mulmule/	[múlmúle]	'be smooth
	e.	/miintʃa/	[miintʃa]	'south'
	f.	/kamana/	[kamaná]	'cow (female)'
	g.	/k'amɓo/	[k'amɓó]	'coffee'
	h.	/piʃma/	[piʃmá]	'curse'
	i.	/tilma/	[tilmá]	'ditch'
	j.	/tiimpa/	[tiimpa]	'biggest drum'
	k.	/ɗaamo/	[ɗaamó]	'flour'

/n/ is a voiced alveolar nasal. It assimilates to the place of articulation of a following velar consonant.

(19)	a.	/nunhinta/	[nunhintá]	‘brain’
	b.	/nanho/	[nanho]	‘shame’
	c.	/konte/	[konté]	‘hoe’
	d.	/hona/	[honá]	‘be deep’
	e.	/mano/	[máno]	‘potter’
	f.	/banbanatʃa/	[banbanatʃa]	‘dung beetle’
	g.	/pinano/	[pínáno]	‘animal’
	h.	/ʔents’ɪretʃa/	[ʔents’ɪretʃa]	‘tongue’
	i.	/ʃonk’a/	[ʃóŋk’a]	‘guitar’
	j.	/manko/	[máŋko]	‘strength’

2.2.7 Fricatives /f, s, ʃ, h/

There are four fricatives in Mositacha.

/f/ is a voiceless labiodental fricative. It is rarely found in a consonant cluster.

(20)	a.	/faats’o/	[fáats’o]	‘branch of tree’
	b.	/feelaso/	[féeláso]	‘run away, flee’
	c.	/fiɪra/	[fiɪrá]	‘flower’
	d.	/foɾondo/	[foɾondó]	‘throat’
	e.	/fuka/	[fúka]	‘fox’
	f.	/hafufe/	[hafufe]	‘blow with mouth’
	g.	/naɾfetʃa/	[naɾfetʃa̰]	‘needle’

As shown in example (21) below, /f/ and /p/ are in free variation with each other word-initially. In all other contexts, /f/ and /p/ contrast.

(21)	a.	/paraso/	[parasó] ~ [farasó]	‘horse’
	b.	/fuuta/	[fúuta] ~ [púuta]	‘cotton’
	c.	/fafa/	[fáfa] ~ [páfa]	‘python’
	d.	/fule/	[fulé] ~ [pulé]	‘club, cudgel’

/s/ is a voiceless alveolar fricative.

(22)	a.	/sajɗo/	[sájɗo]	‘song’
	b.	/senna/	[sénna]	‘feast’
	c.	/sooma/	[soomá]	‘witchcraft’
	d.	/sura/	[sura]	‘rope’
	e.	/ʔisko/	[ʔísko]	‘star’
	f.	/sino/	[sino]	‘nose’
	g.	/pootumsa/	[pootumsa]	‘be white’
	h.	/horsisootʃa/	[horsisootʃa]	‘punish’
	i.	/ɗusʔe/	[ɗusʔe]	‘kidney’

/ʃ/ is a voiceless palatal fricative.

(23)	a.	/ʃaak’ota/	[ʃaak’ota]	‘jaw’
	b.	/ʃeeɓo/	[ʃeeɓó]	‘crocodile’
	c.	/ʃonk’a/	[ʃóŋk’a]	‘guitar’
	d.	/ʃiiɓo/	[ʃiiɓó]	‘tenth month’
	e.	/ʃumetʃa/	[ʃumetʃa]	‘mushroom’
	f.	/heʃa/	[héʃa]	‘wife’
	g.	/parʃane/	[párʃáne]	‘day after tomorrow’

When /ʃ/ is found in the final syllable of a word and intervocalically, it is often phonetically realized as [ʒ]. This is clearly seen in the perfective third person singular verb forms. In the masculine form, when the fricative /ʃ/ is intervocalic, it is realized as [ʒ]. When the final consonant geminates for the feminine form, the geminate consonant is /ʃ/.

(24)	Masculine		Feminine	
	a.	[lehhaʒe]	[helehhaʃʃe]	‘descend, go down’
	b.	[heɗeeβoʒe]	[heɗeeβoʃʃe]	‘(be) thirsty, thirst (v)’
	c.	[heeskaʒe]	[heeskaʃʃe]	‘(be) lying down’

/h/ is a voiceless glottal fricative

(25)	a.	/haampiɾo/	[haampiɾo]	‘bird’
	b.	/heekotʃa/	[heekotʃa]	‘sheep’
	c.	/hiɾba/	[hiɾbá]	‘music’
	d.	/holbok’a/	[holbok’á]	‘valley’
	e.	/hussa/	[hussá]	‘country, ethnic area’
	f.	/mooha/	[móoha]	‘god’
	g.	/haɾhaɾo/	[haɾhaɾo]	‘warthog’
	h.	/nunhinta/	[nunhintá]	‘brain’

2.2.8 Affricates /tʃ, ts/

There are two affricates in Mositacha.

/tʃ/ is a voiceless palatal affricate. This is a very frequent consonant in Mositacha with 550 occurrences in the dataset.

(26)	a.	/tʃeemo/	[tʃéemo]	‘eyebrow’
	b.	/tʃiitʃa/	[tʃiitʃá]	‘hate’
	c.	/tʃolo/	[tʃoló]	‘mortar, pounding pot’
	d.	/tʃutʃute/	[tʃutʃuté]	‘chick’
	e.	/ɗeesotʃa/	[ɗeesotʃa]	‘shame’
	f.	/tʃaatʃitʃa/	[tʃaatʃitʃa]	‘ankle’
	g.	/ɗammajtʃa/	[ɗámmájtʃa]	‘cold weather’
	h.	/ɗantʃa/	[ɗantʃa̰]	‘calabash’
	i.	/haɾtʃa/	[haɾtʃa]	‘ninth month’
	j.	/kaaʔaltʃa/	[káaʔáltʃa]	‘jackal’

There is a phonological isogloss identified by Wondwosen (2000) with /tʃ/ in north Mosiye and /t/ in west Mosiye. Current research by the author also found this correspondence as seen in the following examples.

	North Bussa	West Bussa	
(27)	a. [méetʃa]	[méeta]	‘child’
	b. [ʔantʃo]	[ʔanto]	‘1.SG’
	c. [ʔanɗotʃa]	[ʔanɗota]	‘peace (common greeting)’

/ts/ is an alveolar affricate which occurs only three times in the dataset. For more on this marginal phoneme, the reader is referred to Section 2.3.2.

(28)	a. /tsillo/	[tsilló]	‘(be) perfect’
	b. /heka-holtsa/	[hékáhóltsa]	‘(be) heavy’
	c. /holtsina/	[hóltsína]	‘laugh’

2.2.9 Liquids /l, ɾ/

/l/ is a voiced alveolar lateral.

(29)	a. /kʾoola/	[kʾoolá]	‘hide of animal’
	b. /kilba/	[kilbá]	‘knee’
	c. /kalʃuma/	[kalʃumá]	‘west’
	d. /fuulto/	[fuultó]	‘waterhole’
	e. /ɗulka/	[ɗulká]	‘curdled milk
	f. /laale/	[láale]	‘herd of cattle’
	g. /leeʔo/	[leeʔo]	‘moon’
	h. /liisotʃa/	[líisótʃa]	‘whip’
	i. /loolatʃa/	[loolátʃá]	‘horn (musical instrument)’
	j. /luhhale/	[luhhale]	‘chicken’

/ɾ/ is a voiced alveolar flap. When geminated, it is realized as a trill.

(30)	a. /fiiɾa/	[fiirá]	‘flower’
	b. /haɾka/	[haɾka]	‘hand’
	c. /kʾaɾta/	[kʾaɾtá]	‘goiter’
	d. /ɾabootʃa/	[ɾabootʃa̰]	‘fiancé’
	e. /ɾifantʃa/	[ɾífántʃa̰]	‘fur’
	f. /ɾukkeetʃa/	[ɾukkeetʃa]	‘be silent’
	g. /ɾentʃehiɗe/	[ɾentʃehíɗe]	‘calm oneself’
	h. /ɾotʃeetʃa/	[ɾótʃéetʃa]	‘throw’

2.2.10 Approximants /w, j/

/w/ is a voiced labial approximant.

(31)	a.	/waaɾia/	[waaɾia]	‘thing’
	b.	/wote/	[wote]	‘season’
	c.	/wufano/	[wufano]	‘bull’
	d.	/k’awa/	[k’awa]	‘hollow out log’
	e.	/k’aawa/	[k’aawa]	‘doorframe’
	f.	/pawawa/	[pawawá]	‘throb with pain’
	g.	/ʔawwe/	[ʔawwe]	‘today’
	h.	/piilawa/	[piilawá]	‘knife’
	i.	/ʔuuwo/	[ʔuuwó]	‘yes’

/j/ is a voiced palatal approximant.

(32)	a.	/jajjaro/	[jajjaró]	‘bat’
	b.	/jook’o/	[jook’o]	‘grind’
	c.	/jiʃawe/	[jiʃawe]	‘bow (for hunting)’
	d.	/k’ajjo/	[k’ajjó]	‘smoke’
	e.	/majto/	[majtó]	‘ox’
	f.	/hajɗo/	[hajɗo]	‘fat’
	g.	/hajna/	[hájna]	‘roof’
	h.	/heka-najk’a/	[hekanajk’a]	‘few’
	i.	/kajliʃa/	[kájlíʃa]	‘flock of birds’

2.3 Marginal Phonemes

In this section, the marginal phonemes previously noted in parentheses in the phoneme table given above in §2.1 are discussed in greater detail.

2.3.1 Voiced stops /b, d, g/

Unlike other Lowland East Cushitic languages, both Konso and Dirayta lack voiced stops, a phenomenon that Ongaye calls a “Konsoid innovation” (2013:7). Although Mositacha is a Konsoid language, it does not completely lack voiced stops. The status of voiced stops within Mositacha is rather muddled. Previous work, such as the wordlist given in the Survey of Little-

Known Languages of Ethiopia (Wedekind, 2002), analyzed voiced stops in Mositacha as allophones of the voiceless stops. Similarly, Wondwosen's recent grammar (2015) does not list voiced stops in the phoneme chart. Nevertheless, the current dataset does not suggest such a clear-cut answer. Consider the following examples:

(33)	/p/		/b/	
	[pánpáno]	'second month'	[banbanatʃa]	'dung beetle'
	[tomposá]	'breastbone'	[kómbótʃo]	'maize, corn'
	[ʔallapátʃe]	'lose'	[kallabanne]	'daytime'

(34)	/t/		/d/	
	[turka]	'demon, evil spirit'	[darkʾo]	'small intestine'
	[torrotʃa]	'story, history'	[dólítʃa]	'dove'
	[kóte]	'wave'	[tʃʾidé]	'chaff'
	[hórsánta]	'dance (n)'	[forondó]	'throat'

(35)	/k/		/g/	
	[kaalá]	camel	[gaama]	'mane'
	[kula]	'bulb, tuber'	[gune]	'rib'
	[húke]	'(be) stubborn'	[doge]	'oryx'
	[heekotʃa]	'sheep'	[géegótʃa]	'land tortoise'

These examples show voiced and voiceless stops occurring in the same environments, including word-initially, intervocalically, and in consonant clusters. (Consonants are not found word-finally in Mositacha.) Because there is a consistent difference in voicing (i.e. the voiced stops are always pronounced as voiced stops and the voiceless stops as voiceless stops), this is not a matter of free variation.

A significant number of voiced stops in the dataset are found in borrowed words, mostly from the neighboring Zayse language, and are now in common use in the language (see §2.4 for more on consonant adaptation in loanwords). There are also a significant portion of voiced stops found intervocalically. Most of the voiceless stops that are intervocalic are primarily found at morpheme boundaries. Within the context of a lexcial phonology framework, one might be able to argue for a lexical rule that voiceless stops are realized as voiced stops when intervocalic. Yet this does still does not account for all the lexical items.

The examples in (36) are not known to be loanwords. They also contain voiced stops word-initially and in consonant clusters, both of which are environments where voiceless stops also occur. The distribution of the voiced stops in these examples is the same as the distribution of the voiceless stops.

(36) a. [baʃʃak'eetʃa] 'contradict'
b. [banbanatʃa] 'dung beetle'
c. [balbutʃe] 'stutter'
d. [daɾk'o] 'small intestine'
e. [dink'ak'aɾó] 'millipede'
f. [goofaɾe] 'crest of bird'
g. [gilagisté] 'smallest mushroom that grows in clumps'

If we consider native speaker intuition regarding voiced stops, we find that there is not a consensus. There seems to be some dialect variation present that is influenced by the language shift previously mentioned in Chapter 1. This became evident during a discussion between one speaker from a village with significant Zayse influence, and another speaker from a village with less Zayse influence. The discussion surfaced when I tried to clarify the name of the second speaker's home village. Those from this village called it *Toysala* while the first speaker and others from Zayse-speaking areas called the same village *Doysala.* Those involved in the discussion were clearly aware of the difference in pronunciation but they attributed it to a difference in dialect. The same voicing difference in the bilabial plosives is seen in example (37).

(37)	[hiɾbá]	'music'	Dubaysho dialect
	[hiɾpá]		Toysala dialect

When native speakers are confronted on the difference in pronunciation, they do not deny that there is a difference; however, they simply attribute it to a dialect difference.

The difficulty in establishing clear complementary distribution, the presence of ongoing language change, and the different dialects within Mositacha lead me to consider voiced stops as marginal phonemes. I conclude that in the areas closer to Zayse which are undergoing language shift, the voiced plosives are slowly becoming phonemic due to the influence of Zayse. Nevertheless, in southern Mosiye areas not yet heavily influenced by Zayse or Gamo, it

is most likely that voiced stops have not gained phonemic status which is why this analysis considers the voiced stops to have marginal phonemic status.

2.3.2 Alveolar affricate /ts/

The fourth and final marginal phoneme is the alveolar affricate, which is only found three times in the dataset. These three examples are listed below.

(38) a. [tsilló] ‘(be) perfect’ (Zayse)
b. [hékáhóltsa] ‘(be) heavy’
c. [hóltsína] ‘laugh’

A few observations can be made regarding these examples. First of all, example (38) is known to be a Zayse word. In Zayse, /ts/ is a phoneme. Secondly, the remaining examples in (38) are found in the same environment – following /l/. The alveolar affricate contrasts with the alveolar ejective in this environment. Note the following examples in (39).

(39) a. [k’ilts’ime] ‘bone marrow’
b. [malts’ats’inetʃa] ‘sweet potato’

It is interesting to note that the wordlist in the Survey of Little-Known Languages of Ethiopia (Wedekind 2002) transcribes (38c) as [holsinə], suggesting that either speaker variation or language shift has occurred. It is also worth noting that my language consultant could clearly identify the difference between the affricate and the alveolar ejective.

The contrast between the ejective and affricate suggests that /ts/ is a phoneme, albeit a marginal one due to the lack of occurrences in the dataset. The low frequency of /ts/ makes its status as a marginal phoneme tentative. Due to language contact, lexical borrowing, and ongoing language shift, /ts/ may be a phoneme in the Mosiye areas heavily influenced by Zayse.

2.4 Consonant Adaptations in Loanwords

In this section, we examine the consonant changes that occur in loanwords when they are assimilated into the Mositacha lexicon. Over one hundred seventy entries in the dataset are lexically similar to words in Amharic and Zayse.[9] While the direction of borrowing is unknown, particularly with regards to Zayse lexical items, it is interesting to note that some, but not all, of the consonants in the Mositacha lexical items are voiceless compared to the voiced counterpart in the lexically similar word.

[9] The wordlist was not checked for lexical similarities between Dirayta and Konso; only with Zayse and Amharic.

First of all, in some of the lexically similar words, Mositacha stops have become voiceless. When this change in voicing occurs, it applies to all the stops and sibilants in that lexical item, as seen below.

(40)	a.	[timpa]	'biggest drum'	*dimba* (Zayse)
	b.	[púto]	'fire'	*budo* (Zayse)
	c.	[taŋkala]	'ladder'	*gandala* (Zayse)
	d.	[kaɟɾó]	'boast, brag'	*gairo* (Zayse)
	e.	[sóɾe]	'advise'	*zore* (Zayse)

Other times, no phonological change is made to the borrowed words as in (41).

(41)	a.	[galunda]	'(be) yellow'	same in Zayse
	b.	[foɾondó]	'throat'	same in Zayse
	c.	[doge]	'oryx'	same in Zayse
	d.	[ʔazgané]	'large antelope'	same in Zayse
	e.	[sangá]	'steer'	same in Oromo
	f.	[hollozó]	'hyena'	same in Zayse

Often Mositacha morphology is affixed to the borrowed word, regardless of whether or not the voicing changes. This group of examples show loanwords that do not have the same voicing as the source word, but have been affixed with Mositacha morphology. The exact function of the Mositacha morphemes has yet to be discovered, but *–ʧa* and *–eetʃa* seem to be common morphemes.

(42)	a.	/piɾɾi-tʃa/	[pírrítʃa]	'silver'	*birr* (Amharic)
	b.	/puni-ta/	[púníta]	'coffee'[10]	*bunna* (Amharic)
	c.	/toor-eetʃa/	[tooɾeetʃa]	'store up'	*doore* (Zayse)
	d.	/mook-eetʃa/	[móokéetʃa]	'bury'	*mogo* (Zayse)

In the next group of words, we see examples of loanwords that retain the voicing found in the source word but incorporate Mositacha morphology. Again the exact function of the morphemes here is not completely known, although it is known that the *–itʃa* morpheme in (42a) is a feminine marker (Wondwosen 2015).

[10] Mositacha has its own native word for coffee: [k'amɓo].

(43)	a.	/ʔeeb-ajʃ-itʃa/	[ʔeebajʃitʃa]	‘stupid person (f)’	*eeba* (Zayse)
	b.	/burtukaan-e/	[burtukaané]	‘orange’	*burtukaan* (Amharic)

Further study of consonant and vowel changes in loanwords would be an interesting area for future exploration.

3 SEGMENTAL PHONOLOGY: VOWELS

Mositacha contains several typical Cushitic vowel features. These include a five vowel phoneme inventory, phonemic vowel length, and voiceless (or "whispered" vowels) word-finally. This chapter begins with the phonemic inventory of vowels in Mositacha in §3.1 followed by a discussion of the phonetic quality of the vowels including formant measurements in §3.2. Examples of short vowels are then provided in §3.3 and examples of long vowels in §3.4. The chapter concludes with a discussion of voiceless vowels in §3.5.

3.1 VOWEL PHONEME INVENTORY

The typical Cushitic vowel system has five vowels with phonemic length (Mous 2012). There are a few exceptions to this, such as the Agaw (or Central Cushitic) languages, which have six vowels and no phonemic vowel length, and Somali (East Cushitic), which has both phonemic vowel length and ATR harmony, leading to a total of twenty vowel phonemes (Mous 2012:353, Puglielli 1997). Mositacha, in accordance with the other Lowland East Cushitic languages, exhibits the typical Cushitic five-vowel system with phonemic length (Wedekind 1989:108). Konso and Dirayta, the other two languages that form the Konsoid dialect chain along with Mositacha, are also characterized by this same vowel system (Sim 1977; Ongaye 2013; Wondwosen 2006; Uusitalo 2013). In the vowel phoneme table below, the five Mositacha vowel qualities, for both long and short vowels, are shown.

	Front	Central	Back
High	i ii		u uu
Mid	e ee		o oo
Low		a aa	

Table 1: Mositacha Vowel Phoneme Table

3.2 PHONETIC QUALITY OF VOWELS

In this section, we examine the phonetic quality of both long and short Mositacha vowels. The high vowels are auditorily similar to the English high vowels /i/ and /u/, however, there is some fluctuation particularly among the short high vowels. When the short high vowels are found in closed syllables, they often sound slightly more lax and centralized, similar to the IPA vowels [ɪ] and [ʊ]. The long high vowels, on the other hand, retain the more tense auditory impression represented by the IPA symbols [i] and [u]. There is also fluctuation among the mid vowels. The vowel quality can vary from +ATR-like (tense) vowels to –ATR-like (lax) vowels. In general, though, the mid-vowels are similar to the English mid vowels /e/ and /o/. The low vowel, which is similar to the *a* in the English word *father,* is often slightly raised word-finally.

3.2.1 Accoustic Measurements and Formant Plots

Figure 6 below shows a formant plot for the average values of the five short vowels: /i e a o u/. For each vowel, five target words were carefully chosen for investigation. These target words were selected because the vowel being measured did not precede or follow approximant or nasal consonants. Most of the measured vowels were in non-final syllables because of the tendency of word-final vowels to be whispered or weaker. All of the words measured are the speech of the same adult male speaker from the author's recordings of the Comparative African Wordlist.[11] For the complete list of all the words used in these measurements, the reader is referred to Appendix A.

Formant measurements were made using the formant tracks in the Speech Analyzer 3.1 software program, available at http://www-01.sil.org/computing/sa/sa_download.htm. The measurements were consistently taken at or slightly after the middle of the vowel being measured. These measurements affirm the auditory impressions mentioned briefly above.

[11] As mentioned previously in Chapter 1, the recordings were made using an H2 Zoom Recorder, with Stereo settings, a sampling rate of 44.1kHz, and a 16-bit resolution.

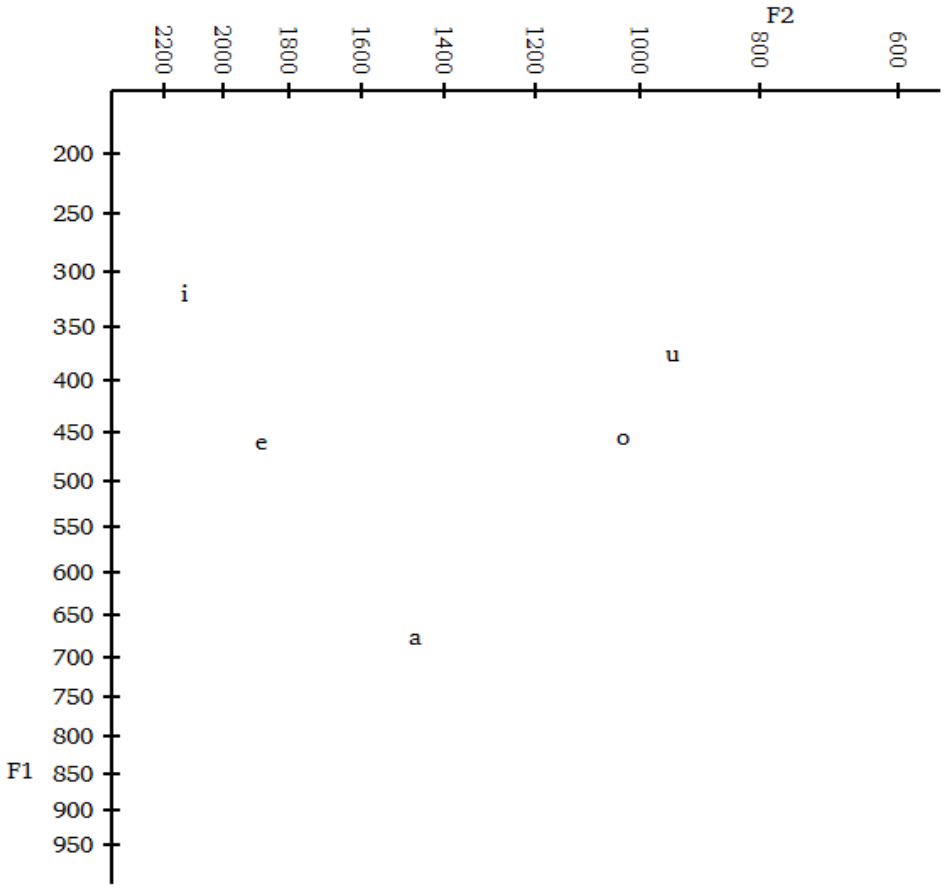

Figure 6: Formant plot of Mositacha short vowels (average values only)

While the acoustic spacing of the vowels in this plot is typical of a five-vowel system, a couple of comments can be made. First of all, the most striking observation is that the high back vowel /u/ has a lower position than the high front vowel /i/. In contrast, the mid vowels share a very similar F1 value, and thus, are located at similar heights on the formant plot. The mid vowels are also slightly more central than the high vowels, while the low vowel is decidedly more central than all the other vowels. These same observations can be made of the long vowels shown in the formant plot in the figure below.

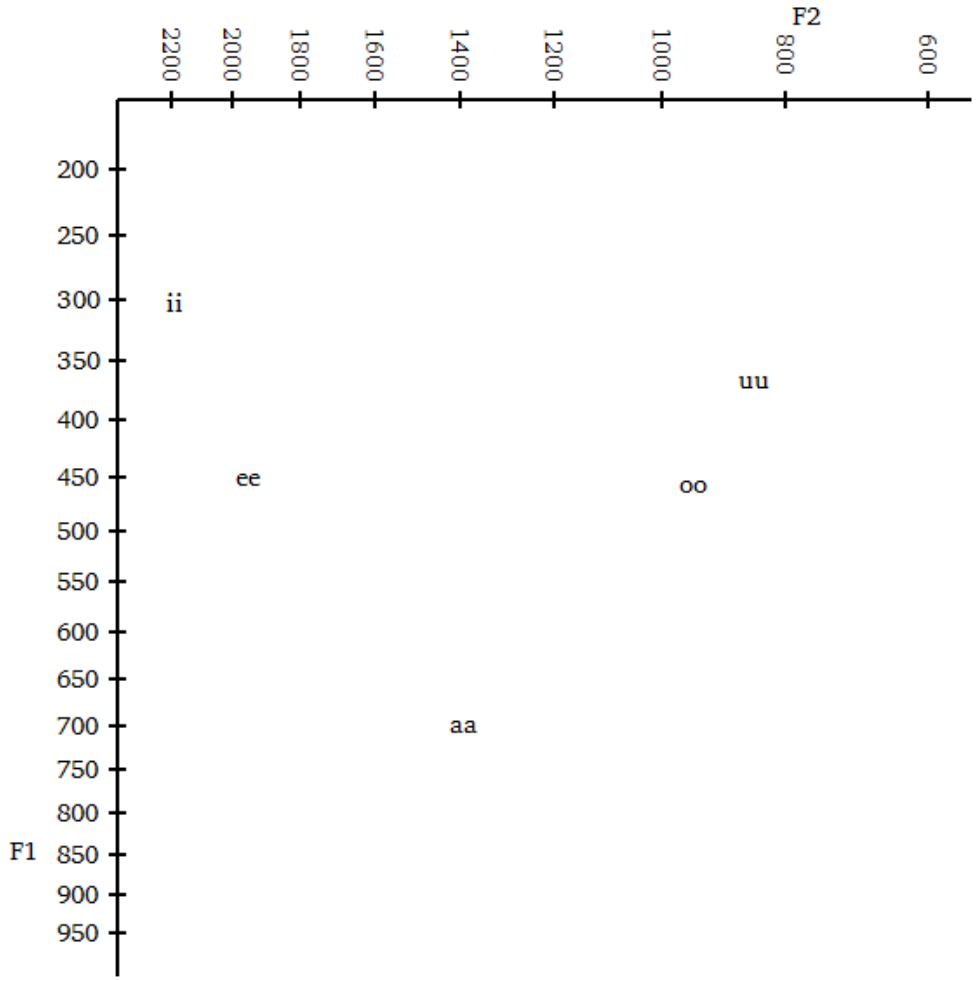

Figure 7: Formant plot of Mositacha long vowels (average values only)

It has been noted by Mous (2012), Wedekind (1989), and others that in some Cushitic languages short vowels tend to be more lax and centralized than their long vowel counterparts. For example, Lloret (1997) notes that in the Lowland East Cushitic language Oromo this distinction between the short and long vowels is most noticeable in the unrounded vowels /i e a/ (1997:496). This tendency of short vowels to be more lax and centralized is seen to some extent in Mositacha, particularly in closed syllables. It is particularly noticeable in the high vowels in the context of closed syllables which, in a narrow phonetic transcription based on auditory impressions, may sometimes be transcribed using the IPA symbols [ɪ] and [ʊ]. The figure below shows a formant plot with the average formant values of both long and short vowels previously shown separately in Figures 6 and 7. The reader will note that the quality of the vowels is remarkably similar for both long and short vowels, but the short vowels are indeed slightly more centralized than the long vowels.

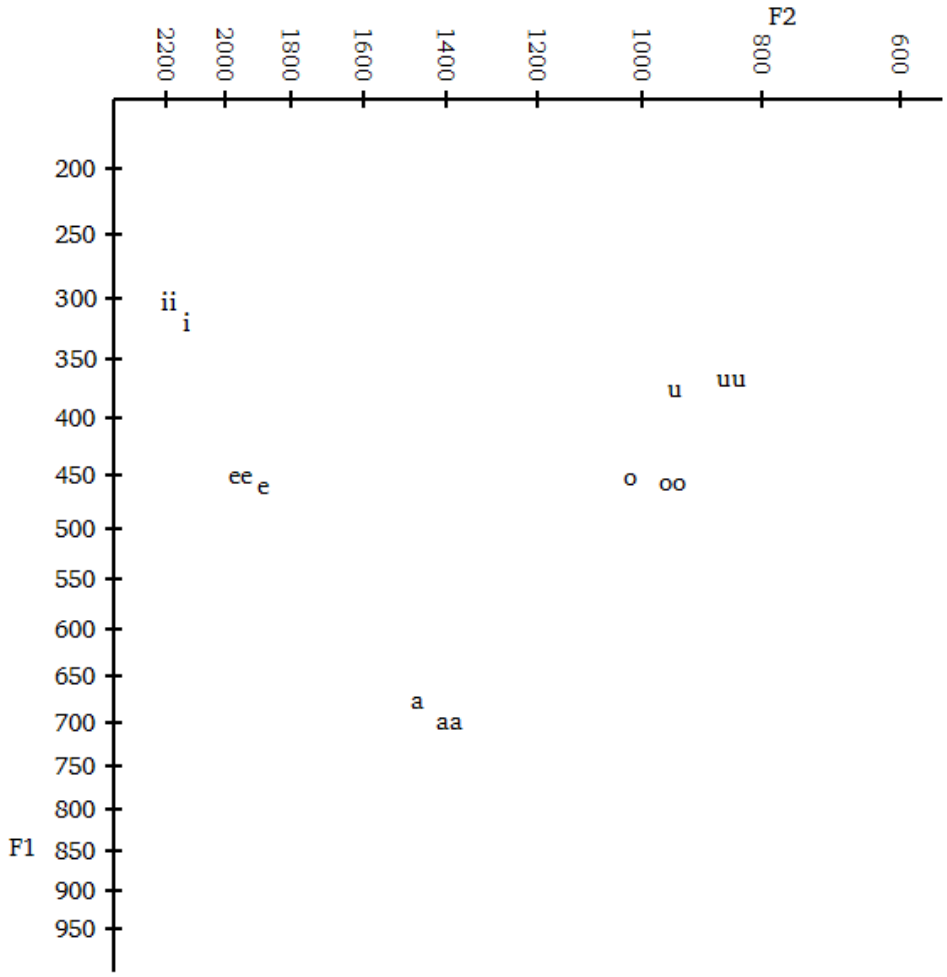

Figure 8: Formant plot of Mositacha long and short vowels (average values only)

In word-final positions, the short low vowel /a/ is more raised relative to other word positions. The figure below is a formant plot showing the measurements of /a/ in both long and short forms word-medially. In the formant plot, the phonetic symbols [aa] and [a] are used to distinguish long and short vowels respectively, and the phonetic symbol [ʌ] is used to distinguish the word-final short /a/ vowels from the word-medial /a/ vowels. It is not easy to measure word-final vowels in Mositacha because they tend to be more voiceless, which means that the formants do not easily show up in the spectrogram. Thus, the target words chosen to measure the word-final vowels in Figure 9 were carefully selected to ensure the word-final vowels were loud enough for the formants to easily measure in the spectrogram.

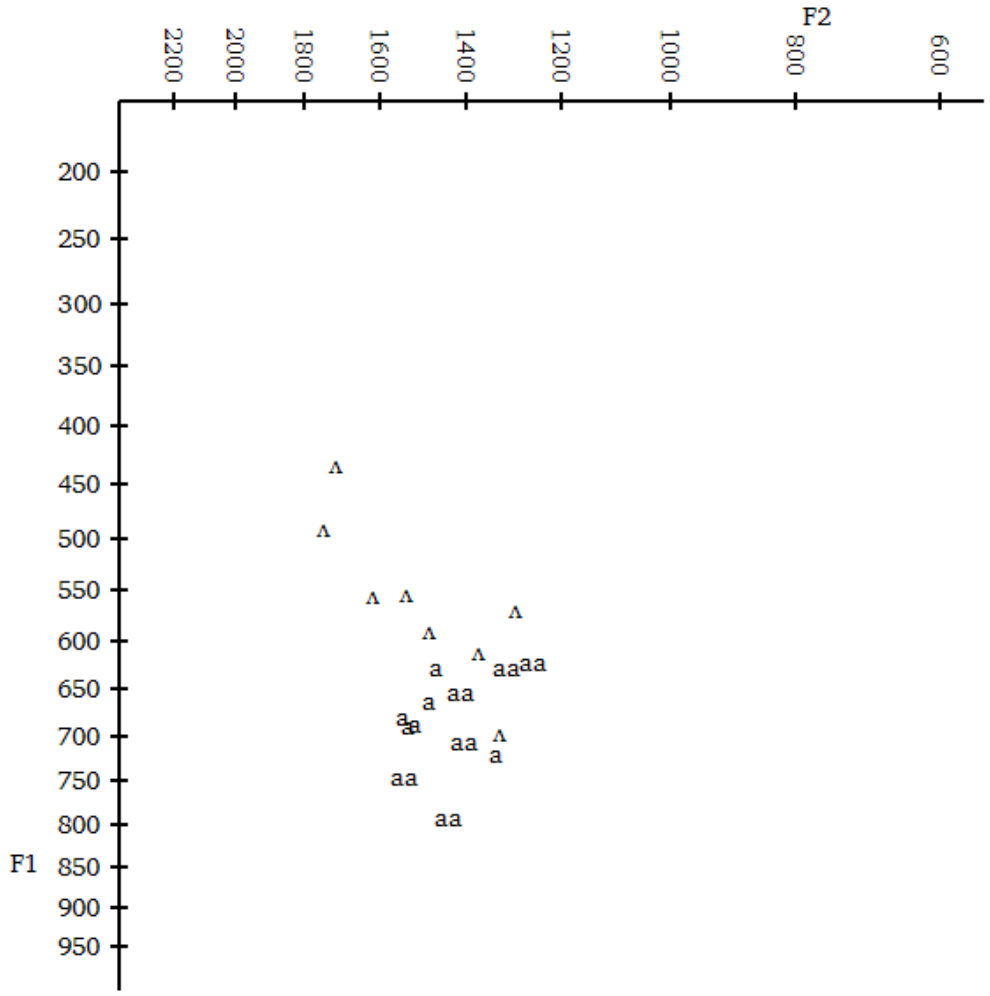

Figure 9: Formant plot showing values of the low vowel

3.3 EXAMPLES OF SHORT VOWELS

The following are examples of each vowel phoneme in a variety of contexts. Long vowels are treated separately in the following section.

(44) Examples of /i/

a.	/hini/	[híni]	‘this’
b.	/hitsʾa/	[hitsʾá]	‘fireplace’
c.	/tʃʾide	[tʃʾidé]	‘chaff’
d.	/ɗina/	[ɗĭna]	‘umbilical cord’
e.	/heni/	[heni]	‘five (5)’
f.	/kilba/	[kilbá]	‘knee’
g.	/ʔisko/	[ʔísko]	‘star’
h.	/ɗirtʃa/	[ɗĭrtʃa]	‘boy’
i.	/pakʾina/	[pakʾina]	‘river’
j.	/ʃikiso/	[ʃíkíso]	‘feed animals’
k.	/hittina/	[hittina]	‘descendant’
l.	/ɗikila/	[ɗikila]	‘elbow’

(45) Examples of /e/

a.	/ɗete/	[ɗéte]	‘squirrel’
b.	/heʔe/	[heʔe]	‘2SG.MASC’
c.	/lemme/	[lémme]	‘father’
d.	/ɗale/	[ɗăle]	‘medicine’
e.	/ʔeʃo/	[ʔeʃó]	‘no’
f.	/hema/	[héma]	‘hunt (v)’
g.	/hekʾa/	[hékʾa]	‘ringworm’
h.	/mekʾete/	[mékʾéte]	‘bone’
i.	/ɓokʾole/	[ɓókʾóle]	‘egg’
j.	/ʃumetʃa/	[ʃumetʃa]	‘largest mushroom’
k.	/ʔeɾkama/	[ʔeɾkama]	‘work’
l.	/kʾetʃine/	[kʾetʃine]	‘giraffe’
m.	/puʃeetʃa/	[púʃéetʃa]	‘harvest, dig up’
n.	/ʔarrele/	[ʔarrele]	‘eighth month’

(46) Examples of /a/

a.	/fafa/	[fáfa]	‘python’
b.	/hajna/	[hájna]	‘roof’
c.	/daɾkʾo/	[daɾkʾo]	‘small intestine’
d.	/ʔaʃo/	[ʔaʃó]	‘ancestor’
e.	/ɗale/	[ɗále]	‘medicine’
f.	/ɗina/	[ɗína]	‘umbilical cord’
g.	/hekʾa/	[hékʾa]	‘ringworm’
h.	/koka/	[kóka]	‘beeswax’
i.	/ɗulka/	[ɗulká]	‘curdled milk’
j.	/kamana/	[kamaná]	‘cow’
k.	/ʔaɾeetʃa/	[ʔáɾéetʃa]	‘drive away’
l.	/ɗikkaso/	[ɗíkkásô]	‘befit, suit’
m.	/hobatʃa/	[hóbátʃa]	‘footprint’
n.	/kalʃuma/	[kalʃumá]	‘west’
o.	/hahawatʃa/	[háhawátʃa]	‘ibis’

(47) Examples of /u/

a.	/luʃa/	[lúʃa]	‘leg’
b.	/ʔulo/	[ʔulo]	‘leech’
c.	/húke/	[húke]	‘stubborn’
d.	/ɗulka/	[ɗulká]	‘curdled milk’
e.	/ɗusumu/	[ɗusumú]	‘doorway’
f.	/saɾkuma/	[saɾkuma]	‘relative’
g.	/kulkama/	[kulkama]	‘vulture’
h.	/hullube/	[hullubé]	‘afternoon’
i.	/sulule/	[sulule]	‘flute’
j.	/ʔuʃukʾa/	[ʔuʃukʾa]	‘open place, clearing’
k.	/sultube/	[sultubé]	‘rainy season’
l.	/kʾuɗɗetʃa/	[kʾúɗɗétʃa]	‘thorn’
m.	/ɗuheetʃa/	[ɗúhéetʃa]	‘close, shut’

(48) Examples of /o/

a.	/ʔolo/	[ʔolo]	‘olden times’
b.	/moto/	[moto]	‘beer’
c.	/hona/	[honá]	‘be deep’
d.	/kote/	[kóte]	‘wave’
e.	/ɗamo/	[ɗámo]	‘food’
f.	/hibo/	[híbo]	‘dry season’
g.	/ʔeko/	[ʔeko]	‘tail’
h.	/puto/	[púto]	‘fire’
i.	/faatsʾo/	[fáatsʾo]	‘tree branch’
j.	/holma/	[holmá]	‘nape of neck’
k.	/koboɾo/	[koboɾo]	‘ear, leaf’
l.	/ʃomboko/	[ʃombokó]	‘bamboo’
m.	/ɓokʾole/	[ɓokʾolé]	‘egg’
n.	/holbokʾa/	[hólbókʾa]	‘footprint’

3.4 VOWEL LENGTH

As already noted, vowel length is a common feature among Cushitic languages (Wedekind 1989; Mous 2012), and Mositacha is no exception. Contrasting examples of long and short vowels are given in (49) through (53) below. The examples given are both impressionistically longer, and, as we will see later in this section, have longer measured duration values.

(49) **i-ii**

a.	[sino]	‘nose’	b.	[siibá]	‘crowd’
c.	[fiɾo]	‘birdlime’	d.	[fiiɾá]	‘flower’
e.	[ɗikila]	‘elbow’	f.	[ɗiika]	‘blood’
g.	[tiʃʃá]	‘seed’	h.	[kíiʃa]	‘scorpion’
i.	[ɾibo]	‘tendon’	j.	[siibá]	‘crowd’

(50) **u-uu**

a.	[fúka]	‘fox’	b.	[fúuta]	‘cotton’
c.	[kula]	‘bulb, tuber’	d.	[huuló]	‘guinea fowl’
e.	[púto]	‘fire’	f.	[puutsʾá]	‘curse (n)’
g.	[púníta]	‘coffee’	h.	[puuliʃa]	‘friend’
i.	[suɾa]	‘rope’	j.	[suubó]	‘soup, broth’

(51)	**e-ee**	a.	[héʃa]	‘wife’	b.	[ʔéesa]	‘bird’
		c.	[hékʾa]	‘ringworm’	d.	[heelá]	‘frontier, boundary’
		e.	[kʾefo]	‘malaria’	f.	[keeŋko]	‘heron, egret’
		g.	[ɗéte]	‘squirrel’	h.	[ɗeesotʃa]	‘shame’
		i.	[ʔetetʃa]	‘swelling’	j.	[ʔéetótʃa]	‘evening meal’
(52)	**o-oo**	a.	[póra]	‘place’	b.	[póosa]	‘grave’
		c.	[koho]	‘ram’	d.	[koomá]	‘corn cob’
		e.	[tórótʃa]	‘war’	f.	[toórátʃa]	‘heap (n)’
		g.	[ʔototʃa]	‘light’	h.	[ʔahootʃa]	‘roasted grain snack’
(53)	**a-aa**	a.	[ɗámo]	‘food’	b.	[ɗaamó]	‘flour’
		c.	[kaba]	‘mouth’	d.	[kaabá]	‘plan (n)’
		e.	[máka]	‘snake’	f.	[maaka]	‘leader’
		g.	[fáfa]	‘python’	h.	[faaʔa]	‘bush’
		i.	[hala]	‘yesterday’	j.	[haaro]	‘nightingale’
		k.	[páta]	‘back’	l.	[paatá]	‘village’

Generally, the measured duration of long vowels is about twice as long as that of short vowels. When measuring the duration of vowels, the following guidelines outlined in Cahill (2008) were followed. First of all, words were carefully chosen for comparison. Only disyllabic words were selected except in a few instances where a trisyllabic word yielded more ideal conditions for measuring. Comparison of vowel lengths was only conducted when the vowels in question occurred in similar positions within the word. Secondly, measurements were not taken in words in which the vowels preceded or followed approximants or liquids. No word-final vowels were measured because there are no known examples of word-final long vowels.

Short vowels in initial syllables typically range from 50-100 milliseconds in duration. In example (54) below, duration measurements of short vowels are provided in the parentheses, and the underlined vowel identifies the target vowel that was measured. The reader will note that the lower vowels tend to have a longer duration value than the higher vowels. This is not unusual since cross-linguistically we often find that, all else being equal, lower vowels have a longer intrinsic duration than higher vowels (Beckman 1986:141).

(54) Duration Measurements of High Short Vowels

a.	[tiʃʃá]	‘seed’	(51 ms)
b.	[fúka]	‘fox’	(111 ms)
c.	[púto]	‘fire’	(89 ms)
d.	[púníta]	‘coffee’	(46 ms)

(55) Duration Measurements of Mid Short Vowels

a.	[héʃa]	‘wife’	(103 ms)
b.	[k’efo]	‘malaria’	(72 ms)
c.	[ɗéte]	‘squirrel’	(88 ms)
d.	[póra]	‘place’	(101 ms)
e.	[koho]	‘ram’	(73 ms)
f.	[tórótʃa]	‘war’	(84 ms)

(56) Duration Measurements of Low Short Vowels

a.	[kaba]	‘mouth’	(89 ms)
b.	[fáfa]	‘python’	(111 ms)
c.	[páta]	‘back’	(97 ms)

Long vowels, which are generally twice as long as short vowels, typically range from 150-200 milliseconds in duration. Again, we see that the lower vowels tend to have a longer duration value than the higher vowels.

(57) Duration Measurements of High Long Vowels

a.	[fiiɾá]	‘flower’	(195 ms)
b.	[kíiʃa]	‘scorpion’	(119 ms)
c.	[ʃiiɓó]	‘tenth month’	(220 ms)
d.	[fúuta]	‘cotton’	(176 ms)
e.	[puuts’á]	‘curse (n)’	(197 ms)

(58) Duration Measurements of Mid Long Vowels

a.	[ʔéesa]	‘bird’	(226 ms)
b.	[ɗeesotʃa]	‘shame’	(220 ms)
c.	[póosa]	‘grave’	(223 ms)
d.	[koomá]	‘corn cob’	(230 ms)
e.	[tóorátʃa]	‘heap (n)’	(153 ms)

(59) Duration Measurements of Low Long Vowels

a.	[ɗaamó]	‘flour’	(196 ms)
b.	[faaʔa]	‘bush’	(200 ms)
c.	[haaro]	‘nightingale’	(214 ms)
d.	[táaɗa]	‘dew’	(230 ms)
e.	[paatá]	‘village’	(186 ms)

3.5 VOICELESS VOWELS

It is not uncommon, among Cushitic languages, to find whispered or voiceless vowels word- and clause-finally (Mous 2012:353; Wedekind 1989:122). Word-final voiceless vowels are seen in the Lowland East Cushitic languages Oromo (Lloret 1997), Konso (Ongaye 2013), and Dirayta (Uusitalo 2013). Devoicing is predictably found in Mositacha vowels in word-final, pre-pausal environments. When the consonant preceding the vowel is a voiceless fricative, affricate or geminated voiceless stop, the vowel is even more likely to be voiceless. The following examples show the phonetic realization of word-final, unstressed vowels.

(60)

a.	/helitta/	[hélítt̥a]	‘young man’
b.	/kohajtʃa/	[kohajtʃ̥a]	‘obstruction’
c.	/ʃibotʃa/	[ʃíbótʃ̥a]	‘trap (n)’
d.	/sookitta/	[sóokítt̥a]	‘salt’
e.	/punita/	[púnít̥a]	‘coffee’

When the voiceless vowels are viewed in a spectrogram, they are so low in amplitude that they hardly register. The following image shows the waveform and spectrogram for above example (60a) *helitta* ‘young man.’ After the geminated alveolar stop in the final syllable, the whispered or voiceless vowel hardly registers on the spectrogram in comparison to the first two vowels.

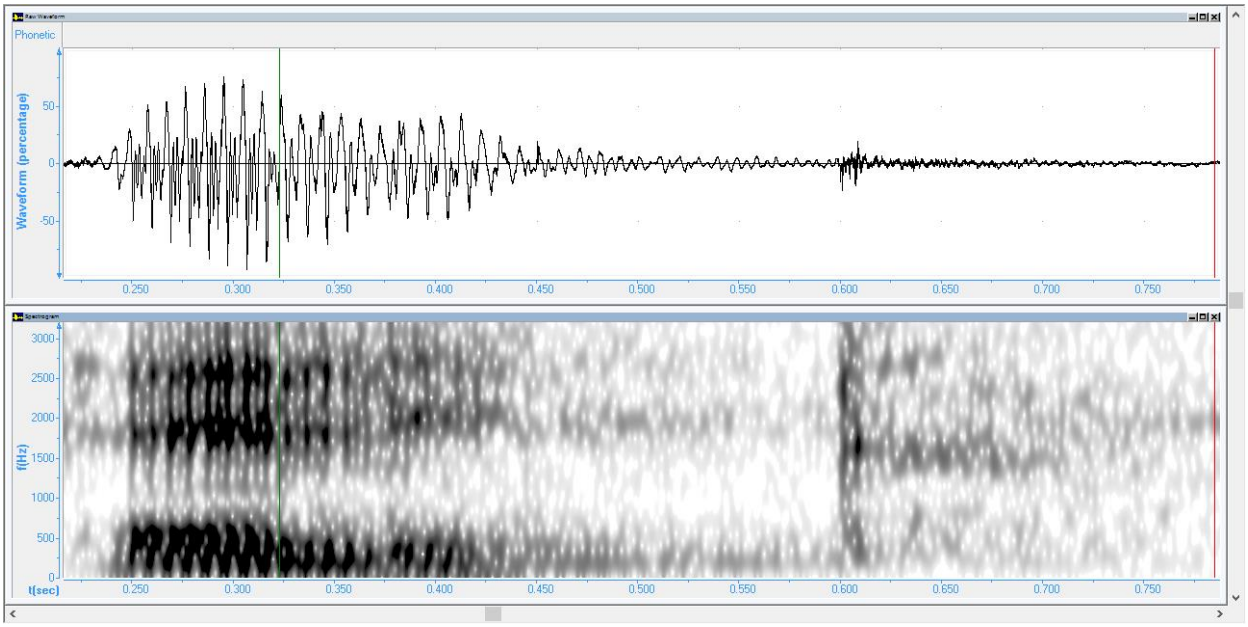

Figure 10: Waveform and spectrogram image of /helitta/ ‘young man’

In some extreme cases, the vowel may be absent altogether when the word is spoken in isolation as the following examples illustrate.

(61) a. /hekapissa/ [hékapiss] ‘knot in wood’
b. /inkotʃa/ [ʔiŋkótʃ] ‘mother’

As stated earlier, voiceless vowels are found in word-final, pre-pausal environments. When not occurring in this environment, the vowel is not voiceless. For example, the final vowel in /inkotʃa/ ‘mother’ given in example (61b) emerges when placed in the clause below in example (62). Additionally, the final vowel in /meetʃa/ ‘child’ is clearly heard, while in isolation it is voiceless. Both word-final vowels are underlined for identification in the example below.

(62) [ʔiŋkotʃa meetʃa danaʃʃe]
mother child hold.PRES.2SG.FEM
‘The mother is holding her child’

4 SYLLABLE STRUCTURE AND PHONOTACTICS

In this chapter we begin by first looking at the syllable, its structure in Mositacha, syllable types that are found in the language, and phonotactics within the syllable. Next, in §4.2, we will discuss the syllable profile of noun and verb roots. The remainder of the chapter is dedicated to phonotactics. Consonant sequences and consonant gemination are discussed in §4.3. Section 4.4 looks at vowel co-occurrences, vowel sequences, and vowel assimilation across the glottal stop.

4.1 THE SYLLABLE

Across Cushitic languages, both open and closed syllables are found. Because onsets and codas tend to be simple in Cushitic languages, consisting of only one consonant (Mous 2008: 349), word-medial consonant sequences are usually limited to geminates or sequences of two consonants. This is precisely what we find occurring in Mositacha.

4.1.1 Syllable Types

The syllable in Mositacha contains an obligatory onset, a nucleus, and an optional coda, allowing for both open and closed syllables. While the onset is obligatory, it cannot contain a complex consonant cluster. Likewise, the coda is also simple, but unlike the onset, it is not obligatory. The nucleus position contains either a long vowel or short vowel.

This allows for four possible syllable types in Mositacha.[12] These four syllable types are also present in the neighboring Konsoid languages Dirayta (Wondwosen 2006) and Konso (Ongaye 2013).

(63) Syllable Types in Mositacha
   a. CV
   b. CVC
   c. CVV
   d. CVVC

Most CVV syllables contain a long vowel. There are a few notable exceptions of vowel sequences found within a syllable that will be discussed at length in §4.4.2. The CVVC syllable type, however, only contains long vowels.

[12] Dr. Wondwosen also posits these four syllable types in his grammar of Mositacha (2015:28-30).

The reader will note that all the examples of syllable types given below end with a CV syllable. This is true of all Mositacha words, and greater attention will be given to this observation in §4.2.

(64)	CV	[pá.ta]	‘back’
		[ɗé.te]	‘squirrel’
		[lú.ʃa]	‘leg’
		[si.no]	‘nose’
		[ta.mo]	‘two (2)’
		[ɗì.ki.la]	‘elbow’
		[pa.ɾa.só]	‘horse’
(65)	CVC	[tan.ká]	‘honey’
		[kaɾ.ʔa]	‘abdomen’
		[ɗan.tʃa]	‘calabash’
		[ful.tó]	‘waterhole’
		[hít.te]	‘root’
		[ɗah.hen.tʃa]	‘deaf person’
		[hoɾ.san.ta]	‘dance (n)’
(66)	CVV	[kee.to]	‘right, truth’
		[moo.k’é]	‘traditional spoon’
		[paa.tá]	‘village’
		[kuu.tá]	‘cemetary for infants’
		[ʃii.ɓó]	‘tenth month’
		[ɾa.boo.tʃa]	‘fiancé’
		[hí.ɗée.tʃa]	‘bundle (n)’

(67)	CVVC	[miin.tʃa]	‘forehead, south’
		[k’eeɗ.ɗo]	‘marriage’
		[paaɾ.ɾe]	‘tomorrow’
		[huun.ɗǎ]	‘ten (10)’
		[kóon.ka]	‘canoe’
		[ʔéeɗ.ɗĭh.ha]	‘everything’[13]
		[pa.ɾaan.ka.ʃa]	‘fifth month’

4.1.2 Syllable-Internal Phonotactics

All attested consonant phonemes occur in the syllable onset position, but not all are found in the syllable coda. Setting geminates aside (see §4.3.2 for more on consonant gemination), we find that the following consonants do not occur at all in the syllable coda position: voiced and voiceless stops,[14] implosives, ejectives, affricates, and the glottal fricative. Many of these consonants, while not occurring in the syllable coda, do occur in consonant clusters as the second consonant (i.e. in the onset of the second syllable). The consonants that we do find occurring in the syllable coda position are nasals, sibilants, liquids and approximants. There is only one instance of the labiodental fricative /f/ occurring in the syllable coda: *tufta* ‘buttock.’ Consonant sequences are further discussed in §4.3.1.

Following is a brief list of examples of each consonant that is found in the syllable coda.

[13] In chapter 2 (see § 2.2.1), we saw that the glottal stop is phonetically present in vowel-initial words to avoid an onsetless syllable, but it is uncertain to what extent the native speaker is aware of its presence word-initially.

[14] The only exception found in the dataset is the word *wuktehe* ‘camp, encampment.’ Not only is it the only non-geminate consonant sequence beginning with a stop, it is the only consonant sequence with two heterorganic stops. While this word was not identified as a loanword, because it is the only example in the entire database of two heterorganic plosives in a consonant sequence, it is highly probable that it is a loanword.

(68)

a.	[ɗîn.ɗa]	‘side (of body)’
b.	[kʾam.ɓó]	‘coffee’
c.	[ɗus.ʔe]	‘kidney’
d.	[ʔaz.gaa.ɾe]	‘fisherman’
e.	[ʔáʃ.káɾ.ta]	‘slave’
f.	[ɗul.ká]	‘curdled milk’
g.	[haɾ.ka]	‘hand’
h.	[haj.ɗo]	‘fat’
i.	[haw.ɗa]	‘weaver’

There appear to be no phonotactic restrictions on vowels within the syllable itself. All five vowel qualities occur in all four syllable types. Further discussion on vowel phonotactics within the word is found in Section 4.4.

4.2 Syllable Profiles of Roots

In this section, we will take a closer look at roots of Mositacha nouns and verbs. Minimally, each root, whether it is a noun or verb root, contains two moras. There are no Mositacha roots that are comprised solely of CV. Therefore the smallest noun root is CVCV and the smallest verb root is CVV.

All Mositacha words, and roots, end in an open syllable. The reader may recall that all the examples in §4.1.1 end with an open syllable regardless of the preceding syllable type. Mositacha requires its words to end with a vowel, and because there are no onsetless syllables, all Mositacha words end in a CV syllable. This is most clearly seen in words borrowed from languages that do not have this same constraint. When loanwords end in a consonant, Mositacha requires a vowel to be appended word-finally. Below are examples of borrowed words in Mositacha with an appended vowel.

(69)

[muz]	‘banana’	Amharic
[mu.zé]		Mositacha
[kʾa.lam]	‘paint, color’	Amharic
[kʾa.la.mé]		Mositacha

It is therefore no surprise that the most common syllable in Mositacha is CV.[15] On the other hand, the syllable type CVVC is the least common.

4.2.1 Syllable Profiles of Noun Roots

There are no known monosyllabic nouns in Mositacha. The smallest noun syllable profile is CVCV, and apart from a few exceptions, all nouns end in one of three vowels: *e*, *o*, or *a*. The following paragraphs detail a list of noun syllable profiles found in Mositacha, along with illustrative examples chosen because they contain no known morphology.

There are four disyllabic profiles found in noun roots: CV.CV, CVC.CV, CVV.CV, and CVVC.CV. In the examples below, the number in brackets next to the syllable profile shows the number of examples of that syllable profile found in the dataset. For the first three syllable profiles, nearly seventy examples of each are found in the dataset. The final syllable profile – CVVC.CV – has significantly fewer examples in the dataset.

(70) CV.CV [68]

a. [tʃo.ló] ‘pounding pot’
b. [ɗa.hé] ‘stone, pit’
c. [ɗé.te] ‘squirrel’
d. [k’a.wa] ‘den, lair, cave’
e. [ɗá.mo] ‘food’

(71) CVC.CV [69]

a. [k’ar.tá] ‘goiter’
b. [ɗin.ɗa] ‘side of body’
c. [sép.pa] ‘seven (7)’
d. [puk.ka] ‘corpse’
e. [ɗus.ʔe] ‘kidney’

[15] Within some theoretical approaches, the restriction to CV syllables in word-final positions could be viewed as a kind of positional markedness phenomenon. CV syllables, as the unmarked syllable type, are seen word-finally in the weak position (Beckman 1998).

(72) CVV.CV [65]

a. [ɗaa.mó] ‘flour’
b. [moo.kʾé] ‘ladle’
c. [mée.tʃa] ‘child’
d. [fóo.tsʾa] ‘baby sling’
e. [kuu.tá] ‘cemetary for infants’

(73) CVVC.CV [14]

a. [fuul.tó] ‘marsh, waterhole, spring’
b. [ʔoon.tʃa] ‘millet’
c. [keen.ko] ‘heron, egret, stork’
d. [kʾeeɗ.ɗo] ‘marriage’
e. [haaɾ.tʃa] ‘ninth month’

Trisyllabic syllable profiles in Mositacha are listed here along with the number of occurences of that particular profile found in the dataset. These numbers do not include known compounds or words that are known to be morphologically complex. There are seven trisyllabic syllable profiles in Mositacha.

(74) Trisyllabic noun syllable profiles

a. CV.CV.CV
b. CV.CVC.CV
c. CV.CVV.CV
d. CVV.CV.CV
e. CVC.CV.CV
f. CVC.CVC.CV
g. CVVC.CV.CV

In the examples of each syllable profile below, the number in brackets next to the syllable profile shows the number of examples of that syllable profile found in the dataset.

(75) CV.CV.CV [77]

a. [pa.ɾa.só] ‘horse’
b. [mé.kʾé.te] ‘bone’
c. [ɗu.su.mú] ‘door’
d. [ma.he.ná] ‘barren woman’
e. [ɓó.kʾó.le] ‘egg’

(76) CV.CVC.CV [30]

a. [hé.lít.ta] ‘young man’
b. [ká.kóɾ.tʃa] ‘beehive’
c. [ká.tʃán.tʃa] ‘pig’
d. [ʔá.hín.tʃa] ‘female cousin’
e. [kʾu.baj.ta] ‘fingernail’

(77) CV.CVV.CV [7]

a. [ɾa.boo.tʃa] ‘betrothed’
b. [tʃʾi.loo.ʃá] ‘brideprice’
c. [ʔa.hoo.tʃa] ‘kʾolo’
d. [ʔi.lee.la] ‘face’

(78) CVV.CV.CV [37]

a. [tee.ka.tʃa] ‘chair’
b. [póo.né.tʃa] ‘darkness’
c. [ʔee.ɗa.ma] ‘fruit’
d. [paa.tʃa.tʃa] ‘beard’
e. [híi.já.we] ‘orphan’

(79) CVC.CV.CV [94]

a. [sáɾ.kí.ta] ‘tribe, ethnic group’
b. [kóm.bó.tʃo] ‘maize’
c. [kap.po.ɾo] ‘antelope’
d. [hol.bo.kʾá] ‘valley’
e. [páɾ.ʃá.ne] ‘day after tomorrow’

(80) CVC.CVC.CV [23]

a. [tan.kaɾ.sá] ‘elephant’
b. [ʔan.nan.ta] ‘journey, trip’
c. [hon.tʃan.ta] ‘noise, sound’
d. [dĭk.kun.tʃa] ‘peace’
e. [ʔáʃ.káɾ.ta] ‘slave’

(81) CVVC.CV.CV [4]

a. [haam.pi.ɾo] ‘bird’
b. [haaʃ.ʃo.tʃa] ‘shoulder blade’
c. [táam.pó.tʃa] ‘tobacco’
d. [goon.da.fe] ‘arrow’

Mostitacha does not like to have more than one CVC or CVV syllable in the same root. Thus we do not find noun roots with the syllable profile of CVV.CVV.CV, or CVC.CVV.CV. The only exception is the syllable profile CVC.CVC.CV.

4.2.2 Syllable Profiles of Verb Roots

Like nouns, verbs also have complex morphology. Limited data prevents a rigorous morphological analysis; however, there are a number of recurrent sequences at the end of verbs which may be a series of suffixes. Due to the nature of Cushitic languages in general, we would expect there to be rich morphology (Mous 2012:359). For more on morphology in Cushitic languages, the reader is referred back to the Introduction.

While we cannot claim emphatically that these recurrent sequences are suffixes because their function is not known, I highly suspect that they are suffixes based on their common occurrence and the expectation of significant morphological processes in Cushitic languages. These common potential suffixes on verbs include *-so, -eetʃa,* and *-usa,* as well as the potential prefix *ʔii-.* For the reasons already mentioned, this analysis does not treat them as part of the verb root. With all of this in mind, there are four identifiable syllable profiles of verb roots: CVV, CVC, CVVC, and CV.CV. Examples of these are given below with the probable root underlined. CVV is the least prevalant of the verb roots, while CVC is the most common syllable profile.

(82) CVV root [2]

a. [paa-eetʃa] ‘put, place, set’
b. [ʔii-k’aa] ‘be thin’

(83) CVC root [67]

a. [ɗek-éetʃa] ‘hide’
b. [patʃ-éetʃa] ‘disappear’
c. [tʃ’ok’-eetʃa] ‘draw water from a bucket using a cup’

(84) CVVC root (35)

a. [kaan-usa] ‘grow up’
b. [tóor-eetʃa] ‘store up’
c. [móok-éetʃa] ‘bury’

(85) CVCV root (34)

a. [ɗéhá-so] ‘be flat’
b. [háʔí-so] ‘raise, lift’
c. [kókí-sô] ‘dry out clothes’

4.3 Consonant Sequences and Geminate Consonants

In this section, we will examine consonant clusters and consonant gemination within Mositacha. First, we will look at the consonant sequences, where we find that constraints on the syllable alone do not explain why certain consonant sequences do not occur. To understand why these sequences are not found, we will examine the sonority hierarchy in Mositacha. Next we will examine consonant gemination in Mositacha, which is completely unpredictable and therefore phonemic. The consonant gemination found in Mositacha is consistent with findings in other Cushitic languages (Mous 2012:350). Finally, we will note a couple of exceptions to the simple onset.

4.3.1 Consonant Sequences

Consonant sequences in Mositacha are made up of only two consonants and only occur word-medially. They are analyzed as the coda of one syllable and the onset of the following syllable. As we saw earlier, the syllable coda position does not allow voiced and voiceless stops, implosives, ejectives, affricates, or the glottal fricative. This means that the only consonants (apart from geminates) occurring in the coda and, consequently, as the first consonant in a

consonant sequence are nasals, fricatives (with the exception of the glottal fricative), liquids, and approximants. As we already noted earlier, there are no constraints on which consonants can occur in the syllable onset position.

Based on syllable-internal phonotactics alone, we would expect to find examples of all consonants as the second consonant in consonant sequences. Instead, there are certain consonant sequences that are not found at all. The following table shows which consonant sequences are found in Mositacha, excluding geminates. The left-hand column lists all the consonant classes that occur in the coda. Across the top are listed all the consonant classes found in onsets (i.e. all the consonant classes in the language). A designation of "YES" or "X" within each cell indicates whether or not that particular sequence exists in the language.

	Stops/Implosives/ Ejectives	Affricates	Fricatives	Nasals	Liquids	Approximants
Sibilants	YES	X	X	X	X	X
Nasals	YES	YES	X	X	X	X
Liquids	YES	YES	YES	YES	X	X
Approximants	YES	YES	YES	YES	YES	X

Before positing a possible explanation for why some sequences are not found in Mositacha, we look at examples of all the possible consonant sequences found in Mositacha.

(86) Sibilant + Stop/Implosive/Ejective

a. [ɗusʔe] 'kidney'
b. [gilagistέ] 'small mushroom that grows in clumps'
c. [kaska] 'shoulder'
d. [ʔáʃkárta] 'slave'

(87) Nasal + Stop/Implosive/Ejective

a. [ʃombokó] ‘bamboo’
b. [ʔomɓaʃa] ‘grinding stone’
c. [hampiɾta] ‘bird’
d. [pánpáno] ‘second month’
e. [banbanatʃa] ‘dung beetle’
f. [funtukó] ‘owl’
g. [foɾondó] ‘throat’
h. [kankulu] ‘hoe (n)’
i. [ʃóŋkʾa] ‘guitar’
j. [ɗinɗa] ‘side of body’
k. [ʔentsʾiɾetʃa] ‘tongue’
l. [kʾiintʃʼo] ‘thread (n)’

(88) Nasal + Affricate

a. [hántʃa] ‘swarm’

(89) Nasal + Fricative

a. [nunhintá] ‘brain’
b. [pootumsa] ‘be white’

(90) Liquid + Stop/Implosive/Ejective

a. [halbatio] ‘be third’
b. [sultubé] ‘rainy season’
c. [ɗulká] ‘curdled milk’
d. [tálʔe] ‘debt’
e. [masalk’o] ‘snail’
f. [k’ilts’ime] ‘bone marrow’
g. [hiɾpá] ‘music’
h. [hampiɾta] ‘bird’
i. [haɾka] ‘hand’
j. [kaɾʔa] ‘abdomen’
k. [ʃíɾk’ótʃa] ‘slither’
l. [k’iɾts’itʃa] ‘earring’

(91) Liquid + Affricate

a. [kúltʃa] ‘mole’
b. [dĩɾtʃa] ‘boy’

(92) Liquid + Fricative

a. [silhá] ‘iron’
b. [kalʃumá] ‘west’
c. [hóɾsánta] ‘dance’
d. [kuɾʃá] ‘log’

(93) Liquid + Nasal

a. [holmá] ‘nape of neck’
b. [kaɾma] ‘be strong, courageous’

(94) Approximant + Stop/Implosive/Ejective

a. [haw̲d̲a] ‘weaver’
b. [haj̲b̲atʃa] ‘husband’
c. [ʔoj̲t̲eetʃa] ‘light a fire’
d. [náj̲k̲’á̲j̲t̲ʃa] ‘be difficult, bad’
e. [k’umbaj̲d̲ó] ‘smallest knife’
f. [máj̲d̲e] ‘strap’

(95) Approximant + Affricate

a. [kéɾʔáj̲t̲ʃa] ‘old person’

(96) Approximant + Fricative

a. [k’aj̲s̲amotʃa] ‘swell’
b. [ʃáj̲ʃ̲ájtʃa] ‘hawk’

(97) Approximant + Liquid

a. [káj̲l̲íʃa] ‘flock of birds’
b. [kooj̲ɾ̲ó] ‘firstborn’

(98) Approximant + Nasal

a. [háj̲n̲a] ‘roof’

Having presented the consonants sequences that do occur, we will now speculate on a possible explanation as to why only these sequences are found. This analysis hypothesizes that consonant sequences are limited by a constraint that requires a certain amount of difference in sonority. The sonority hierarchy in Mositacha is given below.

(99) Mositacha Sonority Hierarchy

More Sonorous Less Sonorous

approximants > liquids > nasals > fricatives > stops, implosives, ejectives, affricates

What we find in Mositacha is that the second consonant in a consonant sequence has to be less sonorous than the first consonant in the sequence.[16] Thus, we find fricatives following approximants, liquids, and nasals, but we never find approximants, liquids or nasals following a fricative. Additionally, the two consonants in a consonant sequence cannot be of the same sonority. For examples, a consonant sequence will never consist of two fricatives or two nasals (unless of course they are geminates). This helps to understand syllable internal phonotactices as well. As was previously established, the least sonorous consonants — stops, implosives, ejectives, and affricates — are never found in the syllable coda except in the case of geminates. Based on the sonority hierarchy and consonant sequence constraints, we now understand that this is because they cannot be followed by another more sonorous consonant. There are only two exceptions to this constraint on sonority. In both cases, the first consonant is a sibilant and the second is a bilabial nasal. The two exceptions are *piʃmá* 'curse' and *másmásóontʃa* 'rejoice.'

As an interesting aside, there is clear nasal assimilation when there is a nasal-stop consonant sequence between morpheme boundaries, except when the stop is labial. Alveolar stops are always preceded by an alveolar nasal and velar stops are always preceded by a velar nasal. One

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[16] A unique occurrence within the Konsoid dialect chain is that Mositacha and Dirayta metathesize several consonant clusters that are found in Konso. According to Mous, this metathesis occurred in recent history so that the sonority conditions would not be violated (Mous 2012:356). In the following examples, we see that Konso allows liquids and nasals to follow plain stops, but this is not allowed in either Mositacha or Dirayta. The first example shows how Mositacha and Dirayta both metathesize the consonant cluster found in Konso.

takmá	'honey' (Konso)
taŋk	'honey' (Dirayta)
taŋká	'honey' (Mositacha)

(Mous 2012:357)

In this second example, we see that Mositacha does not always use metathesis to resolve sonority violations. Here Dirayta metathesizes the consonants to fulfill the sonority hierarchy, but Mositacha instead inserts the epenthetic vowel [i].

dîkla	'elbow' (Konso)
dîlk	'elbow' (Dirayta)
dîkila	'elbow' (Mositacha)

(Mous 2012:357)

For more on how Mositacha resolves sonority violations and impermissible consonant clusters, the reader is referred ahead to Chapter 5 which addresses phonological processes.

would expect, then, that the labial stop is always preceded by the labial nasal as seen in the following examples.

(100) /m/ - labial stop

a. [haampiro] ‘bird’

b. [kómbótʃo] ‘maize’

The labial stop does not always follow the labial nasal. Note the following examples below where where the alveolar nasal is found preceding both the voiceless and voiced bilabial stops.

(101) /n/ - labial stop

a. [pánpáno] ‘second month’

b. [banbanatʃa] ‘dung beetle’

Unlike the nasal-bilabial stop behavior, the nasal-implosive consonant sequence behaves more as one might except. When the implosive follows a nasal in a consonant sequence, the nasal and implosive always share the same place of articulation.

(102) [ʔomɓaʃa] ‘grinding stone’

This is also found in Konso, where Ongaye (2013:24) notes that the “bilabial nasal does not need to be homorganic with the stop (plain or implosive).” Likewise, in Mositacha the bilabial plain stop is not always homorganic, however, the implosive is only found in homorganic clusters.

4.3.2 Consonant Gemination

In accordance with other Cushitic languages, consonant gemination is found in Mositacha both lexically and morphologically. Typologically, gemination is a common phenomenon in Cushitic languages, occurring word-medially, and geminated consonants are never found in consonant clusters with other consonants (Sim 1988). It is often found as a morphological process (Mous 2012:356).

In Mositacha, the syllable boundary lies within the geminate consonant. Geminate stops are realized as a single, long, uninterrupted closure. Below are some examples of gemination in

Mositacha. All the consonants are found geminated except for /ɓ/, /tsʾ/, and the marginal phonemes /b/, /d/, and /g/.

(103)	/p/	a.	[kʾéppísô]	‘break’
		b.	[séppa]	‘seven’
		c.	[káppúntʃa]	‘be fat, thick’
(104)	/f/	a.	[ʔuffá]	‘bladder’[17]
(105)	/m/	a.	[ɗámmájtʃa]	‘cold weather’
		b.	[lémme]	‘father’
		c.	[ɗámmántu]	‘omen’
(106)	/t/	a.	[hittajjo]	‘bedbug’
		b.	[kuttalitʃa]	‘puppy’
		c.	[ʔúfádítta]	‘perspiration’
(107)	/ɗ/	a.	[kʾúɗɗétʃa]	‘thorn’
		b.	[piɗɗetʃa]	‘buy’
		c.	[haɗɗawa]	‘be bitter’
(108)	/s/	a.	[hussá]	‘country, ethnic area’
		b.	[pissá]	‘be beautiful’
		c.	[kassata]	‘request (n)’

[17] There is only one example of geminated /f/ in the dataset.

(109)	/n/	a.	[ʔaanno]	‘milk’
		b.	[kamanna]	‘cow.PL’
		c.	[ʔinna]	‘you.PL’
(110)	/r/	a.	[toɾɾotʃa]	‘story (tale); history’
		b.	[heɾɾó]	‘dog’
		c.	[taɾɾá]	‘mountain’
(111)	/l/	a.	[walla]	‘white mushroom’
		b.	[dulluko]	‘abcess’
		c.	[hullubé]	‘afternoon’
(112)	/tʃ/	a.	[kitʃtʃina]	‘thirteenth month’
		b.	[ʔitʃtʃuraʔa]	‘forward (direction)’
		c.	[heputʃtʃije]	‘bark’
(113)	/tʃ’/	a.	[tʃárátʃ’tʃ’a]	‘ashes’[18]
(114)	/ʃ/	a.	[láʃʃa]	‘day’
		b.	[ʔiriʃʃa]	‘friend’
		c.	[hemaʃʃote]	‘dream (v)’
(115)	/k/	a.	[sakkalo]	‘sixth month’
		b.	[rákkósô]	‘lack (v)’
		c.	[ɗíkkásô]	‘befit, suit’

[18] There is only one example of /tʃ’/ in the dataset.

(116)	/kʾ/	a.	[hikʾkʾota]	‘hiccough (n)’
		b.	[hékʾkʾéetʃa]	‘scratch(v)’
		c.	[tʃʾukʾkʾana]	‘night’
(117)	/h/	a.	[mahhá]	‘name’
		b.	[luhhale]	‘chicken’
		c.	[luhhe]	‘leg.PL’
(118)	/w/	a.	[kʾawwá]	‘thunder’
		b.	[ʔawwe]	‘today’
		c.	[kawwusá]	‘chin’
(119)	/j/	a.	[ɗajjá]	‘gift’
		b.	[kʾajjó]	‘smoke’
		c.	[tʃabajjó]	‘mouse’

The examples above do not include examples of geminated glottal stops. In the current database, gemination of the glottal stop is only found in the second person verb form. The second person focus prefix is heC-, where C is the same consonant as the root-initial consonant. In example below, the root-initial consonant is [ʔ]. When the second person focus prefix is attached to the verb, the glottal stop is geminated.

(120)	/heʔʔerkaʃʃe/	[heʔʔerkaʃʃe]
	heC-ʔerka-ʃʃe	
	2FOC-work-2SG	
	‘you worked’	

As an aside, the third person focus form provides an interesting comparison. Superficially, the form is similar to the second person focus form noted above, but since the third person prefix is only he-, there is no consonant gemination.

(121) /heʔerkaʃʃe/ [heerkaʃʃe]
he-ʔerka-ʃ-ʃe
3FOC-work-FEM-3SG
'she worked'

4.3.3 Cw / Cj Sequences

As we saw earlier, onsets in Mositacha are generally simple. There is a small handful of examples in the dataset that are possible exceptions to this. This analysis presents them as Cw and Cj sequences, but they could alternatively be analyzed as labialized or palatalized consonants. All of the Cw and Cj sequences found in the dataset are noted below.

(122) Examples of Cw

a. [twina] 'worm'
b. [ʔiitwee] 'be dead'
c. [ʔakkiswahe] 'show'
d. [hojɾekwisija] 'fourth month'

(123) Examples of Cj

a. [tʃ'jáak'o] 'oath'
b. [tʃ'jaana] 'load (v)'
c. [tʃ'jóok'o] 'mud'

4.4 VOWEL PHONOTACTICS

In this section, we will examine vowel co-occurrence, vowel harmony, and vowel assimilation across glottal stops.

4.4.1 Vowel Co-occurrence

At the word-level, there does not appear to be any restriction on co-occurrence of vowels. All vowels are found in word-initial and word-medial syllables, but not all vowels are found word-finally. The following table shows the distribution of vowels in disyllabic words.

	a	e	i	o	u
a	(40) *harka* ‘hand’	(11) *dǎle* ‘medicine’	(1) *ʧáli* ‘goat.PL’	(20) *dǎmo* ‘food’	--
e	(9) *hék’a* ‘ringworm’	(4) *děte* ‘squirrel’	(2) *lehi* ‘six (6)’	(4) *ʔeko* ‘tail’	--
i	(21) *dinda* ‘side of body’	(7) *píʃe* ‘water’	(2) *híni* ‘(be) same’	(15) *híbo* ‘dry season’	--
o	(20) *kóka* ‘beeswax’	(11) *konté* ‘hoe (n)’	(1) *ʔooli* ‘with’	(7) *soʔo* ‘meat’	--
u	(21) *dulká* ‘curdled milk’	(7) *ts’uk’e* ‘ring finger’	--	(3) *púto* ‘fire’	--

Table 2: Vowel Co-occurrence in disyllabic words

As the table above illustrates, high vowels are not commonly found word-finally. Among disyllabic words, there are none ending with the high back vowel /u/, and only five ending in the high front vowel /i/. When the entire dataset including words that are not disyllabic is considered, there are nine instances of words ending with /u/ and 38 ending in /i/. Of the 38 words ending in /i/, 14 of these are numbers. Based on the low occurrence of high vowels in word-final syllables, it is no surprise then that there are no disyllabic words ending in /u/.

The vast majority of word-final syllables contain either *e, o,* or *a.* The chart below presents the number of times each of the five vowels are found word-finally.

(124) Word-final syllable vowels

i	38
u	9
e	346
o	243
a	765

4.4.2 Vowel Sequences

Back in §4.1.1, we noted that one of the four syllable types in Mositacha is CVV. While most of the CVV syllables are formed with a long vowel, there are some CVV syllables that contain two different vowels. There is no clear evidence for V syllables, so this analysis tentatively

posits that when two separate vowels occur in sequences, they are part of the same syllable. When these sequences occur, the first vowel is short and more glide-like. The vowel combinations found are [eo], [eu], and [ea]. A few examples are provided below.

(125)	a.	[ʔáppámea]	owner (head of the house)
	b.	[heatsʾe]	rest
	c.	[léolájtʃa]	rich man
	d.	[hekia]	say
	e.	[heottije]	sit

4.4.3 Vowel Assimilation Across Glottal Stop

Mous (2012:354) states that it is not uncommon in Cushitic languages for vowels to assimilate through the glottal stop. In Mositacha, there is a strong tendency for vowels in VʔV sequences to be the same, particuarly when the word ends in a VʔV sequence. It may be that -ʔV is a suffix, either historical or synchronic, but because there are no alternations, we are unable to see the vowel actually changing. In the examples below, each verb ends with a VʔV sequence where both vowels are identical.

(126)	a.	[hitʃeʔe]	‘belch’
	b.	[hepeʔe]	‘dive’
	c.	[kʾoroʔsuuniɗeʔe]	‘fetch (firewood)’
	d.	[hɛkoomaʔa]	‘(be) short’
	e.	[hekatʃinaʔa]	‘be small in size’
	f.	[miilusaʔa]	‘be clean’
	g.	[ʔippataʔa]	‘backward (direction)’
	h.	[ʔitʃtʃuraʔa]	‘forward (direction)’
	i.	[piotʃaraʔa]	‘left (direction)’
	j.	[miskotʃaraʔa]	‘right (direction)’

There are other words containing VʔV sequences in which the vowels are not identical. Some of these are noted below.

(127)

a.	[haʔiso]	‘raise, lift’
b.	[k’oʔiso]	‘scrape (v)’
c.	[hummaʔiso]	‘shorten’
d.	[kaaʔeetʃa]	‘tear (tr)’
e.	[miʔaweetʃa]	‘(be) sweet’
f.	[peʔa]	‘kid’
g.	[haʔisotʃa]	‘load, burden (n)’
h.	[k’aʔiʃa]	‘market (n)’
i.	[leeʔo]	‘moon’

5 PHONOLOGICAL PROCESSES

Mositacha boasts rich morphology and a plethora of phonological processes that occur at morpheme boundaries. In this chapter, we will take a closer look at the phonological processes that occur. Section 5.1 deals with assimilation; §5.2 with epenthesis; §5.3 with metathesis; §5.4 with deletion; §5.5 with reduplication; and §5.6 with grammatical gemination. All of these are common phonological phenomena found in Cushitic languages.

5.1 ASSIMILATION

The first process we will examine is assimilation. In Mositacha, assimilation happens when the first consonant assimilates in some way to the following consonant, or when the second consonant assimilates completely to the preceding consonant.

We begin by looking at the assimilation of the first consonant to some feature of the following consonant. This is primarily found when the first consonant is a nasal. Nasals assimilate in place of articulation to the following consonants. In the first example below, the nasal in the root *ɗàm* 'eat' assimilates to the place of articulation of the following affricate. Example (128b) shows the nasal in the focus prefix assimilating in place of articulation to the following velar ejective. Similarly, in example (128c), the alveolar nasal in the prefix assimilates to the place of articulation of the following bilabial stop. The underlined consonant indicates the consonant undergoing assimilation.

(128) a. [heɗɗan̲tʃe] 'you (sg) ate'
heC-ɗam̲-tʃ-e
2FOC-eat-2-PRF

b. [hen̲k'eppine] 'we folded'
hen̲-k'epp-n-e
1FOC-fold-PL-PRF

c. [hem̲pulpule] 'I scattered'
hen-pulpul-e
1FOC-scatter-PRF

When both consonants are nasals, but do not share the same place of articulation, the first nasal assimilates completely to the following nasal. In example (129) below, the nasal in the root *ɗam* 'to eat' assimilates completely to the following alveolar nasal in the plural suffix.

(129) [henɗanne] 'we ate'
hen-ɗam-n-e
1FOC-eat-PL-PRF

Assimilation of the first consonant to the second consonant is also used to resolve violations of sonority difference. As discussed in the previous chapter, the first consonant in a consonant cluster cannot be less sonorous than the following consonant. Thus, in instances where the root ends in a plosive consonant followed by a nasal suffix, the plosive completely assimilates to the nasal. In the following example, the verb root *erkad* 'work' ends in an implosive which completely assimilates to the following nasal in the person marker suffix.

(130) [henerkanne] 'we worked'
hen-erkaɗ-n-e
1FOC-work-PL-PRF

In Chapter 4, it was established that Mositacha does not allow stops in the syllable coda except in the case of geminate consonants. Thus, when two different stops come together at morpheme boundaries, the stop consonant in the coda of the root completely assimilates to the following stop. In the examples below, the voiced bilabial stop in the root assimilates to the following affricate in the suffix.

(131) a. [heɗɗatʃtʃe] 'you (sg) lost, do not have'
heC-ɗab-tʃ-e
2FOC-lose-2-PRF

b. [hetʃʾtʃʾatʃtʃe] 'you are rotten'
heC-tʃʾab-tʃ-e
2FOC-rot-2-PRF

c. [hek'k'at̪ʃtʃa] 'you (sg) have'
heC-k'ab̪-tʃ-a
2FOC-have-2-PRF

The second kind of assimilation, which is not as common, occurs when the second consonant, usually a nasal, assimilates completely to the *preceding* consonant. The consonant sequence [ln] is not one that is found in Mositacha. When this sequence occurs at morpheme boundaries, the nasal completely assimilates to the liquid. This is seen in the example below with the verb root *pulpul* 'to scatter' when the first person plural marker –n is suffixed to the verb root.

(132) [hempulpul̪le] 'we scattered'
hen-pulpul-n̪-e
1FOC-scatter-1PL-PRF

5.2 EPENTHESIS

Epenthesis occurs to break up consonant clusters that are not allowed in Mositacha syllable structure. To avoid impermissable consonant clusters, the epenthetic vowel [i] is inserted. In the examples given below, the epenthetic vowel is inserted to break up CCC clusters. The epenthetic vowel is underlined in each example given.

(133) a. [hedɗant̪ʃi̪ne] 'you (pl) ate'
heC-ɗam-tʃ-n-e
2FOC-eat-2-PL-PRF

b. [hedɗat̪ʃtʃi̪ne] 'you (pl) lost, do not have'
heC-ɗab-tʃ-n-e
2FOC-lost-2-PL-PRF

c. [heŋk'epp̪i̪ne] 'we folded'
hen-k'epp-n-e
1FOC-fold-PL-PRF

In yet another example shown below, the epenthetic vowel [i] is inserted twice in the same word to avoid the impermissable sequences *mbtʃ* and *tʃn*. The first sequence is impermissible because CCC consonant clusters are not allowed in Mositacha. The second sequence is

impermissable because affricates are not allowed in the syllable coda or as the first consonant in a consonant sequence.

(134) [hehhembi̲tʃi̲ne] ‘you (pl) called’
heC-hemb-tʃ-n-e
2FOC-call-2-PL-PRF

While there are some permissable vowel sequences within the same syllable, there are other vowel sequences which Mositacha does not permit. To break up such impermissable sequences which occur at morpheme boudnaries, the approximant /j/ is inserted between the two vowels. In the examples below, the impermissable vowel sequence formed when the perfective suffix is affixed to the root which ends in a vowel is resolved with the epethesis of /j/.

(135) a. [henpallaje] ‘I cooked’
hen-palla-e
1FOC-cook-PRF
b. [heuttije] ‘he is sitting’
he-utti-e
3SG.FOC-sit-PRF

5.3 METATHESIS

Metathesis is yet another, albeit less common, way that Mositacha uses to resolve impermissable sequences. In the following example, the verb root is *ɗuh* ‘shut.’ When the plural person marker suffix –n is affixed to the verb root, the resulting consonant cluster is *hn.* Because Mositacha does not allow *h* in the syllable coda, the two consonants metathesize resulting in the final verb form *henɗunhe* which contains the permissable consonant cluster *nh.*

(136) [henɗunhe] ‘we shut’
hen-ɗuh-n-e
1FOC-shut-PL-PRF

Wondwosen (2015) notes that in some varieties of Mositacha /k/ and /h/ are in free variation with each other. This is presumably what is happening in example (137) below when the

underlying root ends with the consonant *k,* but the surface form contains *h.* Just as we saw in the example above, the *hn* consonant sequence metathesizes.

(137) [hendɗenhe] ‘we hid’
hen-ɗek-n-e
1FOC-hide-PL-PRF

5.4 DELETION

In fast speech, deletion occurs in clauses when the final vowel of a word is the same as the initial vowel of the following word. This is illustrated in the examples below.

(138) [itʃanniʃ] ‘she is walking’
itʃa anni-ʃa
3FEM.SG walk-FEM.SG.IMPF

(139) [andɔtʃaʃanemutʃine] ‘fine, good morning’
andɔtʃa aʃane mutʃine
peace how night.spent

Wondwosen (2015:32) analyzes the plural formation as a deletion of the word-final vowel before the plural suffix is added. The following examples show the singular and plural forms on nouns that take the –awe plural suffix.

(140)

	Singular	Plural	
a.	[soʔo]	[soʔawe]	‘meat’
b.	[leeʔo]	[leeʔawe]	‘moon’
c.	[páta]	[patawe]	‘back’
d.	[laka]	[lakawe]	‘ground, land’
e.	[mék’éte]	[mek’etawe]	‘bone’
f.	[moozé]	[moozawe]	‘banana’

5.5 REDUPLICATION

Reduplication in Mositacha is both a lexical phenomena and a grammatical process, which is not surprising considering that reduplication is a common phenomenon in Cushitic languages (Mous 2008). While reduplication in Mositacha is not a purely phonological process, it does interact with phonological processes and is treated in this chapter as matter of practical convenience. A full discussion of reduplication in Mositacha, particularly in regards to reduplication as a grammatical process, is beyond the scope of this chapter; nevertheless, we will look at some phonological processes seen in reduplication.

First of all, it is helpful to identify reduplication in Mositacha. Mous (2008) states that initial reduplication is not a productive process among nouns in Cushitic languages, and primarily shows up in lexicalized cases. This seems to be the case in Mositacha. One such group of nouns in Mositacha which seems to boast a significant portion of lexicalized reduplication is animals. Many of these appear to contain CVC- or CV- initial reduplication as seen in the examples given below. Nowhere in the data do we find the forms that would exist minus the initial reduplicant (i.e. there is no word *fà* or *tʃute*).

(141) CV- Reduplication

a. [fáfa] ‘python’
b. [háháwátʃa] ‘ibis (bird with long bill)’
c. [tʃutʃuté] ‘chick’
d. [pópóko] ‘insect’

(142) CVC- Reduplication

a. [jajjaró] ‘bat’
b. [banbanatʃa] ‘dung beetle’
c. [haɾharo] ‘warthog’
d. [ʃájʃájtʃa] ‘hawk (outer part of wingspan not white)’
e. [ʔulʔuló] ‘cockroach’

Ideophones in Cushitic languages also appear to be frequently formed with lexicalized reduplication. The following examples are ideophones in Mositacha, and it is not difficult to recognize the lexicalized reduplication in the initial syllable.

(143)

	Phonetic Form	Gloss
a.	[kekeʔeetʃa]	‘rustle (leaves) (v)’
b.	[ʔílílítta]	‘wail, ululate (at funeral) (v)’
c.	[kakkaʔeetʃa]	‘cackle (as of chicken)’
d.	[ɗéɗɗék’ótʃa]	‘drip’
e.	[k’ak’k’ajeetʃa]	‘leak (v)’
f.	[karakkarameetʃa]	‘haggle, negotiate a price’
g.	[pappak’etʃa]	‘burst’
h.	[tʃatʃtʃaʔeetʃa]	‘hesitate’

5.5.1 Consonant Assimilation in Reduplication

Consonant assimilation is frequently seen in lexicalized reduplication in Mositacha. In the example below, the base is [kum], but the nasal in the reduplicant assimilates to the point of articulation of the following consonant.’

(144) /kum-kumu/ [k’uŋk’umu] ‘pain (n) ’

As already seen earlier in this chapter, the first stop in a consonant sequence assimilates completely to the second stop in the sequence. The example below shows how the velar ejective completely assimilates to the following implosive.

(145) /ɗek’-ɗek’otʃa/ [ɗeɗɗek’otʃa] ‘drip’

Similarly, in (146) below, the velar ejective completely assimilates to the labial plosive that follows it.

(146) /pak’-pak’etʃa/ [pappak’etʃa] ‘burst’

5.6 GRAMMATICAL GEMINATION

In this section, we briefly identify some examples of grammatical gemination. The first is found in the noun plural formation. As in other Cushitic languages, reduplication of the final consonant is found as one of the noun plural formation types (Mous 2008) as seen in example (147) below. The final consonant of the stem is geminated before the final vowel is affixed.

(147) [kamaná] ‘cow (female)’ [kamanna] ‘cow (pl)’

A second instance of grammatical gemination is found in the second person perfective verb form. The focus prefix is heC- where the C represents the initial consonant of the verb root. When this prefix is affixed to the verb root, the initial consonant of the verb root is geminated.

(148) heɗɗatʃtʃe ‘you (sg) lost, do not have’
heC-ɗab-tʃ-e
2FOC-lose-2-PRF

hek’k’atʃtʃa ‘you (sg) have’
heC-k’ab-tʃ-a
2FOC-have-2-PRF

hehhembitʃine ‘you (pl) called’
heC-hemb-tʃ-n-e
2FOC-call-2-PL-PRF

6 TONE

In this final chapter, we examine the nature of tone in Mositacha. We begin with a brief overview of tone among Cushitic languages, many of which have been historically identified as *pitch-accent* languages. Instead of using the term *pitch-accent* to describe tone in Mositacha, I suggest that Hyman's term *restricted tone language* is more helpful. Section 1.2 is an overview of the methodology used to examine tone in Mositacha. In Section 1.3, we look at pitch patterns found in both nouns and verbs.

6.1 RESTRICTED TONE LANGUAGE

One of the more murky areas of phonological description in Cushitic languages is that of tone. Many of the tone descriptions of Cushitic languages use terms such as *pitch-accent* or *tonal-accent* to depict what is happening in the language. These descriptions tend to assign an accent to the syllable and include a rule of high tone association with the accented syllable. For example, Hayward (1991) argues that in Qafar there is an association between the accented syllable in a noun phrase and the association of the high tone. If the first two words in the noun phrase do not contain an accent, then the high tone "associates with the final syllable of the first word" (Hayward 1991:134). The assignment of accent depends on the grammatical gender of the noun. This link between gender, accent and, subsequently, tone has been made with other Cushitic languages as well. For example, in the East Cushitic language Somali, tone marks grammatical gender and number (Hyman 1981). Rendille and Afar also mark gender with tone (Mous 2012).

Throughout Cushitic languages, tone plays a significant morphological role. In Arbore, a Southern Cushitic language, nouns receive tone "through suffixation of high-toned morphemes" (Mous 2012:351). In some East Cushitic languages, we find some floating tone morphemes which have "no segmental content" but which are expressed with tone (Hayward & Mergessa 1996:35). Oromo, a Lowland East Cushitic language, marks certain verb forms through tone (Lloret 1997:516). One of the plural formations in Dirayta (Lowland East Cushitic, Konsoid) is expressed solely through tone (Uusitalo 2013) as shown below.

(149) Plural Formation in Dirayta

a. hárka ‘hand’

b. harká ‘hand.PL’

While there is tone in most Cushitic languages, there are a few that are not considered tonal. The Highland East Cushitic language K’abeena has been analyzed as “purely accentual” (Mous 2012: 351). Accent, which Mous defines as the “organization of prominence in the word” is predictable in K’abeena, where stress is found on either the ultimate or penultimate syllable depending on whether the final vowel is voiced or voiceless (Mous 2012:351). In other Cushitic languages, some but not all lexical words or morphemes carry tone. Many of the nouns in the Southern Cushitic languages are toneless, receiving tone only through suffixation, and the East Cushitic language Somali has toneless adverbial clitics (Mous).

While many Cushitic languages are deemed *pitch-accent* or *tonal-accent* languages, the actual understanding of what a *pitch-* or *tonal-accent* is murky. There is no consensus regarding the terms *pitch-accent* or *tonal-accent. Pitch-accent* presumably describes languages that are said to have a mixture of characteristics from both stress and tonal languages. On the continuum of stress languages to tone languages, pitch-accent languages are considered to be intermediate languages on this continuum since they mix properties from both tone and stress languages. Unlike clear tone and stress languages, however, no prototypical pitch-accent language has been identified.[19]

In recent years, there has been a shift in how pitch-accent languages are understood and analyzed. Mous describes Cushitic languages as “accentual or restricted tone languages” (Mous 2012:350). *Accentual* refers to the older terminology, but *restricted tone language* is a more helpful term. To understand what is meant by a *restricted tone language*, it is helpful to first look at the difference between prototypical stress and tone languages. Hyman notes that the widely accepted criteria for a stress language is that “every lexical word has ONE AND ONLY ONE primary stress” (Hyman 2009:659). This can be summed up in two properties: Obligatoriness and Culminativity.

[19]There is a system that does feature a combination of stress and tone. Hyman (2009) calls this a *mixed stress-tone* system in which lexical tones are completely unpredictable, but metrical tones are predictable because they are assigned to syllables that bear primary stress. This is not what we see happening in Cushitic languages.

(150) OBLIGATORINESS: every lexical word has AT LEAST one syllable marked for the highest degree of prominence (primary stress)

(151) CULMINATIVIY: every lexical word has AT MOST one syllable marked for the highest degree of metrical prominence.

(Hyman 2009:659)

When these two properties are found in a language, it is considered to be a stress language. Among Cushitic languages, the property *culminativity* is frequently found, but not *obligatoriness* (Hyman 2009:663). This suggests that they cannot be considered prototypical stress languages.

Unlike stress languages, tone is not associated at the word level, but rather at the morpheme level (Hyman 2009). Hyman defines a tonal language as "A language with tone is one in which an indication of pitch is lexcially affilitated with at least some morphemes" (Hyman 2006:229). Regardless, of the functional load of tone in a language, if at least some morphemes in the language are distinguished by a contrast in pitch, then the language is a tone language. Hyman argues that so-called pitch-accent languages are more accurately analyzed as tonal languages. In his work on Somali, Hyman (1981) had originally followed the terminology of *tonal-accent* and analyzed the high tone in Somali as being associated with the accented syllable. In recent years, however, Hyman (2009) claims that there is no such language considered to be a pitch-accent language that cannot by analyzed as a tonal language (661).

Under this definition of tone languages, many of the presumed *pitch-accent* Cushitic languages can in fact be analyzed as tone languages, albeit as restricted tone languages. They are restricted in the sense that they are not considered to be prototypical tone languages where each morpheme is assigned an underlying pattern. As we already noted earlier, in many Cushitic languages, tone is often associated with only some morphemes. This leads me to posit, along with Hyman's definition of a tone language, that *pitch-accent* languages can be re-analyzed as tone languages. In many cases, this re-analysis of pitch-accent languages as tone languages may be even more straightforward than the analyses previously presented.

6.2 METHODOLOGY

This chapter is not meant to be a complete tone description in Mositacha. To do so would require that we first discover the underlying tone patterns possible for each category of morphemes and then explain the surface realizations of those tone patterns in different contexts (Snider forthcoming). The nature of the fieldwork did not permit gathering the data necessary for a complete analysis of the tone system of Mositacha; nevertheless, this chapter seeks to provide a starting point for tone description in the hope that one day a more comprehensive tone analysis will be conducted.

In the remainder of this chapter, we will look at words in isolation, examining the pitch patterns of each syllable profile of nouns and verbs, and controlling for all factors that affect tone, such as word category, stem type, and syllable profile. While we are limited to the one context of isolation, we can nevertheless establish contrastive pitch patterns. Following the method set forth by Snider (forthcoming) for tone analysis, we will see that Mositacha is a tone language because there are constrastive lexical pitches in comparable environment, albeit it is most likely a restricted tone language.

6.3 TONE IN MOSITACHA

Wondwosen (2015) uses the term *tone-accent* to describe Mositacha. By this, he means that each lexical word has only one high tone per word. According to his analysis, there are two tones – high and low – but he says that these tones are not contrastive as they do not carry meaning. Exactly what he means by this is unclear, but he may be referring to an absence of minimal pairs differentiated only by tone. I respectfully disagree with Wondwosen's terminology and analysis that tone is not phonemic. Additionally, Wondwosen's description states that tone in Mositacha is culminative; that is, a lexical word can have at most one prominent syllable; however, tone does not seem to be obligatory. As we will see, some lexical words do not have a syllable that is more prominent than the others.

6.3.1 Nouns

Among disyllabic and trisyllabic nouns, there are three main pitch patterns found: HL, LH, and level. Because the dataset is limited to one environment (isolation), we are unable at this point to identify the underlying tone patterns; nevertheless, we can identify that there are two contrastive pitch levels in Mositacha as the examples below illustrate.

(152) Phonological contrast in height established in Mositacha[20]

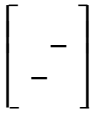


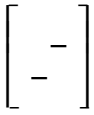
ʔaʃo ‘ancestor’ luʃa ‘leg’ koho ‘ram’

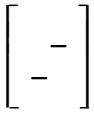
We call the third pitch pattern *level* because the tone does not appear to change on the second syllable. Further analysis would show whether or not these level tones are high or low tones. Since we are presently unable to determine the underlying tone, we will remain content with the label *level*.

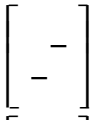
In the remainder of this section on nouns, we will look at the pitch patterns found in each of the disyllabic and trisyllabic nouns. Illustrative examples of each pitch pattern will be provided along with graphs showing the pitch traces which confirm the pitch pattern. The first syllable profile we will examine is CVCV. The following examples illustrate the LH pitch pattern among CVCV nouns.

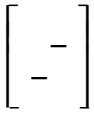
(153) CVCV nouns with LH pitch pattern

a. [ʔɑʃo]  ‘ancestor’

b. [ɗɑhe]  ‘stone, pit’

c. [tʃ’ide]  ‘chaff’

d. [tʃolo]  ‘mortar, pounding pot’

e. [ʒiʃe]  ‘bow (hunting)’

[20] True minimal pairs showing pitch contrast are not found in Mositacha. While minimal pairs make nice examples they are not ncessary for showing contrast in pitch (Snider forthcoming). What is important for showing contrast in pitch height is that all the factors that affect tone are the same. Factors that affect tone include grammatical category of the lexical word, syllable profile, number of TBUs (Tone-Bearing Units), and context in which the word is found. The actual segments themselves do not necessarily affect the pitch. The examples in (152) are comparable examples because they are all nouns, have the same syllable profile (CVCV), the same number of TBUs, and spoken in the same context (isolation).

The LH pitch pattern is confirmed by the pitch traces found which are figured below.

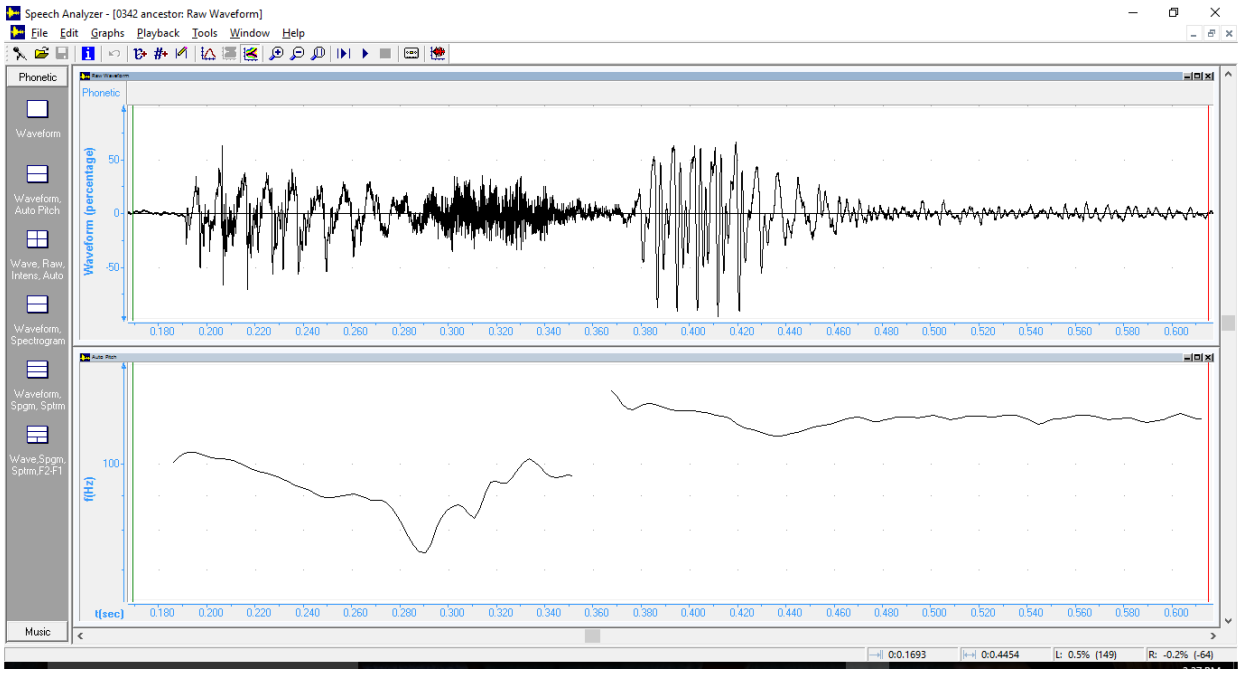


Figure 11: [ʔaʃó] ‘ancestor’

The second, and most common, pitch pattern found among CVCV nouns is HL. In the examples below, examples are given of this pitch pattern.

(154) CVCV nouns with HL pitch pattern

a. [ɗete] [¯ _] ‘squirrel’

b. [luʃa] [¯ _] ‘leg’

c. [para] [¯ _] ‘year’

d. [pata] [¯ _] ‘back’

e. [pora] [¯ _] ‘place’

f. [puto] [¯ _] ‘fire’

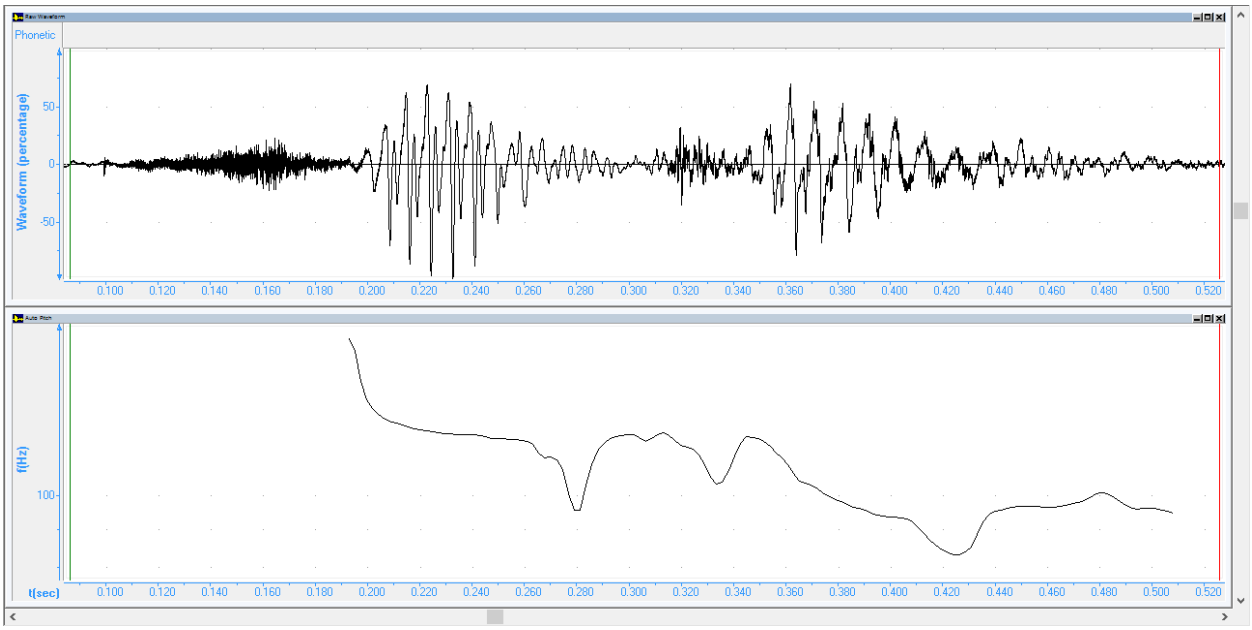


Figure 12: [fúka] ‘fox’

The final pitch pattern is labelled as level because the tone remains the same over the syllables. There are not many CVCV words that fall into this category, but there are a few. Further analysis may show that these surface realizations may be underlyingly high or low tone.

(155) CVCV nouns with level pitch pattern

a. [tiʔo] [– –] ‘flood (n)’

b. [ɓatsʾa] [– –] ‘pimple’

c. [koho] [– –] ‘ram’

d. [pale] [– –] ‘threshing-floor’

e. [mano] [– –] ‘potter’

Again, the pitch traces confirm that the pitch stays the same level throughout the word.

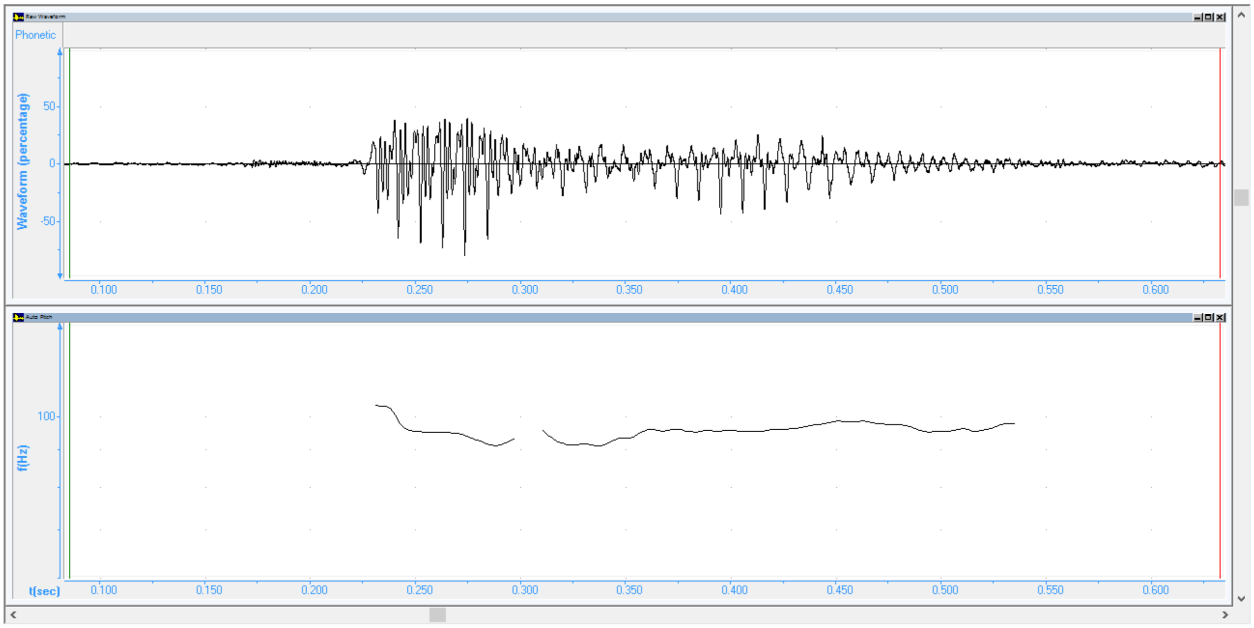
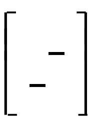
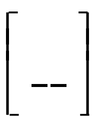
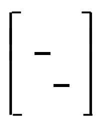


Figure 13: [koho] ‘ram’

The same pitch patterns found in CVCV nouns are also found in CVCCV and CVVCV nouns. Again we find nouns with LH, HL and level pitch patterns. Examples are noted below for each of these syllable profiles.

(156) Phonological contrast in height in CVCCV

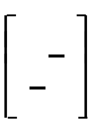
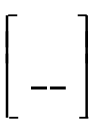
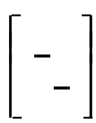
Nouns

tiʃʃa ‘seed’ k’oʃʃa ‘weeds’ laʃʃa ‘day’

(157) Phonological contrast in height in CVVCV

Nouns

paata ‘village’ taatʃe ‘small basket’ paatʃe ‘sickle’

Turning now to trisyllabic nouns, we find the same pitch patterns that we saw in the disyllabic nouns: HL, LH, and level. Below are examples of trisyllabic nouns with the CVCVCV syllable profile. We begin by noting those with the LH pitch pattern.

(158) CVCVCV nouns with LH pitch pattern

a.	[tʃutʃute]	[_ _ ¯]	‘chick’
b.	[zamade]	[_ _ ¯]	‘largest rat’
c.	[ʔatsʾilo]	[_ _ ¯]	‘fly (n)’
d.	[galata]	[_ _ ¯]	‘splendour, glory’
e.	[horokʾe]	[_ _ ¯]	‘hippopotamus’

The LH pitch pattern among CVCVCV nouns is confirmed by the pitch trace shown below.

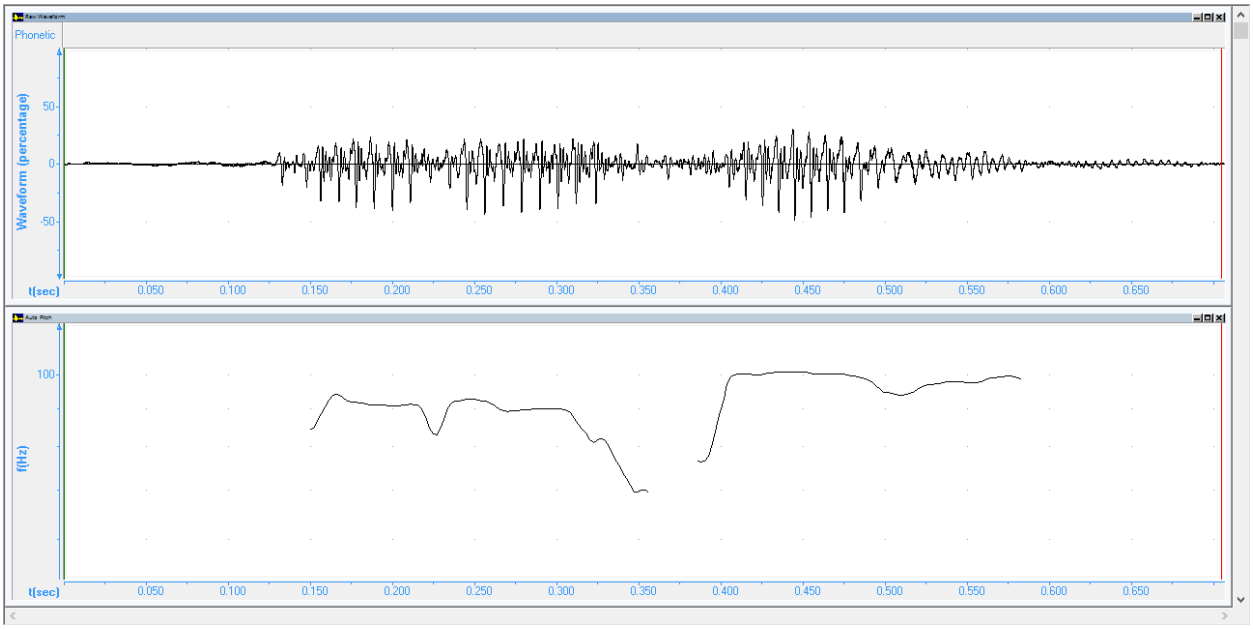


Figure 14: [horokʾé] ‘hippopotamus’

Differentiating between HL and level pitch patterns is not as straightforward as in the disyllabic nouns.[21] This is primarily because the final vowel of trisyllabic nouns is often voiceless which makes it difficult to hear tone. Below are examples of level pitch patterns in CVCVCV nouns.

(159) CVCVCV nouns with level pitch pattern

a.	[ɗoʔotʃa]	⎡ ‒‒‒ ⎤	‘spirit causing hereditary disease’
b.	[haʔitʃa]	⎡ ‒‒‒ ⎤	‘eyelid’
c.	[jarotʃa]	⎡ ‒‒‒ ⎤	‘monitor lizard’
d.	[miʔawa]	⎡ ‒‒‒ ⎤	‘taste (n)’
e.	[k’etʃine]	⎡ ‒‒‒ ⎤	‘giraffe’

Again, the pitch pattern is verified by the pitch traces shown below.

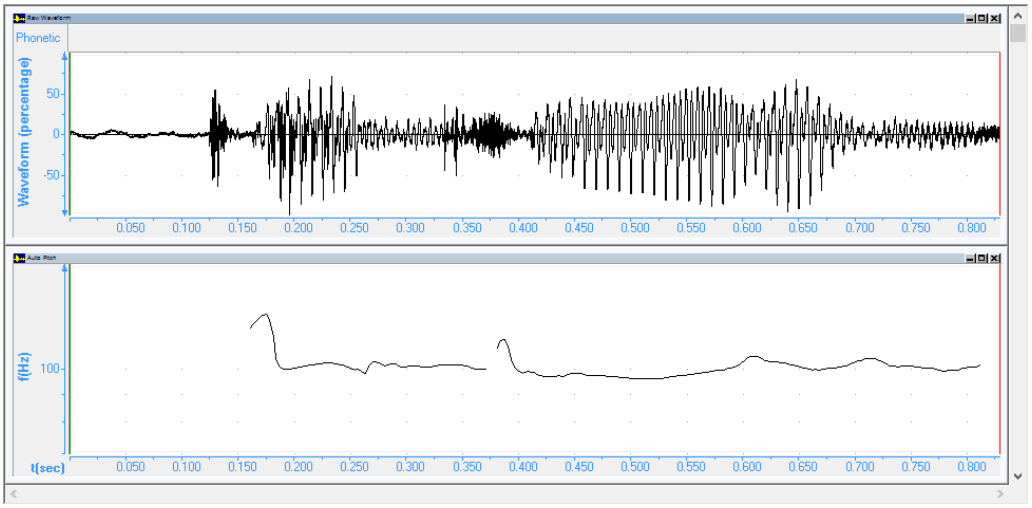


Figure 15: [k’etʃine] ‘giraffe’

[21] In this particular instance, more data and access to native speakers would be extremely beneficial. While the nature of the field research limits the tonal description here, the main objective is to note observations that will benefit future research.

The following CVCVCV nouns have HL pitch patterns. The second tone is always on the last syllable.

(160) CVCVCV nouns with HL pitch patterns

a.	[punita]	[‾‾ _]	‘coffee’
b.	[pinano]	[‾‾ _]	‘animal’
c.	[ʃibotʃa]	[‾‾ _]	‘trap (n)’
d.	[ʔuratʃa]	[‾‾ _]	‘moth’
e.	[mekʼete]	[‾‾ _]	‘bone’

The pitch traces shown below confirm the HL pitch pattern.

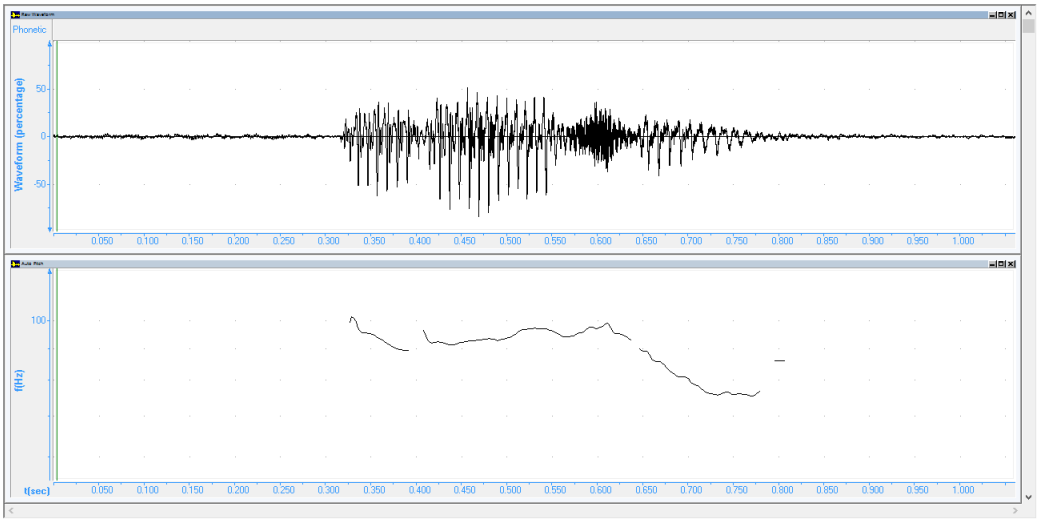


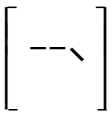
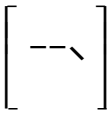
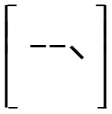
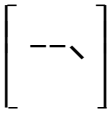
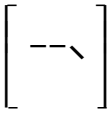
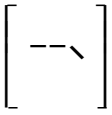
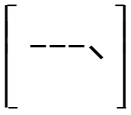
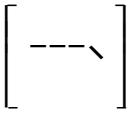
Figure 16: [ʔúrátʃa] ‘moth’

All the other trisyllabic nouns have the same pitch patterns as the CVCVCV syllable profile. For examples of each pitch pattern in all the trisyllabic nouns, the reader is referred to Appendix B.

6.3.2 Verbs

Turning our attention to verbs, we find that pitch patterns in verbs are more varied than in the nouns. In §1.3.1, we noted the presence of recurring sequences on verbs that may be suffixes. Among verbs with these similar recurring sequences we find similar pitch patterns. Verbs ending with the sequence *-so* have the pitch pattern H-falling regardless of how many syllables the verb contains. This pattern differs from the level pitch patterns we saw above in the nouns. Here the final syllable is a slightly falling tone as seen in the examples below.

(161) Verbs with H-falling pitch patterns

a. [saɾiso]		‘thatch’
b. [kokiso]		‘dry out (clothes)’
c. [k’eppiso]		‘break’
d. [ɾakkoso]		‘lack (v)’
e. [feelaso]		‘flee, run away from’
f. [kolliso]		‘announce’
g. [kokoiso]		‘fan (v)’
h. [habiaso]		‘abstain’

Another very common sequence in verbs is *-eetʃa*. Interestingly, the verbs ending with this sequence primarily have the pitch pattern LHL, although there are a few that have HL and level pitch patterns. Examples of verbs with the pitch pattern LHL are given below.

(162) Verbs with LHL pattern

a. [ɗekeetʃa] ‘hide (tr)’

b. [hebeetʃa] ‘to chisel, to sharpen’

c. [patʃeetʃa] ‘disappear’

This pattern is clearly seen in the pitch traces illustrated below.

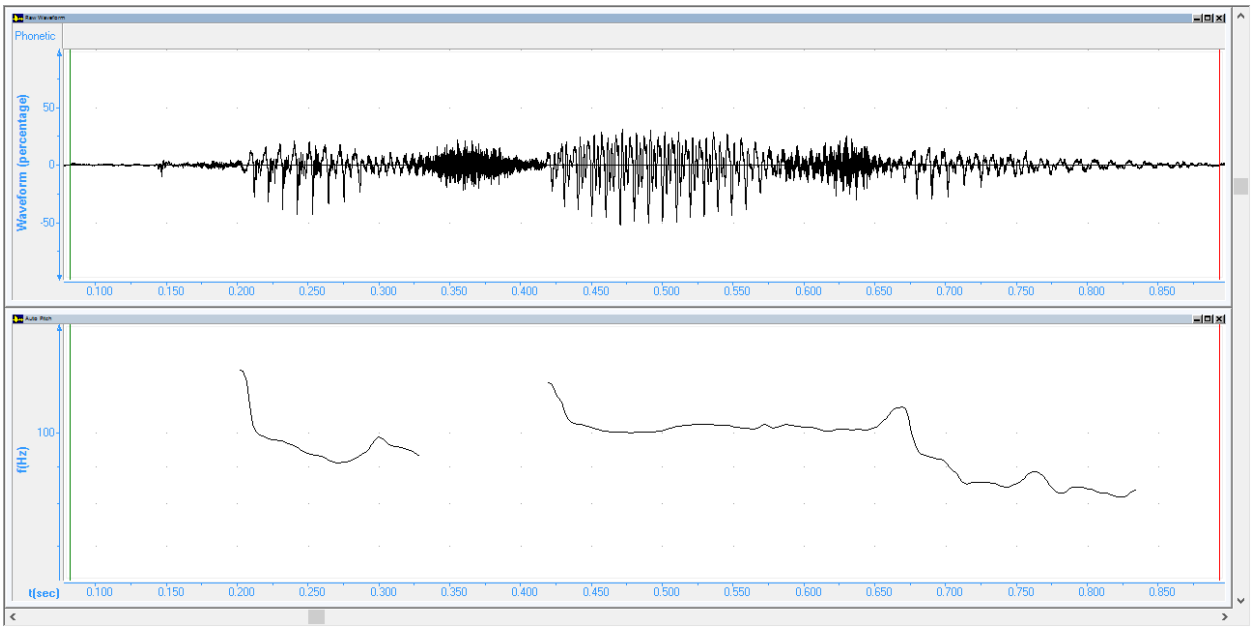


Figure 17: patʃeetʃa ‘disappear’

Below are a few examples showing the pitch pattern HL among verbs ending with the sequence *-eetʃa*.

(163) Verbs with HL pattern

a. [ʔaɾeetʃa] ‘drive away’

b. [ɗitʃtʃeetʃa] ‘snatch, seize’

c. [faɗeetʃa] ‘look for’

The HL pitch pattern on these verbs is confirmed by the pitch traces shown below.

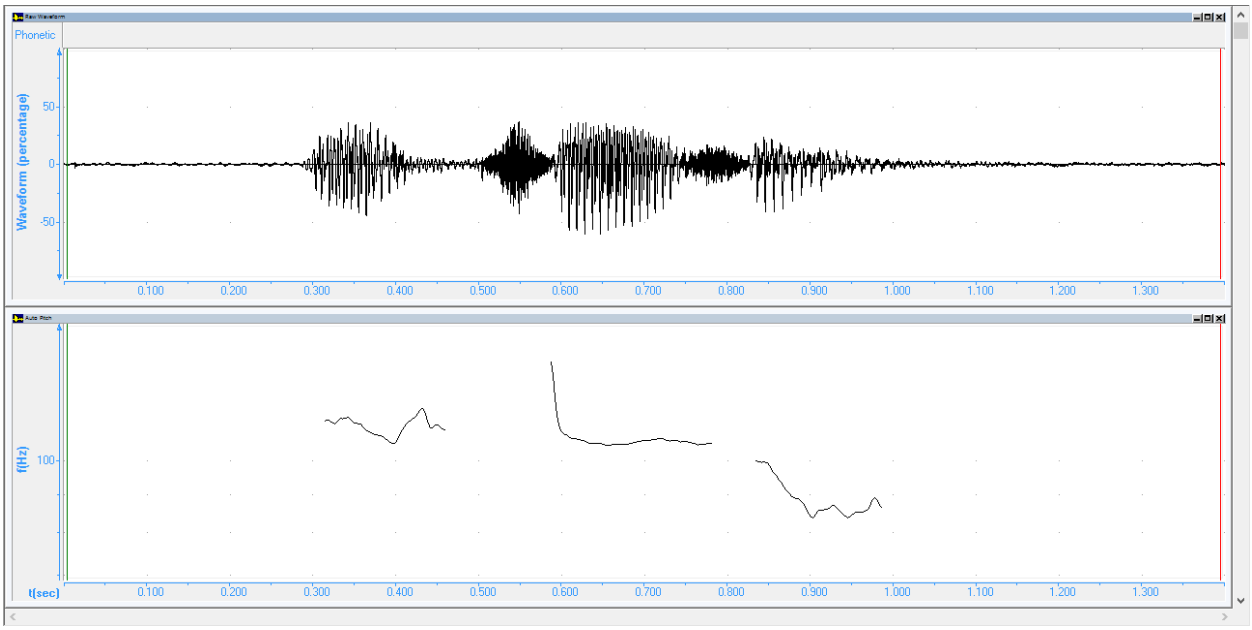


Figure 18: [dĭtʃtʃeétʃa] ‘snatch, seize’

The third pitch pattern among verbs ending with the sequence *-eetʃa* is a level pitch pattern. These do not have as significant of a falling tone on the final syllable like the verbs which end in *-so* sequences.

(164) Verbs with level pitch pattern

a. [k’ajeetʃa] [– – –] ‘pour’

b. [tiʃeetʃa] [– – –] ‘pull’

Pitch traces confirming this pitch pattern are shown below.

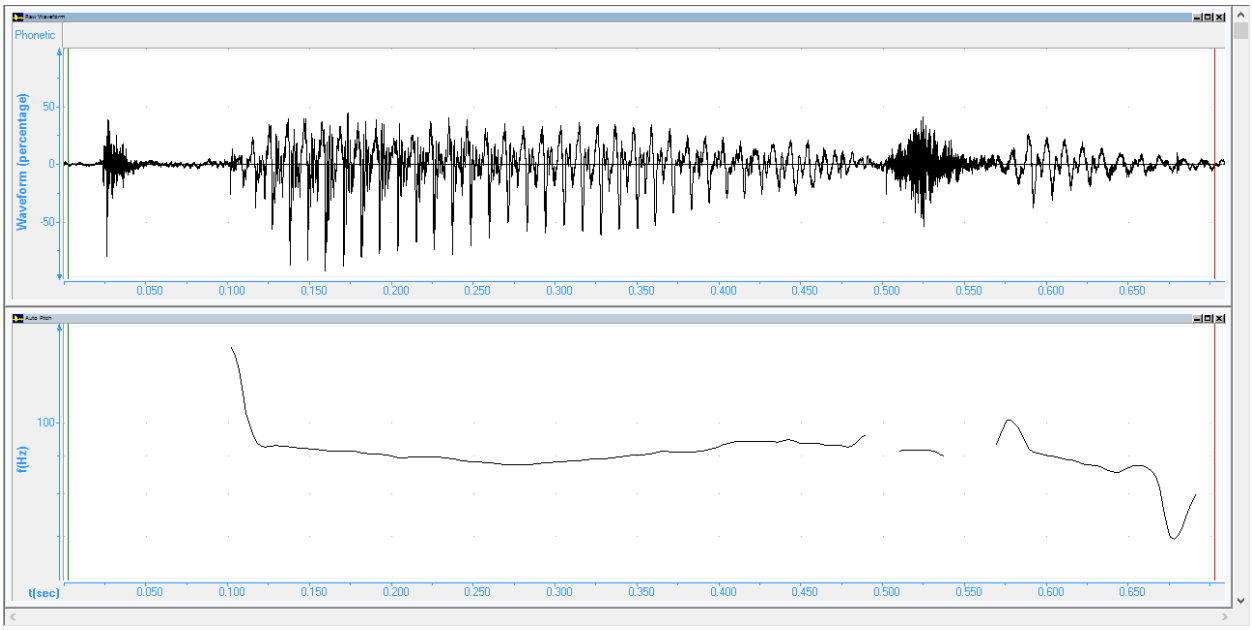


Figure 19: [kʾajeetʃa] ‘pour’

Verbs in the third person perfective form containing the focus prefix *he-* have a level pitch pattern regardless of the root syllable profile.

(165) Third person perfective verbs

a. [hepeʔe] [– – –] ‘dive’

b. [heʃumɓen] [– – –] ‘(be) shrivelled, (be) wrinkled (fruit)’

c. [hekaane] [– – –] ‘grow (of plants)’

d. [hetuule] [– – –] ‘cross (river)’

Once again, this pitch pattern is verified by the pitch traces.

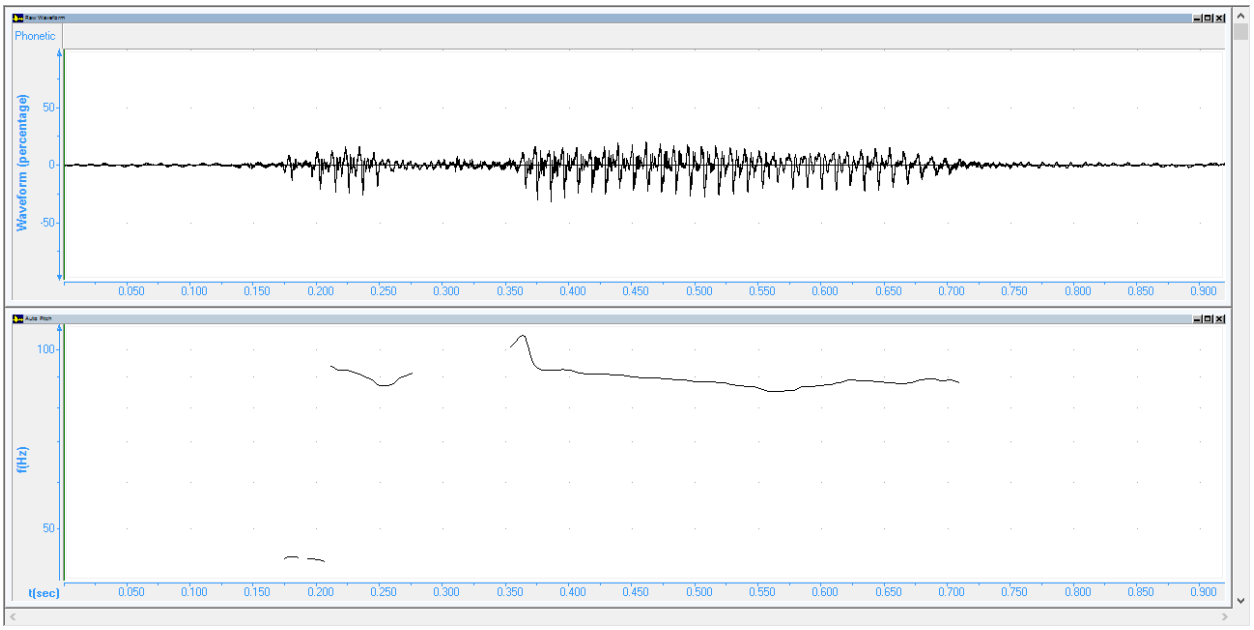


Figure 20: [hekaane] ‘grow (of plants)’

Verbs that do not have apparent suffixes have the same pitch patterns that we saw earlier among the nouns. A few examples are listed briefly below.

(166) Disyllabic verbs with no apparent suffixes

a. [pissa] ‘be beautiful’

b. [tʃiitʃa] ‘hate (v)’

c. [ʔalʔo] ‘(be) scarce’

d. [faatsʾo] ‘cut down (tree)’

e. [hema] ‘hunt (v)’

f. [huke] ‘(be) stubborn’

g. [lela] [−−] ‘tell, recount (story)’

h. [ʔeeɗe] [−−] ‘(be) unripe’

i. [ʔiβo] [−−] ‘insult (v)’

6.4 Future Research

It is the sincere desire of the author to see further research done in the area of tone. As seen in the first part of this chapter, tone analysis among Cushitic languages in general and especially among the Konsoid dialect chain is needed. May this chapter serve as an encouragement to phonologists to pursue tone studies in Mositacha and other Cushitic languages!

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APPENDIX A: LIST OF TARGET WORDS MEASURED FOR FORMANT PLOT CHARTS

This Appendix contains the list of words used in Chapter 3 (Segmental Phonology: Vowels) to measure the vowels for the formant plot charts. The underlined vowel indicates the vowel measured. The vowel measurements are included as well.

(167)	List of target words with /a/	F1 Value	F2 Value
a. k'a̲ɾa	'again'	680	1544
b. la̲ka	'ground, land'	663	1482
c. ʔa̲ʃo	'ancestor'	628	1465
d. ka̲ɾa	'piece'	686	1516
e. pa̲ta	'back'	719	1334

(168)	Target words with /e/		
a. he̲ʃa	'wife'	453	2016
b. le̲hi	'six (6)'	509	1801
c. ʔe̲ko	'tail'	462	1781
d. tʃ'ide̲	'chaff'	418	1951
e. ɗe̲te	'squirrel'	464	1853

(169)	Target words with /i/		
a. hi̲bo	'dry season'	333	1994
b. hi̲ts'a	'fireplace'	294	2188
c. hi̲ts'o	'fireplace (pl)'	307	2225
d. pi̲ʒe	'water'	310	2111
e. tʃ'i̲de	'chaff'	349	2103

(170) Target words with /u/

a. kula	‘bulb, tuber’	389	904
b. ʔula	‘field’	344	740
c. luʃa	‘leg’	382	1258
d. kuβiso	‘(be) hot (objects)’	362	807

(171) Target words with /o/

a. hoʃe	‘bed’	468	1060
b. koho	‘ram’	454	1024
c. koka	‘beeswax’	457	984
d. soʔo	‘meat’	429	999
e. ʔolo	‘olden times’	470	1068

(172) Target words with /ii/

a. fiira	‘flower’	318	2233
b. kiiʃa	‘scorpion’	276	2131
c. piita	‘dirt, soil’	314	2098
d. ʃiiɓo	‘tenth month’	288	2263
e. ʔiiʔɪ	‘no’	315	2225

(173) Target words with /ee/

a. keeto	‘right, (be) correct’	454	1932
b. ʃeeɓo	‘crocodile’	412	1966
c. seeti	‘that (man)’	406	1961
d. ts’eeta	‘hundred (100)’	486	1897
e. ʔeeɗe	‘(be) unripe’	499	1995

(174) Target words with /aa/

a. faaʔa	‘bush’	621	1257
b. kaala	‘camel’	705	1404
c. taaɗa	‘dew’	745	1540
d. zaale	‘elephant's trunk’	791	1440
e. paala	‘comb (of rooster)’	628	1313

(175) Target words with /oo/

a. ɗooɗe	‘vine’	477	995
b. ɗook’o	‘(be) sour’	443	988
c. goofare	‘crest (of bird)’	475	966
d. hoola	‘feather’	471	926
e. k’ooso	‘sun’	420	840

(176) Target words with /uu/

a.	kuuta	‘cemetery for infants’	385	964
b.	tuuma	‘garlic’	387	831
c.	puutsʾa	‘curse (n)’	329	866
d.	hetuule	‘cross (river)’	358	839
e.	ʔuukʾaʃiso	‘twist’	372	736

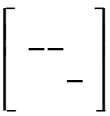
(177) Target words with [ʌ]

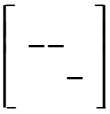
a.	hala	‘yesterday’	697	1327
b.	fuuta	‘cotton’	590	1483
c.	fuutʃa	‘drizzle’	433	1716
d.	hantʃa	‘swarm (n)’	491	1750
e.	hitsʾa	‘fireplace’	553	1538
f.	hoola	‘feather’	610	1371
g.	fiira	‘flower’	555	1621

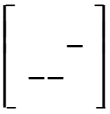
APPENDIX B: PITCH PATTERNS IN TRISYLLABIC NOUNS

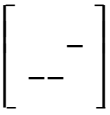
Listed below are examples of pitch patterns found in all of the trisyllabic noun syllable profiles found in Mositacha.

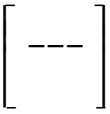
CV.CV.CV

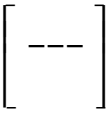
a. [paraso]  ‘horse’

b. [mekʾete]  ‘bone’

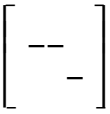
c. [ɗusumu]  ‘door’

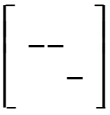
d. [mahena]  ‘barren woman’

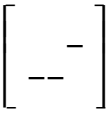
e. [ʔoboba]  ‘grandchild (male)’

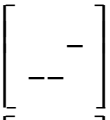
f. [tʃʾamaɾo]  ‘thief’

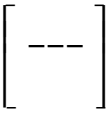
CV.CVC.CV

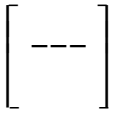
a. [helitta]  ‘young man’

b. [kakortʃa]  ‘beehive’

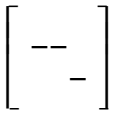
c. [foɾondo]  ‘throat

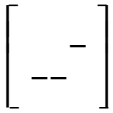
d. [tʃabajjo]  ‘mouse’

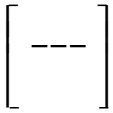
e. [masalkʾo]  ‘snail’

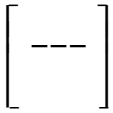
f. [katʃantʃa]  ‘pig’

CV.CVV.CV

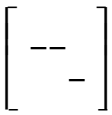
a. [pataaʃa]  ‘back of something’

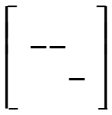
b. [tʃʾilooʃa]  ‘brideprice’

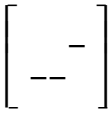
c. [rabootʃa]  ‘betrothed’

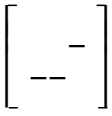
d. [ʔileela]  ‘face’

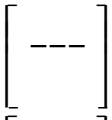
CVV.CV.CV

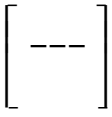
a. [maatʃetʃa]  ‘upper grinding stone’

b. [hiijawe]  ‘orphan’

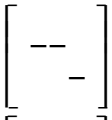
c. [hauwalo]  ‘black bird’

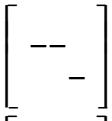
d. [tʃʾuuluka]  ‘leprosy’

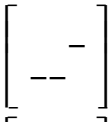
e. [ʔeeɗama]  ‘fruit’

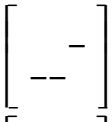
f. [tʃaatʃitʃa]  ‘ankle’

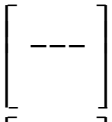
CVC.CV.CV

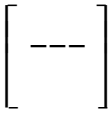
a. [kombotʃo]  ‘maize’

b. [ʔorraʃa]  ‘cloud’

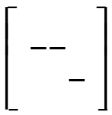
c. [holbokʾa]  ‘valley’

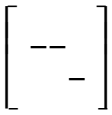
d. [ʔoɾɾobo]  ‘crow’

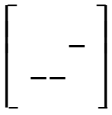
e. [dulluko]  ‘abscess’

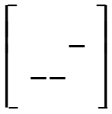
f. [hittina]  ‘descendant’

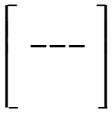
CVC.CVC.CV

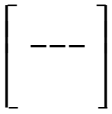
a. [ɗĩnkiʃʃa]  ‘funeral of infant’

b. [ɗammantu]  ‘omen’

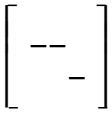
c. [tankarsa]  ‘elephant’

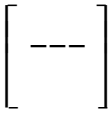
d. [kaɾɾajtʃa]  ‘inheritance’

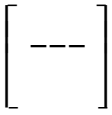
e. [hontʃanta]  ‘noise, sound’

f. [ʔannanta]  ‘journey, trip’

CVVC.CV.CV

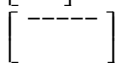
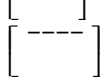
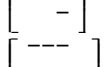
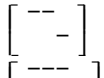
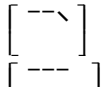
a. [haaʃʃotʃa]  ‘shoulder blade’

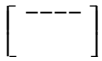
b. [haampiro]  ‘bird’

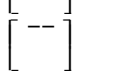
c. [goondafe]  ‘arrow’

APPENDIX C: WORD LIST

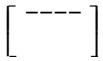
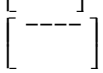
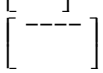
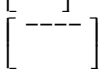
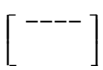
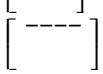
Phonemic	Phonetic	Surface Pitch	Gloss
balbutʃe	balbutʃe	˥ ˥˥	stutter
ban-ban-atʃa	banbanatʃa	˥ ˥˥˥	dung beetle
baʃʃak'-eetʃa	baʃʃak'eetʃa	˥ ˥˥˥	contradict
ɓats'a	ɓats'a	˥ ˥	pimple
bɾata	bɾata	˧ ˥	gun
buk'ajja	buk'ajja	˥ ˥˥	shoot (new plant)
ɓum-bul-eetʃa	ɓumbuleetʃa	˥ ˥˥˥	roll
buɾtukaane	buɾtukaane	˧ ˥˥˥	orange
ɗaaji	ɗaaji	˥ ˧	give
ɗaamo	ɗaamo	˧ ˥	flour
ɗaamum-eetʃa	ɗaamumeetʃa	˥ ˥˥˥	rule over, dominate
ɗaatuliʃa	ɗaatuliʃa	˥ ˥˥ ˧	firstborn
ɗaaʔaajtʃa	ɗaaʔaajtʃa	˥ ˥˥	hail
ɗahe	ɗahe	˧ ˥	stone, pit
ɗahentʃ-itʃa	ɗahentʃitʃa	˥ ˥˥˥	deaf (mute) person (fem)
ɗahe-ʔauɾijo	ɗaheʔauɾijo		rock (large)
ɗahhentʃa	ɗahhentʃa	˥ ˥˥	deaf (mute) person
ɗajja	ɗajja	˧ ˥	gift
ɗak'ajsije	ɗak'ajsije	˥ ˥˥˥	mark out, peg out (ground)
ɗalasuwahe	ɗalasuwahe		(be) born
ɗale	ɗale	˧ ˥	medicine
ɗale-malajtʃa	ɗalemalajtʃa		venom (of snake)
ɗalliotʃa	ɗalliotʃa	˥ ˥˥ ˧	eagle (bird with large wings)
ɗam-aank'al-eetʃa	ɗamaaŋk'aleetʃa	˥ ˥˥˥˥	prepare (food to cook)
ɗammajtʃa	ɗammajtʃa	˥ ˥˥ ˧	cold weather
ɗammantu	ɗammantu	˥ ˥˥ ˧	omen

ɗamo	ɗamo		food
ɗamoj-ʔallhaate	ɗamojʔallhaate		leftovers
ɗank'ɑrasa	ɗaŋk'arasa		baby
ɗantʃa	ɗantʃa		calabash
ɗappisa-mpajtʃa	ɗappisampajtʃa		(be) wrong
ɗarame	ɗarame		gossip (v)
dark'o	dark'o		small intestine
ɗaur-eetʃa	ɗaureetʃa		protect, defend
ɗawam-eetʃa	ɗawameetʃa		fight
ɗaw-eetʃa	ɗaweetʃa		spank (child)
ɗaʔiʃa	ɗaʔiʃa		fig
ɗeɗ-ɗek'otʃa	ɗeɗɗek'otʃa		drip
ɗeesotʃa	ɗeesotʃa		shame
ɗeha-so	ɗehaso		(be) flat
ɗehas-ootʃa	ɗehasootʃa		(be) loose, slack
ɗeho-ɗehojɗe	ɗehoɗehojɗe		hasten, hurry
ɗeh-ussa	ɗehussa		near
ɗek-eetʃa	ɗekeetʃa		hide (tr)
ɗera-so	ɗeraso		lengthen
ɗer-usa	ɗerusa		(be) long
ɗete	ɗete		squirrel
ɗeʔ-eetʃa	ɗeʔeetʃa		come
ɗih-eetʃa	ɗiheetʃa		transplant
ɗiika	ɗiika		blood
ɗiinawsa	ɗiinawsa		odour, smell (n)
ɗikani-kia	ɗikanikia		be light color
ɗikila	ɗikila		elbow
ɗikka-so	ɗikkaso		befit, suit
ɗikk-asootʃa	ɗikkasootʃa		agreement
ɗikki-so	ɗikkiso		arrange

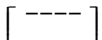
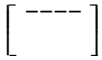
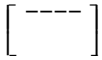
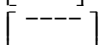
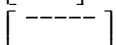
ɗĩkk-untʃa	ɗĩkkuntʃa		peace
ɗĩlisa-so	ɗĩlisaso		stretch
ɗĩllo	ɗĩllo		charcoal
ɗĩna	ɗĩna		umbilical cord
ɗĩnɗa	ɗĩnɗa		side (of body)
ɗĩnɗa-ji	ɗĩnɗaji		half
ɗĩnɗe-nne	ɗĩnɗenne		side (of something)
ɗink'a-k'aro	ɗiŋk'ak'aro		millipede
ɗĩnk-eetʃa	ɗĩŋkeetʃa		kiss (v)
ɗĩnkiʃʃa	ɗĩŋkiʃʃa		funeral of infant
ɗĩrtʃa	ɗĩrtʃa		boy
ɗĩtʃtʃ-eetʃa	ɗĩtʃtʃeetʃa		snatch, seize
ɗoge	ɗoge		oryx
ɗokko-so	ɗokkoso		crush (tr)
ɗoletʃa	ɗoletʃa		dove
ɗontʃeetʃa	ɗontʃeetʃa		forge (n)
ɗooɗe	ɗooɗe		vine
ɗook'arotʃa	ɗook'arotʃa		toad
ɗook'o	ɗook'o		(be) sour
ɗoso-lajtʃa	ɗosolajtʃa		cripple (n)
ɗoso-lajtʃ-itʃa	ɗosolajtʃitʃa		cripple (n) (fem)
ɗoʔotʃa	ɗoʔotʃa		spirit causing hereditary disease
ɗuh-eetʃa	ɗuheetʃa		close, shut (tr)
ɗukatʃahooɗe	ɗukatʃahooɗe		hope (v)
ɗulka	ɗulka		curdled milk
ɗulluk'o	ɗulluk'o		abscess
ɗunkubatta	ɗuŋkubatta		(be) naked
ɗusumu	ɗusumu		door, doorway cover
ɗusʔe	ɗusʔe		kidney
ɗuuʃ-eetʃa	ɗuuʃeetʃa		stop up

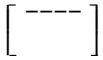
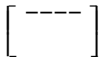
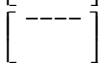
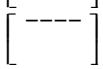
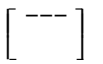
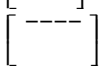
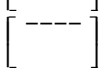
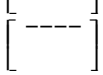
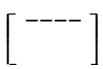
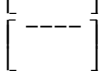
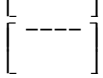
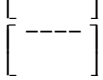
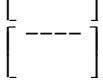
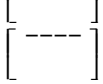
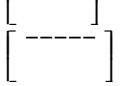
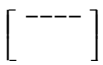
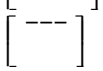
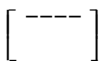
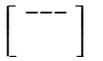
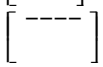
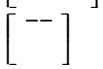
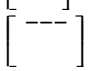
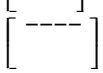
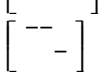
dʒoboɾna	dʒoboɾna		bag
faaʃo	faaʃo		silk, hair (of maize)
faats'o	faats'o		cut down (tree)
faats'o	faats'o		branch (of tree)
faaʔa	faaʔa		bush
faɗajtʃini-kia	faɗajtʃinikia		need (v)
faɗ-eetʃa	faɗeetʃa		look for
fa-fa	fafa		python
faɾajtʃa	faɾajtʃa		zebra
faɾenʒa	faɾenʒa		white man
faɾɾata	faɾɾata		locust
feela-so	feelaso		flee, run away from
fiidʒatto	fiidʒatto		splinter, sliver (n)
fiiletʃa	fiiletʃa		flea
fiiɾa	fiiɾa		flower
fiɾo	fiɾo		birdlime
fiʃkafuk-eetʃa	fiʃkafukeetʃa		squeak (wheel) (v)
fits'e	fits'e		comb (n)
folto	folto		waterhole
foolanta	foolanta		stink, smell (bad)
foots'a	foots'a		baby sling
foɾondo	foɾondo		throat
fuka	fuka		fox
fukeetʃa	fukeetʃa		blow (horn)
fule	fule		club, cudgel
funtuko	funtuko		owl
fuuta	fuuta		cotton
fuutʃa	fuutʃa		drizzle
gaama	gaama		mane
gaanetʃa	gaanetʃa		pot (for water)

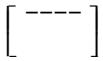
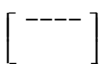
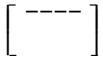
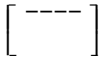
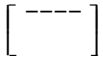
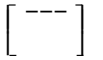
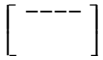
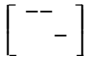
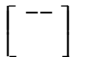
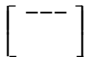
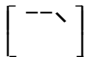
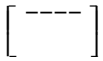
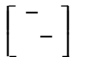
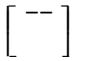
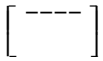
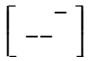
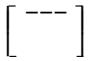
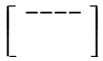
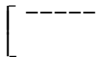
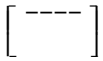
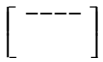
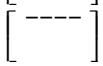
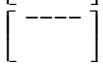
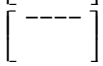
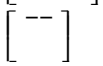
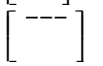
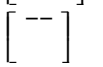
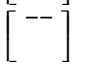
gaano	gaano		host
galata	galata		splendour, glory
galunda	galunda		(be) yellow
gataɾe	gataɾe		bush country, rural area
geegotʃa	geegotʃa		tortoise (land)
gilagiste	gilagiste		small mushroom that grows in clumps
gobah	gobah		corn husk (n)
goofaɾe	goofaɾe		crest (of bird)
goondafe	goondafe		arrow
goose	goose		basket-large
gune	gune		rib
haala	haala		miscarriage, abortion, stillbirth
haaɾo	haaɾo		herd, tend (cattle, sheep) (v)
haaɾo	haaɾo		nightingale, chats, flycatcher
haaɾotʃa	haaɾotʃa		take revenge
haaɾtʃa	haaɾtʃa		ninth month
haaʃʃotʃa	haaʃʃotʃa		shoulder blade
haatʃasootʃa	haatʃasootʃa		razor
haatʃ-eetʃa	haatʃeetʃa		(be) hollow
haawetʃa	haawetʃa		spy (n)
habaɾ-baɾa	habaɾbaɾa		(be) impatient
habia-so	habiaso		abstain
haɗatʃa	haɗatʃa		(be) eager, (be) zealous
haɗɗawa	haɗɗawa		(be) bitter
haɗuma	haɗuma		broom
hafufe	hafufe		blow (with mouth)
ha-hawatʃa	hahawatʃa		ibis (bird with long bill)
hajbatʃa	hajbatʃa		husband
hajɗo	hajɗo		fat
hajja-so	hajjaso		say goodbye, take leave of

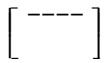
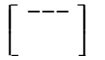
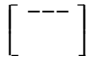
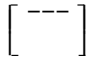
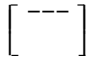
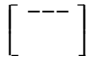
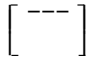
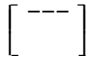
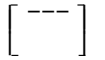
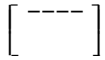
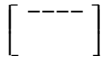
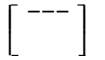
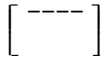
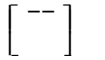
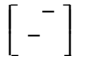
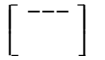
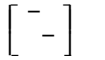
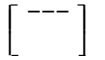
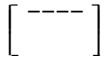
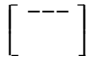
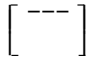
hajjaweetʃa	hajjaweetʃa		wind (n)
hajj-eetʃa	hajjeetʃa		fade
hajj-eetʃa	hajjeetʃa		divorce (v)
hajjo	hajjo		air (breathed)
hajjusa	hajjusa		lie (n) (falsehood)
hajna	hajna		roof
hakarofe	hakarofe		snore
hala	hala		yesterday
hala-tʃurajʃʃo	halatʃurajʃʃo		day before yesterday
halbata	halbata		three (3)
halbatio	halbatio		(be) third
halila	halila		shout (v), cry out
halitʃa	halitʃa		cane, walking stick
hampirta	hampirta		bird
hananume	hananume		(be) curious
hantʃa	hantʃa		swarm (n)
hantʃuwie	hantʃuwie		chew
haraminanne	haraminanne		edge (n)
har-haro	harharo		warthog
harka	harka		hand
harka-pakʼkʼi	harkapakʼkʼi		clap (hands)
harkerobakʼabe	harkerobakʼabe		bow (as in greeting)
harrabaʃʃa	harrabaʃʃa		spider
harretʃa	harretʃa		donkey
haʃaʃ-eejtʃa	haʃaʃeejtʃa		whisper (v)
hatsʼtsʼ-eetʃa	hatsʼtsʼeetʃa		foam
hatti-so	hattiso		leave (something somewhere)
hauk'etʃa	hauk'etʃa		stem, stalk (of maize, millet, etc.)
hauwa	hauwa		(be) alone
hauwalo	hauwalo		small black bird flies in groups

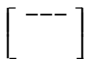
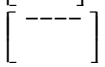
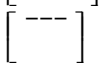
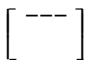
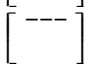
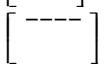
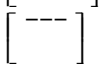
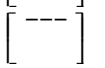
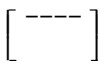
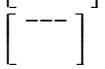
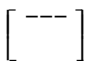
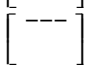
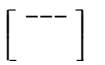
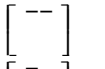
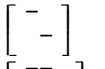
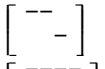
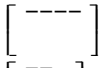
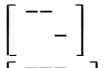
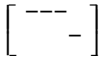
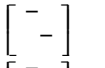
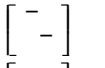
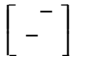
hawɗa	hawɗa		weaver
haʔ-eetʃa	haʔeetʃa		arrive
haʔi-so	haʔiso		raise, lift
haʔisotʃa	haʔisotʃa		weight
haʔisotʃa	haʔisotʃa		load, burden (n)
haʔitʃa	haʔitʃa		eyelid
he-aane	heaane		travel, go on a trip (v)
he-aane	heaane		walk
heake	heake		get, obtain
he-ak'ije	heak'ije		indicate, point (as with the finger)
he-annaʃ-ʃe	heannaʃʃe		incubate, set (on eggs)
he-ats'e	he-ats'e		rest
heb-eetʃa	heβeetʃa		to chisel, to sharpen
he-ɓuguli-tʃe	heɓugulitʃe		lay (eggs)
he-ɗakaje	heɗakaje		hear
heɗa-kajisame	heɗakajisame		feel (passive)
he-ɗakassate	heɗakassate		listen
he-ɗame	heɗame		eat
he-ɗappi-je	heɗappije		fork (in path)
he-ɗaure	heɗaure		obstruct
he-ɗawekaʃe	heɗawekaʃe		knock down, knock over (an object)
heɗeboʃʃe	heɗeboʃʃe		
he-ɗeeboʃe	heɗeeboʃe		(be) thirsty, thirst (v)
he-ɗehajje	heɗehajje		offer (v)
he-ɗehajje	heɗehajje		
he-ɗehe	heɗehe		sprout (v)
he-ɗiɗije	heɗiɗije		groan (with pain)
he-ɗiike	heɗiike		bleed
he-ɗine	heɗine		heal (tr), cure (v)
he-ɗinke	heɗiŋke		lick

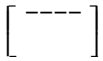
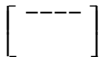
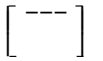
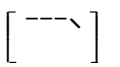
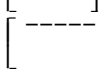
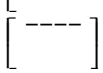
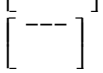
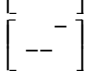
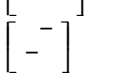
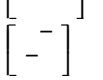
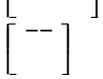
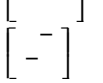
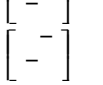
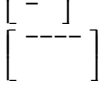
he-dĩnnassate	heɗĩnnassate		smell (v)
heeaʃe	heeaʃe		kick
heekotʃa	heekotʃa		sheep
heela	heela		frontier (of ethnic area)
heela-nak'e	heelanak'e		boundary (of field)
heeluke	heeluke		suck
he-eskaʃe	heeskaʃe		(be) lying down
heeskaʃʃe	heeskaʃʃe		be lying down
he-felle	hefelle		run
he-hai-je	hehaije		carry (in arms)
he-haje	hehaje		wake up (intr)
he-hajjawe	hehajjawe		blow (of wind) (v)
he-halile	hehalile		grunt (from effort)
he-haɾe	hehaɾe		melt (intr)
he-hatʃe	hehatʃe		(be) awake, alert (fem)
he-hauwaʃe	hehauwaʃe		spy (v), spy on
he-heliʃaʃe	heheliʃaʃe		shiver, tremble
he-hitʃe	hehitʃe		send (someone to do something)
he-hitʃe	hehitʃe		send (something to someone)
he-hooɗe	hehooɗe		gnaw
he-hoʃile	hehoʃile		get well, recover
hejiɗe	hejiɗe		decide
hek'a	hek'a		ringworm
he-kaane	hekaane		grow (of plants)
he-k'aba	hek'aβa		have, possess
heka-ɗeh-atʃi	hekaɗehatʃi		near
hekaɗĩkkatʃi	hekaɗĩkkatʃi		(be) good
heka-holtsa	hekaholtsa		(be) heavy
he-k'ajjoʃe	hek'ajjoʃe		cough (v)
heka-kaane	hekakaane		(be) important

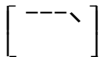
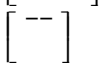
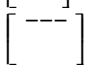
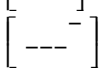
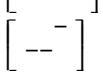
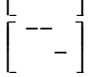
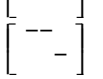
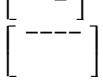
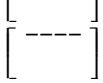
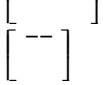
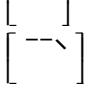
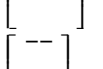
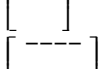
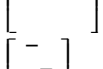
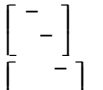
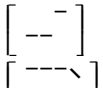
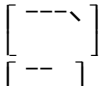
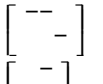
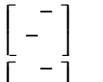
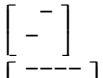
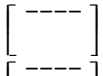
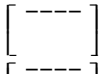
heka-kaane	hekakaane		(be) big
heka-kʾime	hekakʾime		(be) great, (be) powerful
heka-kolle	hekakolle		domesticate, tame
heka-lekka	hekalekka		(be) abundant
heka-lekkane	hekalekkane		often
he-kamma	hekamma		which (one)?
heka-najkʾa	hekanajkʾa		(be) small, few
he-kʾaname	hekʾaname		faint
he-kʾanine	hekʾanine		bite (v)
heka-ʔoʃile	hekaʔoʃile		(be) light (not heavy)
hekapala	hekapala		sew
heka-palʔa	hekapalʔa		enlarge
hekapila	hekapila		other (men)
hekapissa	hekapissa		knot (in wood)
heka-pissa	hekapissa		(be) light (colour)
heka-pooɾa	hekapooɾa		(be) black
heka-pottije	hekapottije		(be) white
he-kaɾije	hekaɾije		inexpensive (regarding a person such as an old unmarried woman)
heka-ɾooma	hekaɾooma		(be) red
he-kaʃe	hekaʃe		sell
heka-sekatʃi	hekasekatʃi		far
he-kʾasije	hekʾasije		plead, implore, beg
heka-tʃinaʔa	hekatʃinaʔa		small in size
he-kʾeeɗe	hekʾeeɗe		take (away), carry away
he-keɾʔiije	hekeɾʔiije		swallow
hekia	hekia		say
he-kilbe	hekilbe		kneel
he-kʾimije	hekʾimije		harden
hekʾkʾ-eetʃa	hekʾkʾeetʃa		scratch (v)

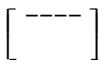
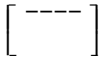
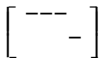
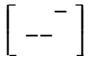
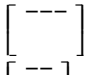
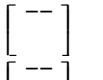
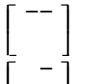
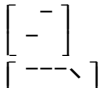
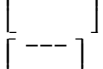
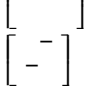
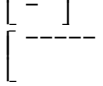
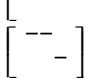
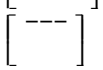
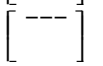
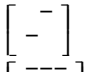
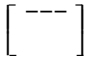
he-k’oitte	hek’oitte		hatch (fem)
he-koomaɾije	hekoomaɾije		growl
he-koom-aʔa	hekoomaʔa		(be) short
he-k’ullaʃe	hek’ullaʃe		bend down, stoop
he-k’umame	hek’umame		crunch
he-kuutʃawe	hekuutʃawe		dry up, evaporate
he-kuuwe	hekuuwe		(be) sated
he-kwajtʃuʃe	hekwajtʃuʃe		stumble
helafoʃe	helafoʃe		breathe
helitta	helitta		young man
helle	helle		rise up (intr)
he-loaʃe	heloaʃe		(be) rich
heltʃi-so	heltʃiso		shake (tr)
he-luukitte	heluukitte		nurse, suckle (baby) (tr)
hema	hema		hunt (v)
hema	hema		hunter
he-maʃʃote	hemaʃʃote		dream (v)
hemɓanta	hemɓanta		invite
hemb-eetʃa	hembeetʃa		call (someone)
he-mitate	hemitate		turn round (intr)
he-mol-molije	hemolmolije		make smooth
he-moɾaʃe	hemoɾaʃe		pay (for goods, services, etc.)
he-najk’aʃe	henajk’aʃe		(be) ruined, (be) spoiled
he-najk’ije	henajk’ije		blight (it is destroyed)
henannuk’e	henannuk’e		senile person
henausije	henausije		threaten
heni	heni		five (5)
he-obaj-e	heobaje		burn (present)
he-oɗɗe	heoɗɗe		succeed
heoɗe	heoɗe		cultivate, farm (v)

he-okije	heokije		(be) fast
he-oolaʃe	heoolaʃe		wait
he-orkʾe	heorkʾe		flow
he-oskiɗe	heoskiɗe		(be) hot (of person)
he-ottije	heottije		sit, land, alight
he-pakʾe	hepakʾe		wave (hand as a greeting) (v)
he-palle	hepalle		ripen, become ripe
he-patʃe	hepatʃe		(be) lost
he-peʔaʃe	hepeʔaʃe		sleep (v)
he-peʔe	hepeʔe		dive
he-poke	hepoke		bite (snake)
he-possije	hepossije		honour (v)
he-putʃtʃije	heputʃtʃije		bark (as dog) (v)
he-puwe	hepuwe		(be) hungry, hunger (v)
he-ɾabaʃe	herabaʃe		(be) engaged, (be) betrothed
he-ɾakkoʃe	herakkoʃe		suffer
heɾia	heɾia		barter, exchange (of goods)
heɾia-mpajtʃa	heɾiampajtʃa		trader
heɾɾo	heɾɾo		dog
he-ɾukʾe	heɾukʾe		wither (plant)
he-ɾususije	heɾususije		(be) soft
heʃa	heʃa		wife
he-ʃaake	heʃaake		notice (v); to comprehend
he-ʃeelame	heʃeelame		lean against (intr)
he-siibisame	hesiibisame		choke
he-sinɗawe	hesinɗawe		urinate
he-skaʃe	heskaʃe		lie down
he-ʃoome	heʃoome		slap (v)
heʃuhe	heʃuhe		spit
he-ʃuitʃusije	heʃuitʃusije		turn over (tr)

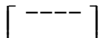
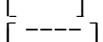
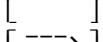
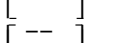
he-ʃumɓen	heʃumɓen		(be) shrivelled, (be) wrinkled (fruit)
he-taaɾoʃe	hetaaɾoʃe		(be) drunk
he-taɾbe	hetaɾbe		wander
he-taɾije	hetaɾije		touch, feel (active)
he-taʃe	hetaʃe		(be) tired
he-teeke	heteeke		(be) poor
he-tooɾije	hetooɾije		heap up
hetoɾe	hetoɾe		jump (v)
he-tʃ'abe	hetʃ'abe		(be) rotten
hetʃeʔe	hetʃeʔe		belch
he-tʃigaʃe	hetʃigaʃe		look at, watch
he-tʃiitʃe	hetʃiitʃe		despise, disdain
he-tʃooje	hetʃooje		see
he-tuule	hetuule		cross (river)
he-uɗame	heuɗame		(be) sick, (be) ill
he-ufaɗoʃe	heufaɗoʃe		perspire, sweat
he-uuke	heuuke		drink
he-waahaʃe	hewaahaʃe		taste
he-zooɾajtʃije	hezooɾajtʃije		turn over
heʔe	heʔe		you (masc., sing.)
hibo	hibo		dry season
hiɗeetʃa	hiɗeetʃa		bundle (n)
hiɗiɗetʃa	hiɗiɗetʃa		lip
hiijawe	hiijawe		orphan
hiilatetʃa	hiilatetʃa		carve
hik'k'ota	hik'k'ota		hiccough (n)
hima	hima		divine, prophesy (v)
hini	hini		(be) same
hiɾba	hiɾba		music
hiɾibo	hiɾibo		eyelash

hits'a	hits'a		fireplace
hitʃam-eetʃa	hitʃameetʃa		obey
hitʃtʃa-mpajtʃa	hitʃtʃampajtʃa		messenger
hittajjo	hittajjo		bedbug
hitte	hitte		root
hittina	hittina		descendant
hobahe	hoβahe		because
hobatʃa	hoβatʃa		footprint (human)
hobatʃ'a	hoβatʃ'a		armpit
hobo	hoβo		rubber
hobosi-so	hoβosiso		track (animal) (n)
hojɾekwisija	hojɾekwisija		fourth month
hok'al-eetʃa	hok'aleetʃa		limp
holalleo	holalleo		first month
holbok'a	holbok'a		valley
hollozo	hollozo		hyena
holma	holma		nape of neck
hololoki-so	hololokiso		loosen
holtsina	holtsina		laugh
hona	hona		(be) deep
honajɗi-so	honajɗiso		deepen
honɗa	honɗa		love (v)
honɗotʃa	honɗotʃa		(be) narrow
honna	honna		kitchen
hontʃanta	hontʃanta		noise, sound (n)
hooke	hooke		axe
hoola	hoola		feather
hoola-mole	hoolamole		fin
hoola-puto	hoolaputo		flame
hoone	hoone		seventh month

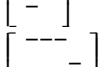
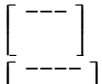
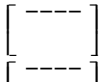
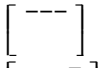
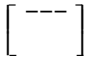
hoottusa-so	hoottusaso		praise (n)
horatʃa	horatʃa		penalty, punishment
horhajtʃa	horhajtʃa		swell
horobajjo	horobajjo		he-goat, billy goat
horok'e	horok'e		hippopotamus
horsanta	horsanta		dance (n)
horsina	horsina		tease
horsis-ootʃa	horsisootʃa		punish
horʔikia	horʔikia		hiss
hoʃe	hoʃe		bed
hoskii-so	hoskiiso		boil (water), bubble up
hotʃatʃa	hotʃatʃa		wall
huk'as-ootʃa	huk'asootʃa		apply (ointment), besmear
huke	huke		(be) stubborn
hullube	hullube		afternoon
hummaʔi-so	hummaʔiso		shorten
hundurta	hundurta		navel
hussa	hussa		country, ethnic area
huulo	huulo		guinea fowl
huunɗa	huunɗa		ten (10)
huunɗa-afuri	huunɗaafuri		forty (40)
huunɗa-heni	huunɗaheni		fifty (50)
huunɗa-lbata	huunɗalbata		thirty (30)
huunɗa-lehi	huunɗalehi		sixty (60)
huunɗa-nafuri	huunɗanafuri		fourteen (14)
huunɗa-nalbata	huunɗanalbata		thirteen (13)
huunɗa-ni-heni	huunɗaniheni		fifteen (15)
huunɗa-ni-lehi	huunɗanilehi		sixteen (16)
huunɗa-ni-saatɪti	huunɗanisaatɪti		eighteen (18)
huunɗa-ni-sakali	huunɗanisakali		nineteen (19)

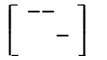
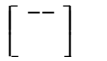
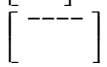
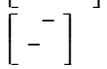
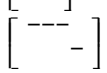
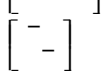
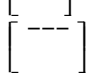
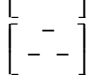
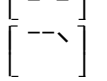
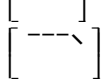
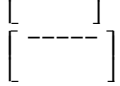
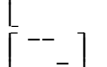
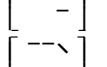
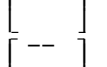
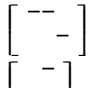
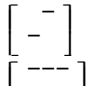
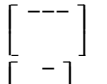
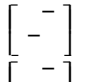
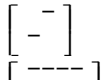
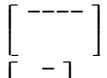
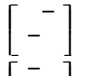
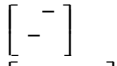
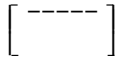
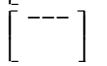
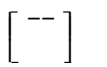
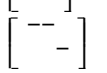
huunɗa-ni-seppa	huunɗaniseppa		seventeen (17)
huunɗa-ni-ʃokuha	huunɗaniʃokuha		eleven (11)
huunɗa-ni-tamo	huunɗanitamo		twelve (12)
huunɗa-satıti	huunɗasatıti		eighty (80)
huunɗa-seppa	huunɗaseppa		seventy (70)
huunɗa-tamo	huunɗatamo		twenty (20)
huunɗa-tamu-ni-ʃokuha	huunɗatamuniʃokuha		twenty-one (21)
huunɗa-tamu-ni-tamo	huunɗatamunitamo		twenty-two (22)
huunɗa-ts'ĭnkotʃa	huunɗats'ĭŋkotʃa		ninety (90)
jaara-npajtʃa	jaaranpajtʃa		mad person
jaj-jaro	jajjaro		bat
jara-npajtʃ-itʃa	jaranpajtʃitʃa		mad person (fem)
jarotʃa	jarotʃa		monitor lizard
jook'-eetʃa	jook'eetʃa		grind
jook'o	jook'o		grind
k'aaba	k'aaβa		think
k'aaba	k'aaβa		plan (n)
k'aaba-totʃa	k'aabatotʃa		spirit (of dead person) (invisible)
kaakeetʃa	kaakeetʃa		carry (child) on back
kaala	kaala		camel
kaalusis-ootʃa	kaalusisootʃa		lead, guide (v)
k'aamajtʃa	k'aamajtʃa		mould (n)
kaane	kaane		big, important, grow
kaanis-ootʃa	kaanisootʃa		bring up (a child)
kaanu-sa	kaanusa		grow up
k'aanu-sa	k'aanusa		(be) thin
kaarank'ajnanajka	kaarank'ajnanajka		maned rat
k'aare	k'aare		pepper (green)
kaasa	kaasa		horn
k'aas-eetʃa	k'aaseetʃa		trap (animal) (v)

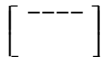
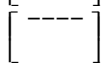
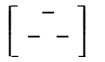
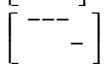
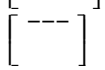
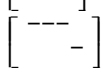
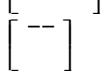
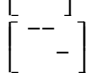
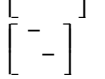
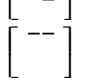
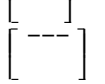
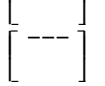
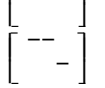
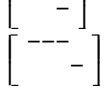
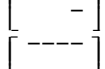
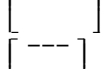
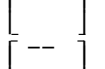
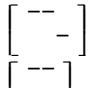
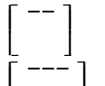
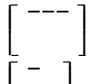
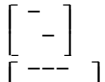
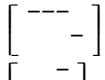
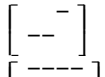
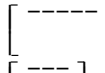
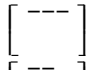
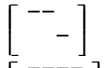
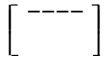
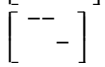
k'aasotʃa	k'aasotʃa		set (trap)
kaassate	kaassate		ask, request
kaato	kaato		shelter (n)
k'aawa	k'aawa		doorframe
kaaʔaltʃa	kaaʔaltʃa		jackal
kaaʔ-eetʃa	kaaʔeetʃa		(be) torn
kaaʔ-eetʃa	kaaʔeetʃa		tear (tr)
kaba	kaβa		mouth
kaba-ɗame	kaβaɗame		stutter
k'abajtʃi-so	k'abajtʃi-so		spread (disease, fire)
k'ab-eetʃa	k'abeetʃa		catch (object in air)
k'ahi-so	k'ahiso		(be) open
k'aj-eetʃa	k'ajeetʃa		pour
kajj-eetʃa	kajjeetʃa		enough
kajjina	kajjina		enough
k'ajjo	k'ajjo		smoke
k'ajjotʃa	k'ajjotʃa		cough (n)
kajliʃa	kajliʃa		flock (of birds)
kajliʃa	kajliʃa		uncommon bird, seen only some years, eats crops
k'ajɾantʃa	k'ajɾantʃa		leopard
kajɾo	kajɾo		boast, brag
k'ajsamotʃa	k'ajsamotʃa		swell
kakka-ʔeetʃa	kakkaʔeetʃa		cackle (as of chicken)
k'ak'-k'aj-eetʃa	k'ak'k'ajeetʃa		leak (v)
kakoɾtʃa	kakoɾtʃa		beehive
k'alabaate	k'alabaate		necklace
k'alak'allane	k'alak'allane		some (men)
k'alame	k'alame		paint (n)
kal-eetʃa	kaleetʃa		enter, go in
k'al-eetʃa	k'aleetʃa		slaughter, kill (animal for butchering)

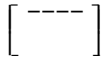
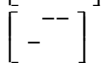
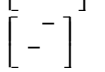
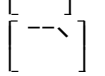
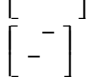
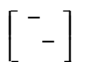
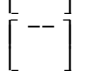
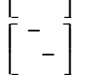
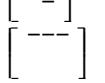
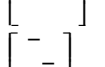
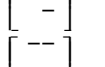
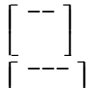
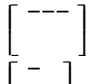
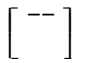
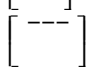
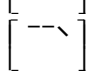
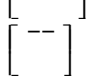
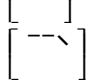
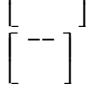
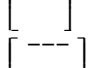
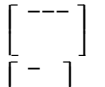
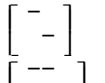
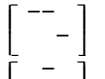
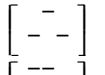
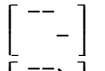
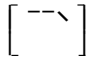
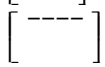
kaletʃa	kaletʃa		reed
kalis-ootʃa	kalisootʃa		pack (v)
kallabaj	kallabaj		noon
kallabanne	kallabanne		daytime
kalmajtʃ-iso	kalmajtʃiso		keep, save
kalmatʃa	kalmatʃa		dwell, inhabit
kalmatʃa-mpajtʃa	kalmatʃampajtʃa		inhabitant, resident
kalʃuma	kalʃuma		west
kamam-eetʃa	kamameetʃa		(be) defeated
kamana	kamana		cow (female)
kamantʃa	kamantʃa		north
kamantʃa	kamantʃa		heel
k'amɓo	k'amɓo		coffee
k'amɓotukajja	k'amɓotukajja		sunbird
kam-eetʃa	kameetʃa		conquer, defeat
kanatʃa	kanatʃa		palm (of hand)
k'anetʃa	k'anetʃa		day
k'anhatʃa	k'anhatʃa		blessing
k'anhatʃadɗii-so	k'anhatʃadɗiiso		lack
kankulu	kankulu		hoe (n)
kanta	kanta		cattle pen
k'appanajtʃi-so	k'appanajtʃiso		(be) cold (objects)
kappuntʃa	kappuntʃa		(be) fat, (be) thick
kaɾa	kaɾa		piece
k'aɾa	k'aɾa		again
k'aɾaane	k'aɾaane		go round, detour
kaɾakkaɾam-eetʃa	kaɾakkaɾameetʃa		haggle, negotiate a price
k'aɾappa-eetʃa	k'aɾappaeetʃa		approach (v)
kaɾauɾaui-so	kaɾauɾauiso		singe
kaɾma	kaɾma		(be) courageous, (be) brave

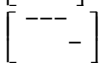
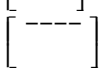
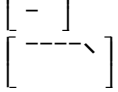
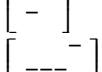
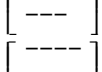
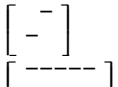
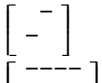
kaɾɾajtʃa	kaɾɾajtʃa		inheritance
k’aɾta	k’aɾta		goiter
kaɾʔa	kaɾʔa		abdomen (external)
kaɾʔiʃa	kaɾʔiʃa		large intestines
kasaɾtʃa	kasaɾtʃa		wildebeest, buffalo
kaʃ-eetʃa	kaʃeetʃa		throw away, get rid of
k’ase-lajtʃa	k’aselajtʃa		beggar
k’asi-je	k’asije		pray. lit. beg
kaska	kaska		shoulder
kassata	kassata		request (n)
k’assi-so	k’assiso		spark
k’atitta	k’atitta		neighbour
katʃantʃa	katʃantʃa		pig
katʃantʃ-appa	katʃantʃappa		boar (male pig)
katʃantʃ-inkotʃa	katʃantʃiŋkotʃa		sow (female pig)
k’awa	k’awa		hollow out (log)
k’awwa	k’awwa		thunder
kawwusa	kawwusa		chin
k’aʔiʃa	k’aʔiʃa		market (n)
k’aʔiʃa	k’aʔiʃa		town, city
k’ebi-so	k’ebiso		wound (animal)
k’eɗɗ-eetʃa	k’eɗɗeetʃa		take
k’eeɗɗo	k’eeɗɗo		marriage (state of wedlock)
keenko	keenko		heron, egret
keeto	keeto		right, (be) correct
k’eetoone	k’eetoone		really, truly
k’efo	k’efo		malaria (fever)
ke-ke-ʔeetʃa	kekeʔeetʃa		rustle (leaves) (v)
kelli-so	kelliso		bend, crook, curve (n)
kelloʃa	kelloʃa		robe (man's gown)

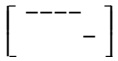
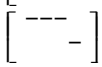
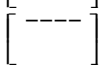
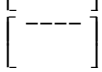
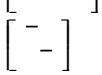
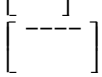
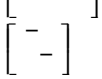
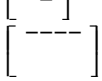
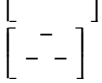
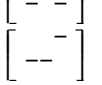
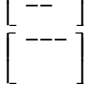
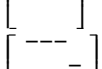
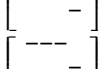
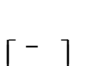
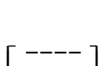
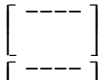
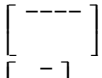
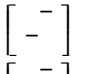
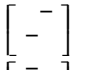
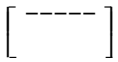
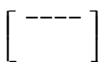
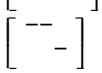
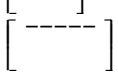
keltajtʃa	keltajtʃa		baboon
k’eppi-so	k’eppiso		break
kerʔ-ajtʃa	kerʔajtʃa		old person
kerʔu-sa	kerʔusa		(be) old (not young)
kes-eetʃa	keseetʃa		take out (from container) (fem)
k’etʃine	k’etʃine		giraffe
k’etʃitʃa	k’etʃitʃa		courtyard
kiiamotʃotʃa	kiiamotʃotʃa		pigeon
kiiɾa	kiiɾa		tax (n)
kiiʃa	kiiʃa		scorpion
kiiʃa	kiiʃa		shell (of turtle)
kilba	kilba		knee
k’ililajtʃa	k’ililajtʃa		monkey
k’ilts’ime	k’ilts’ime		bone marrow
k’im-eetʃa	k’imeetʃa		(be) tight
k’imi-so	k’imiso		tighten (tr)
k’imi-so	k’imiso		condole, comfort (v)
k’imussa	k’imussa		(be) hard
kinɗilatʃa	kinɗilatʃa		pinky finger/toe
k’intʃafeele	k’intʃafeele		hoof
k’intʃ’o	k’intʃ’o		thread (n) (fem)
k’iɾts’etʃa	k’iɾts’etʃa		earring
k’iʃa-so	k’iʃaso		subtract, take away
kitʃtʃina	kitʃtʃina		thirteenth month
kobile	koβile		shield (n)
kobolita	koβolita		thumb
koboɾo	koβoɾo		ear
koboɾo-ts’ink’a	koboɾots’ink’a		blade (of grass)
k’oɗe	k’oɗe		pap, mushy food
k’oʔe	k’oʔe		mask (n)

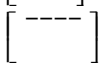
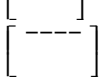
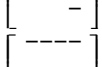
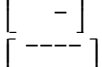
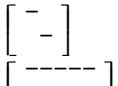
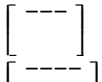
kohajtʃa	kohajtʃa		stumbling block, obstruction
koho	koho		ram
k'oj-ɓuk'ule	k'ojɓuk'ule		eggshell
k'ojɾa	k'ojɾa		wood
kojɾa-fuuta	kojɾafuuta		silk-cotton tree, kapok tree
koka	koka		beeswax, bee-bread
koketʃa	koketʃa		(be) empty
koketʃa	koketʃa		drought, famine
koki-so	kokiso		dry out (clothes)
ko-koiso	kokoiso		fan (v)
kolisampajja	kolisampajja		teach
kol-koltʃa	kolkoltʃa		(be) young
kollana	kollana		learn
kolli-so	kolliso		announce
kombotʃo	kombotʃo		maize, corn
konte	konte		hoe (n)
k'oobetʃa	k'ooβetʃa		hat
koojɾo	koojɾo		firstborn
k'oola	k'oola		hide (of animal)
k'oola-mole	k'oolamole		fish-scale
kooma	kooma		corn cob
koonka	kooŋka		canoe
k'oontʃo	k'oontʃo		smallest mushroom, red
koopatiʃ-eetʃa	koopatiʃeetʃa		drag
k'ooso	k'ooso		sun
k'oosso-hik'k'ini	k'oossohik'k'ini		spend time, pass time
k'oot-eetʃa	k'ooteetʃa		divide, separate (tr)
kootʃa-kootʃahe	kootʃakootʃahe		(be) slow
kootʃo	kootʃo		anteater, aardvark, antbear
k'oɾajja	k'oɾajja		firewood

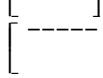
koɾofono	koɾofono		lung
k'oɾomale	k'oɾomale		spitting cobra
k'oɾosuuniɗeʔe	k'oɾosuuniɗeʔe		fetch (firewood)
koɾɾane	koɾɾane		all
koɾɾiotʃa	koɾɾiotʃa		quail
koɾɾofe	koɾɾofe		eleventh month
k'osaɾetʃa	k'osaɾetʃa		porcupine
k'oʃʃa	k'oʃʃa		weeds
k'ossooli	k'ossooli		always
kote	kote		wave
k'otʃa	k'otʃa		neck
k'oʔi-so	k'oʔiso		scrape (v)
k'oʔiʃʃa	k'oʔiʃʃa		ulcer (leg)
k'ubajta	k'ubajta		fingernail
kubaletʃa	kubaletʃa		hare
kubaletʃa	kubaletʃa		butterfly
kubi-so	kubiso		(be) hot (objects)
k'uɗɗetʃa	k'uɗɗetʃa		thorn
kula	kula		bulb, tuber
kulkama	kulkama		vulture
kultʃa	kultʃa		mole
kumantʃitʃa	kumantʃitʃa		reedbuck
k'umbajdo	k'umbajdo		smallest knife
kumul-eetʃa	kumuleetʃa		grumble, complain
k'un-k'uma-kaɾʔa	k'uŋk'umakaɾʔa		stomachache, upset stomach
k'un-k'umu	k'uŋk'umu		pain (n)
kuppetʃa	kuppetʃa		sorrow (n)
kuɾbanotʃa	kuɾbanotʃa		rainbow
k'uɾ-eetʃa	k'uɾeetʃa		bake
kuɾʃa	kuɾʃa		log

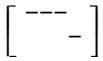
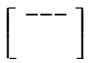
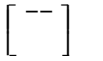
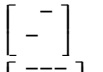
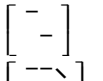
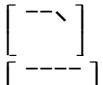
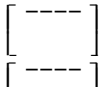
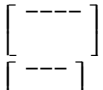
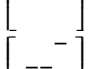
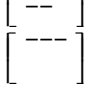
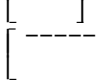
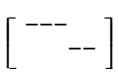
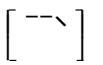
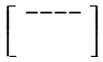
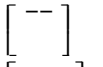
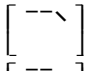
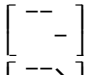
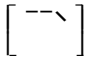
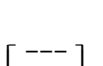
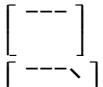
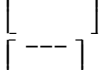
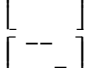
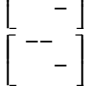
kuttaletʃa	kuttaletʃa		puppy
kuunatʃa	kuunatʃa		mosquito
kuuta	kuuta		cemetery for infants
kuutʃa-so	kuutʃaso		smoke (fish)
laaba	laaba		hoe (v)
laafota	laafota		breath
laale	laale		herd (of cattle)
laane	laane		under, below
laanne	laanne		bottom
lahheate	lahheate		(be) inexpensive (regarding an object)
lajtta	lajtta		master
laka	laka		ground, land
lakuna	lakuna		flatten
laʃʃa	laʃʃa		day
laʃʃamitahhe	laʃʃamitahhe		daily
leelisis-ootʃa	leelisisootʃa		appease, pacify
leeʔoh	leeʔoh		moon
lehhaʃe	lehhaʃe		descend, go down
lehhi-so	lehhiso		bale out (canoe, boat) lower
lehi	lehi		six (6)
leki-so	lekiso		increase (intr)
lela	lela		tell, recount (story)
lel-eetʃa	leleetʃa		poorly
lemme	lemme		father
leolajtʃa	leolajtʃa		rich man
liilita	liilita		shin
liisotʃa	liisotʃa		whip (n)
likʾkʾi-so	likʾkʾiso		quench, extinguish
limam-eetʃa	limameetʃa		sink (v)
lohi-so	lohiso		untie

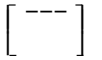
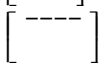
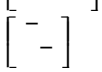
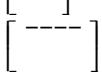
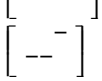
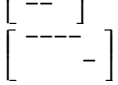
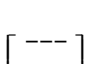
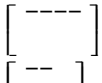
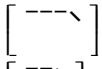
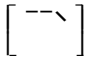
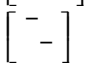
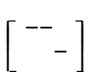
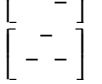
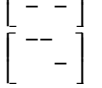
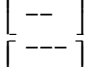
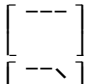
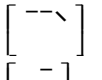
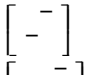
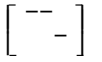
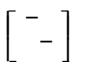
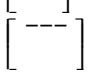
loolatʃa	loolatʃa		horn (musical instrument)
loometʃa	loometʃa		lemon
luhhal-appa	luhhalappa		rooster (cock)
luhhale	luhhale		chicken
luhhaletʃ-inkotʃa	luhhaletʃiŋkotʃa		hen
luʃa	luʃa		leg
luʃ-eetʃa	luʃeetʃa		look after
luʃʃa-niaʃe	luʃʃaniaʃe		stamp (with foot)
maad-eetʃa	maadeetʃa		help
maaka	maaka		snake
maaka	maaka		leader
maatinɗa	maatinɗa		compound, around the house
maatʃitʃa	maatʃitʃa		upper grinding stone
maɗ-eetʃa	maɗeetʃa		stab, pierce
mahena	mahena		barren woman
mahha	mahha		name
mahhapatʃi-so	mahhapatʃiso		slander (v)
majɗe	majɗe		strap (n)
maje	maje		liver
majɾe	majɾe		toe
majto	majto		ox (general term), bovine
majtusank'a	majtusaŋk'a		castrate
mak'at-eetʃa	mak'at-eetʃa		slice
malla	malla		pus
malts'a-ts'inetʃa	malts'ats'inetʃa		sweet potato
mamotʃa	mamotʃa		father's sister (aunt)
mana-ɗîhe	manaɗîhe		build
mana-peʔotʃa	manapeʔotʃa		bedroom
man--aɾɾabaʃa	manaɾɾabaʃa		spider's web
mana-sinɗa	manasinɗa		latrine, toilet

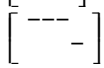
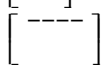
mana-tʃik'aso	manatʃigaso		bathing place
mana-ts'ɨnk'a	manats'ɨŋk'a		hut
man-hampiro	manhampiro		nest
manimooro	manimooro		poisonous mushroom
manko	maŋko		strength
mankolajtʃa	maŋkolajtʃa		(be) fierce
mano	mano		potter
maraetʃa	maraetʃa		allow, permit
mar-eetʃa	mareetʃa		coil (rope) (v)
margaba	margaba		fan (n)
masalk'o	masalk'o		snail
maʃantʃitʃa	maʃantʃitʃa		fellow-wife, co-wife
mas-masoontʃa	masmasoontʃa		rejoice
mas-massajtʃinikia	masmassajtʃinikia		(be) happy, (be) joyful
mas-massajtʃis-ootʃa	masmassajtʃisootʃa		please, satisfy
maʃʃa	maʃʃa		alcohol (general)
maʃʃa	maʃʃa		hair (of head)
maʃʃa-pawo	maʃʃapawo		(be) dizzy
matʃ'atʃ'ak'a	matʃ'atʃ'ak'a		rag
ma?ar-eetʃa	ma?areetʃa		plaster (n)
meeha	meeha		belongings
meek'a	meek'a		how many?
meela	meela		body
meetʃa	meetʃa		child
meetʃa-katʃantʃa	meetʃakatʃantʃa		piglet
meetʃa-paraso	meetʃaparaso		colt
meetʃa-toretʃa	meetʃatoretʃa		kitten
meetʃatʃolo	meetʃatʃolo		pestle, pounding stick
mek'ete	mek'ete		bone
mek'ete-mole	mek'etemole		fish bone

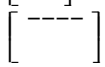
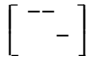
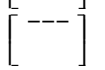
merɾebe	merɾeβe		fish trap
miili-so	miiliso		winnow (n)
miil-usaʔa	miilusaʔa		(be) clean
miintʃa	miintʃa		south
miiɾa	miiɾa		(be) angry
mililah	mililah		(be) straight
milili-so	mililiso		straighten
milltʃotʃa	milltʃotʃa		(be) innocent
minalbata	minalbata		perhaps
minntʃa-minanne	minntʃaminanne		point (n)
miskotʃaraʔa	miskotʃaraʔa		right (direction)
mitatetʃa	mitatetʃa		return, go back
mitati-so	mitatiso		return (tr), give back
mitʃuta	mitʃuta		(be) sad
miʔaw-eetʃa	miʔaweetʃa		(be) sweet
mole	mole		fish
mole-k'aas-eetʃa	molek'aaseetʃa		fish (v)
molotʃa	molotʃa		(be) bald
moodɨahe	moodɨahe		why?
moodɨo	moodɨo		what?
moodɨo-todɗo	moodɨotodɗo		nothing
mooha	mooha		God (supreme being)
mook'e	mook'e		spoon (traditional)
mook-eetʃa	mookeetʃa		bury
mooʃa	mooʃa		friend
mooze	mooze		banana
moɾa	moɾa		forest
moɾaso	moɾaso		payment
moɾ-eetʃa	moɾeetʃa		sharpen, bring to point (arrow) (to cut)
moɾ-eetʃa	moɾeetʃa		cut (tr)

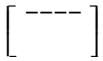
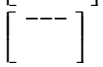
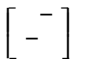
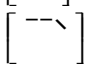
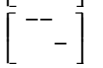
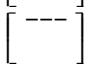
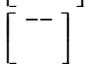
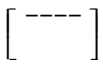
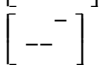
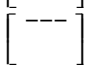
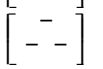
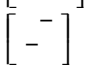
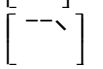
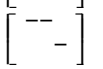
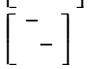
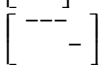
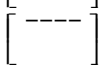
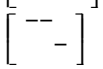
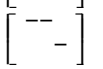
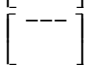
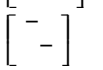
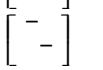
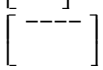
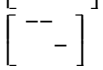
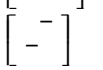
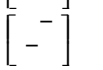
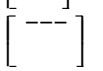
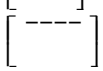
moɾralo	moɾralo		twelfth month
moto	moto		beer (traditional)
mulmule	mulmule		(be) smooth
muum-eetʃa	muumeetʃa		(be) round
muumen-ne	muumenne		all
muzuɾu	muzuɾu		heart
muzuɾu-ʔonahe	muzuɾuʔonahe		palpitate (of heart)
mʔawa	mʔawa		taste (n)
nah-eetʃa	naheetʃa		(be) shy (for fear of shame)
najk'i-so	najk'iso		destroy, spoil
najk'ajtʃa	najk'ajtʃa		(be) bad, difficult
nama	nama		human being, person
namajɗika	namajɗika		(be) healthy, (be) well
namajkaɗɗika	namajkaɗɗika		(be) kind
namaj-ʃitta	namajʃitta		adult
nama-k'imajtʃa	namak'imajtʃa		adult
namanajk'a	namanajk'a		(be) corrupt
namannoto	namannoto		nobody
namatʃamumɪne	namatʃamumɪne		everybody
nanho	nanho		shame (n)
nanho-lajtʃa	nanholajtʃa		coward
nannahe	nannahe		never
naɾfetʃa	naɾfetʃa		needle
nats'ala	nats'ala		cloth worn by a woman
nausi-so	nausiso		frighten
nunhinta	nunhinta		brain
paa-eetʃa	paaeetʃa		put, place, set
paahotʃa	paahotʃa		skull
paala	paala		comb (of rooster)
paana	paana		path, road

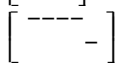
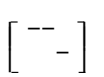
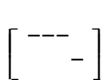
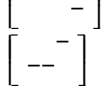
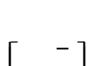
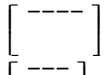
paana-mpajtʃa	paanampajtʃa		traveler
paana-puʔetʃa	paanapuʔetʃa		crossroads, intersection
paanatio	paanatio		crevice
paarre	paarre		tomorrow night
paasa-mpajtʃa	paasampajtʃa		(be) eloquent
paata	paata		village
paatʃatʃa	paatʃatʃa		beard
paatʃe	paatʃe		sickle
pahi-so	pahiso		choose (tr), pick (tr)
pajintʃohe	pajintʃohe		away from
pajjantara	pajjantara		beginning
pajj-eetʃa	pajjeetʃa		begin
pak'ajo	pak'ajo		cooking stone
pak'ina	pak'ina		river
pak'inaj-kwije	pak'inajkwije		riverbed (dry)
pak'inaj-ʔurk'in-kio	pak'inajʔurk'iŋkio		current (river, stream)
pak'ina-kaba	pak'inakaba		river bank
pak'ina-mina	pak'inamina		beach
pak'k'i-so	pak'k'iso		chop into pieces
pak'k'is-ootʃa	pak'k'isootʃa		cut open (fruit)
pale	pale		threshing-floor
palla-so	pallaso		cook (v)
palla-so	pallaso		harvest (maize) (v)
palʔ-aso	palʔaso		widen
palʔata	palʔata		compound, front of the house
palʔu-sa	palʔusa		(be) wide
panhajtʃi-so	panhajtʃiso		imitate
panhatʃa	panhatʃa		resemble
panhatʃa	panhatʃa		proverb
pan-pano	panpano		second month

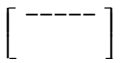
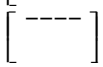
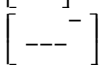
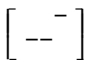
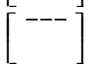
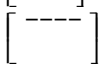
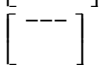
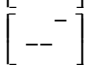
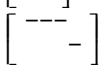
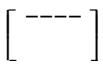
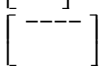
pappajja	pappajja		pawpaw, papaya
pap-pak’etʃa	pappak’etʃa		burst
paɾa	paɾa		year
paɾaankaʃa	paɾaankaʃa		fifth month
paɾaso	paɾaso		horse
paɾaso-appa	paɾasoappa		stallion
paɾaso-inkotʃa	paɾasoinkotʃa		mare (female horse)
paɾ-paɾe	paɾpaɾe		red pepper, hot pepper
paɾ-paɾotʃe	paɾpaɾotʃe		dawn (before sunrise)
paɾʃane	paɾʃane		day after tomorrow
paʃatʃa	paʃatʃa		thigh
passisa-so	passisaso		evade
passi-so	passiso		escape
pata	pata		back
pataaʃa	pataaʃa		back (of something)
pataʔan-eetʃa	pataʔaneetʃa		follow
patʃajja	patʃajja		third day from today
patʃ-eetʃa	patʃeetʃa		disappear
patʃtʃetʃa	patʃtʃetʃa		bruise (n)
pawawa	pawawa		throb (with pain)
peejeetʃa	peejeetʃa		fall (intr)
peesa-so	peesaso		wound (animal)
peesatʃa	peesatʃa		wound, sore
pehana	pehana		sow, plant
pelleso	pelleso		antelope
peotʃa-npajtʃa	peotʃanpajtʃa		(be) sleepy
peʔa	peʔa		kid
pidɗeetʃa	pidɗeetʃa		buy
piilawa	piilawa		knife
piita	piita		dirt, soil

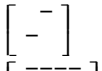
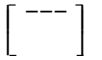
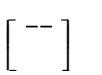
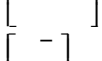
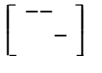
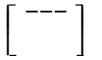
pilehe	pilehe		(be) different
pinano	pinano		animal
piotʃaraʔa	piotʃaraʔa		left (direction)
pirretʃa	pirretʃa		silver
piʃe	piʃe		water
piʃe-ʔorin-kia	piʃeʔoriŋkia		brook, stream
piʃma	piʃma		curse (v)
pissa	pissa		be beautiful
pissa-so	pissaso		decorate
poham-eetʃa	pohameetʃa		assemble, meet together
poh-eetʃa	poheetʃa		pick up
pokeetʃa	pokeetʃa		peck (tr)
polloho	polloho		woodpecker (with red in the back of the head)
ponka	ponka		plunder (a town)
pooa	pooa		tomorrow
poohajjo	poohajjo		fig tree
pooitʃa	pooitʃa		funeral (at occasion of death)
poonetʃa	poonetʃa		darkness
poonu-sa	poonusa		be black
poosa	poosa		grave
poosa-talma	poosatalma		place where unmarried person is buried
poos-eetʃa	pooseetʃa		respect (v)
pooso	pooso		splendour, glory
pootumsa	pootumsa		be white
po-poko	popoko		insect
porа	porа		place
porа	porа		well (n)
porаporahhe	porаporahhe		everywhere
puhampuhaatʃa	puhampuhaatʃa		chameleon
puk'atʃa	puk'atʃa		thread (n)

pukka	pukka		corpse
pul-pulleetʃa	pulpulleetʃa		scatter (tr)
punita	punita		coffee
puʃ-eetʃa	puʃeetʃa		harvest, dig up (potatoes)
puto	puto		fire
puuliʃa	puuliʃa		friend (through vocation)
puuɾe	puuɾe		rubbish
puuts'a	puuts'a		curse (n)
ɾabootʃa	ɾabootʃa		fiance (betrothed girlfriend)
ɾahe	ɾahe		red pepper, hot pepper
ɾahha-ɾahhatʃa	ɾahhaɾahhatʃa		frog
ɾakko-so	ɾakkoso		lack (v)
ɾakkotʃa	ɾakkotʃa		hardship, distress
ɾentʃehiɗe	ɾentʃehiɗe		calm (oneself)
ɾibo	ɾibo		tendon
ɾifantʃa	ɾifantʃa		fur
ɾifantʃa-k'ola	ɾifantʃak'ola		hair (of body)
ɾooba	ɾooba		rain
ɾoom-usa	ɾoomusa		be red
ɾotʃ-eetʃa	ɾotʃeetʃa		throw
ɾukkeetʃa	ɾukkeetʃa		(be) silent
ɾususi-so	ɾususiso		dip
ʃaak'ota	ʃaak'ota		jaw
safaɾa	safaɾa		spot (n)
sajɗo	sajɗo		song
ʃaj-ʃajtʃa	ʃajʃajtʃa		hawk (outer part of wingspan not white)
sakali	sakali		nine (9)
sakkalo	sakkalo		sixth month
sak'k'etʃa	sak'k'etʃa		louse
salenatʃa	salenatʃa		palm tree

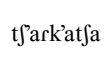
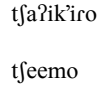
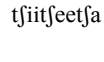
salennatʃa	salennatʃa		mat
salkata	salkata		colobus monkey
ʃammak'ota	ʃammak'ota		yawn
sanga	sanga		steer
saɾi-so	saɾiso		thatch
saɾkita	saɾkita		tribe, ethnic group
saɾkuma	saɾkuma		relative (by blood)
saɾmeh	saɾmeh		yellow bird
ʃaɾmot'a	ʃaɾmot'a		adultery
ʃaɾmot-eetʃa	ʃaɾmoteetʃa		copulate, have sexual intercourse
ʃa-ʃak'o	ʃaʃak'o		gravel
sateti	sateti		eight (8)
ʃauwatʃa	ʃauwatʃa		waterfall
ʃeeɓo	ʃeeɓo		crocodile
seeji-so	seejiso		stir
seepata	seepata		after
seeti	seeti		that (man)
seetʃuranne	seetʃuranne		in front of, before
seetʃuranne	seetʃuranne		before
ʃeh-eetʃa	ʃeheetʃa		sprinkle
seka-so	sekaso		avoid
seku-sa	sekusa		far
senna	senna		feast
seppa	seppa		seven (7)
sesseh-eetʃa	sesseheetʃa		move (intr)
ʃibotʃa	ʃibotʃa		trap (n)
siiba	siiba		crowd
ʃiiɓo	ʃiiɓo		tenth month
ʃiinkotʃa	ʃiiŋkotʃa		swing (v), go back and forth
ʃiiɾk'ajtʃi-so	ʃiiɾk'ajtʃiso		(be) slippery

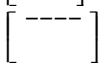
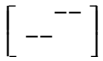
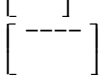
siiʔi-so	siiʔiso		whistle (v)
ʃije	ʃije		thousand (1000)
sik'-eetʃa	sik'eetʃa		winnow, throw in air (grain) (v)
ʃikisa-mpajtʃa	ʃikisampajtʃa		shepherd
ʃiki-so	ʃikiso		feed (animals)
silha	silha		iron
sinɗa	sinɗa		urine
sino	sino		nose
sintaneta	sintaneta		blow nose
ʃiʀk'otʃa	ʃiʀk'otʃa		slither (snake)
sitotʃa	sitotʃa		broom
siʔili	siʔili		skeleton
sojja-mpajtʃa	sojjampajtʃa		sorcerer (male)
ʃokkuha	ʃokkuha		one (1)
ʃokkuha	ʃokkuha		(be) first
ʃokkuha-aha	ʃokkuhaaha		only one
ʃokontiha	ʃokontiha		once
ʃokonti-ʃokonti	ʃokontiʃokonti		sometimes
ʃomboko	ʃomboko		bamboo
ʃonk'a	ʃoŋk'a		guitar
ʃonkora	ʃoŋkora		sugar cane
ʃoo-bajtʃa	ʃoobajtʃa		hunchback
ʃoo-bajtʃ-itʃa	ʃoobajtʃitʃa		hunchback
ʃoobuma	ʃoobuma		(be) crooked
ʃoohaliotʃa	ʃoohaliotʃa		waterfall
sooha-so	soohaso		come (or go) out, exit (v)
sooh-eetʃa	sooheetʃa		crawl (lizard)
sookitta	sookitta		salt
soolomoto	soolomoto		civet cat
sooma	sooma		witchcraft

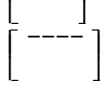
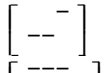
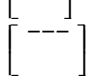
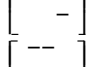
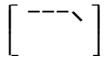
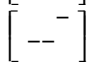
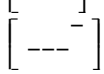
ʃooraʔat-eetʃa	ʃooraʔateetʃa		overtake, pass (tr)
soorom-eetʃa	sooromeetʃa		arrange, straighten, mend, repair
sore	sore		advise
ʃorokuma	ʃorokuma		reputation
soʔo	soʔo		meat
soʔo-heekotʃa	soʔoheekotʃa		lamb
sukun-kunu	sukuŋkunu		spine, backbone
sultube	sultube		rainy season
sulule	sulule		flute
ʃuma-mpajtʃa	ʃumampajtʃa		blacksmith
ʃumetʃa	ʃumetʃa		mushroom
ʃunkulte	ʃuŋkulte		onion
sura	sura		rope
ʃurabetʃa	ʃurabetʃa		shirt
surra	surra		hip, lower back
sutub-eetʃa	sutubeetʃa		count (v)
suubo	suubo		soup, broth
ʃuuketʃa	ʃuuketʃa		brideprice (for bride's family)
taaɗa	taaɗa		dew
taampotʃa	taampotʃa		tobacco
taaro-so	taaroso		prevent
taati-so	taatiso		strain (food) (v)
taatʃe	taatʃe		basket-small
taburatʃa	taburatʃa		bracelet
tah-eetʃa	taheetʃa		mix (v)
takalaaʃotʃa	takalaaʃotʃa		army ant, soldier ant
tak-eetʃa	takeetʃa		admire
takinkio	takinkio		startle, surprise
takʼkʼar-kʼar-otʃa	takʼkʼarkʼarotʃa		agama lizard (red-headed)
talkʼajtʃitʃa	talkʼajtʃitʃa		lizard

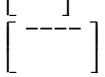
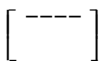
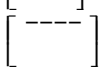
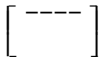
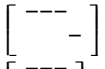
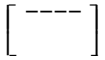
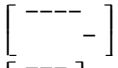
tallane	tallane		inside
tallaʃa-bugulle	tallaʃabugulle		egg white
talʔe	talʔe		debt
talʔ-eetʃa	talʔ-eetʃa		lend
talʔia-so	talʔia-so		borrow
tamijo	tamijo		(be) second
tammpatʃa	tammpatʃa		ocean, sea
tamo	tamo		two (2)
tanka	taŋka		honey
tank'aatʃak'etʃa	taŋk'aatʃak'etʃa		harvest, collect (honey from hive)
tankala	taŋkala		ladder
tankarsa	tankarsa		elephant
tarb-eetʃa	tarbeetʃa		leave (place)
tarra	tarra		mountain
tarra-ɗɗare	tarraɗɗare		summit, highest point
taʃʃ-eetʃa	taʃʃeetʃa		(be) weak
tatʃ'aloso	tatʃ'aloso		rust (n)
teekajtʃa	teekajtʃa		poor man
teekatʃa	teekatʃa		chair
tenkeret-eetʃa	tenkereteetʃa		roll
tiimpa	tiimpa		big(gest) drum
tiiʃaletʃa	tiiʃaletʃa		ant
tilma	tilma		ditch
timatime	timatime		tomato
timmetʃa	timmetʃa		sky
timpa-ɗawejtʃa	timpaɗawejtʃa		hornbill
tinitʃatʃa	tinitʃatʃa		potato
tiʃ-eetʃa	tiʃeetʃa		pull
tiʃʃa	tiʃʃa		seed
ti-tiki-so	titikiso		vomit (v)

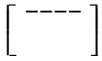
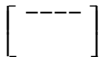
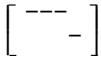
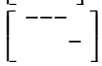
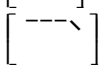
tiʔo	tiʔo		flood (n)
tojjahe	tojjahe		death
tokkoretʃa	tokkoretʃa		push
tomposa	tomposa		breastbone
toompeetʃa	toompeetʃa		surround
tooratʃa	tooratʃa		heap (n)
toor-eetʃa	tooreetʃa		accumulate, store up
tora	tora		lance (spear) (n)
toratorabeetʃa	toratorabeetʃa		throwing stick (n), throwing knife
torotʃa	torotʃa		war
torrotʃa	torrotʃa		story (tale)-history
torʃuna	torʃuna		east
totʃ'a	totʃ'a		die
tʃ'aakosi-so	tʃ'aakosiso		intercede, mediate
tʃ'aanalehi-so	tʃ'aanalehiso		unload
tʃaanawa	tʃaanawa		game
tʃaanawetʃa	tʃaanawetʃa		play (child) (intr)
ts'aarotʃa	ts'aarotʃa		cooking pot (earthenware)
tʃ'aatʃ'a	tʃ'aatʃ'a		quarrel
tʃaatʃɪtʃa	tʃaatʃɪtʃa		ankle
tʃabajjo	tʃabajjo		mouse
tʃ'ab-eetʃa	tʃ'abeetʃa		spoil (food) (intr)
tʃ'abi-so	tʃ'abiso		(be) wet
ts'agara	ts'agara		silver
tʃahia	tʃahia		twin
tʃahule	tʃahule		calf of leg
tʃalalle	tʃalalle		flock (of sheep, goats)
tʃale	tʃale		tether (sheep, goats) (v)
tʃaltʃetʃa	tʃaltʃetʃa		goat
tʃ'amari-so	tʃ'amariso		steal

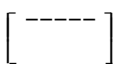
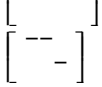
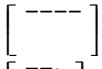
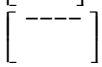
tʃ'amaɾo	tʃ'amaɾo		thief
tʃaɾatʃ'tʃ'a	tʃaɾatʃ'tʃ'a		ashes
tʃ'aɾk'atʃa	tʃ'aɾk'atʃa		cloth
tʃaɾkoʃa	tʃaɾkoʃa		(be) rough
tʃaɾɾo	tʃaɾɾo		bulbul, sparrow
tʃ'ato	tʃ'ato		(facial) incision(s), tattoo(s)
tʃatʃ-tʃaʔ-eetʃa	tʃatʃtʃaʔeetʃa		hesitate
tʃaʔa-ppajtʃa	tʃaʔappajtʃa		(be) patient
tʃaʔik'iɾo	tʃaʔik'iɾo		(be) green
tʃeemo	tʃeemo		eyebrow
ts'eeta	ts'eeta		hundred (100)
ts'eeta-heni	ts'eetaheni		five hundred (500)
ts'eeta-tamu	ts'eetatamu		two hundred (200)
tʃekela	tʃekela		cliff
tʃ'ide	tʃ'ide		chaff
tʃ'iibeetʃa	tʃ'iibeetʃa		squeeze
tʃ'iib-eetʃa	tʃ'iibeetʃa		wring out
tʃiitʃa	tʃiitʃa		hate (v)
tʃiitʃeetʃa	tʃiitʃeetʃa		compromise
tʃ'ik'as-ootʃa	tʃ'ik'asootʃa		bathe, wash oneself
tʃ'ik'-eetʃa	tʃ'ik'eetʃa		wash (clothes, utensils)
tʃ'ik'k'iɾ-eetʃa	tʃ'ik'k'iɾeetʃa		knead
tsillo	tsillo		(be) perfect
tʃ'ilooʃa	tʃ'ilooʃa		brideprice
ts'ink'a	ts'iŋk'a		grass
tʃinnaʔi-so	tʃinnaʔiso		decrease (intr)
tʃ'jaak'o	tʃ'jaak'o		oath
tʃ'jaana	tʃ'jaana		load (v)
tʃ'jook'o	tʃ'jook'o		mud
tʃokkanita	tʃokkanita		pointer finger

tʃol-eetʃa	tʃoleetʃa		pound
tʃ'olintintʃa	tʃ'olintintʃa		(be) blind
tʃolo	tʃolo		mortar, pounding pot
tʃ'olta	tʃ'olta		blind person
tʃ'olta	tʃ'olta		(be) blind
tʃolʔotʃa	tʃolʔotʃa		hump (of cow)
tʃolʔotʃa	tʃolʔotʃa		hump (of hunchback)
tʃ'ook'-eetʃa	tʃ'ook'eetʃa		draw water from a bucket using a cup
tʃoolatʃa	tʃoolatʃa		breakfast
tʃool-eetʃa	tʃooleetʃa		beat, crush
ts'ots'eetʃa	ts'ots'eetʃa		hang up
tʃ'ubolajtʃa	tʃ'ubolajtʃa		be corrupt
ts'uk'e	ts'uk'e		ring (finger)
tʃ'uk'k'ana	tʃ'uk'k'ana		night
ts'ura	ts'ura		dust
tʃuraaʃa	tʃuraaʃa		early
tʃuranne	tʃuranne		front (of something)
tʃ'utʃ'a	tʃ'utʃ'a		buttock
tʃu-tʃute	tʃu-tʃute		chick
tʃ'uuluka	tʃ'uuluka		leprosy
tulutʃatʃa	tulutʃatʃa		clay
tun-eetʃa	tuneetʃa		move away, migrate
tunna	tunna		termite hill
turka	turka		demon, evil spirit (Satan)
turma	turma		stump
tuullaɗal-eetʃa	tuullaɗaleetʃa		bump (v), knock against
tuuma	tuuma		garlic
twina	twina		centipede
twina-karʔa	twinakarʔa		intestinal worm
waaɾeetʃa	waaɾeetʃa		speak, talk

waaria	waaria		thing
waaria	waaria		word
walla	walla		white mushroom
wofano	wofano		bull
woktehe	woktehe		camp, encampment
wookatʃahe	wookatʃahe		very few
work’etʃa	work’etʃa		gold
wosana	wosana		desert
wote	wote		season
zaale	zaale		elephant's trunk
zajtone	zajtone		guava
zallamatʃu	zallamatʃu		gecko
zamade	zamade		largest rat
zikole	zikole		small hawk
ʒiʃe	ʒiʃe		bow (hunting)
ʔaaba	ʔaaba		towards
ʔaakoɗɗe	ʔaakoɗɗe		fail
ʔaank’al-eetʃa	ʔaank’aleetʃa		cook (v)
ʔaanno	ʔaanno		milk (n)
ʔaareetʃa	ʔaareetʃa		chase (v)
ʔabaltʃa	ʔabaltʃa		largest knife
ʔabari-so	ʔabariso		visiting a sick person
ʔabo	ʔabo		mother's brother (uncle)
ʔabukaado	ʔabukaado		avocado
ʔaf-eetʃa	ʔafeetʃa		spread out (maize, clothes) (tr)
ʔafufa	ʔafufa		bellows
ʔafuri	ʔafuri		four (4)
ʔagazane	ʔagazane		large antelope
ʔahajjo	ʔahajjo		grandmother
ʔahaw-eetʃa	ʔahaweetʃa		roast (for meat and kɔ̀lo)

ʔahhajo	ʔahhajo		grandparent
ʔahima	ʔahima		cousin (male)
ʔahintʃa	ʔahintʃa		cousin (fem)
ʔahootʃa	ʔahootʃa		kolo
ʔahotʃa	ʔahotʃa		grandmother
ʔajje	ʔajje		where?
ʔajno	ʔajno		who?
ʔajno-kina	ʔajnokina		maybe, don't know
ʔaki-so	ʔakiso		wink (eye)
ʔakkaɗɗonhiɗe	ʔakkaɗɗonhiɗe		bewitch, cast spell
ʔakk-akkani	ʔakkakkani		(be) dim
ʔakkani-kia	ʔakkanikia		(be) bright
ʔakka-tupisooni	ʔakkatupisooni		be dark color
ʔakk-eetʃa	ʔakkeetʃa		find
ʔakki-so	ʔakkiso		explain
ʔakkiswahe	ʔakkiswahe		show
ʔalaangetʃa	ʔalaangetʃa		whip (n)
ʔalaɗɗalaʃe	ʔalaɗɗalaʃe		bastard, illegitimate child
ʔalal-eetʃa	ʔalaleetʃa		soar
ʔalaltʃa	ʔalaltʃa		ruminate, chew cud
ʔalanne	ʔalanne		outside
ʔalautʃa	ʔalautʃa		sister (elder/younger)
ʔalladɗii-so	ʔalladɗiiso		cease, stop
ʔallapatʃe	ʔallapatʃe		lose (tr)
ʔallekʼetʃa	ʔallekʼetʃa		(be) proud
ʔalʔo	ʔalʔo		(be) scarce
ʔamanijahhe	ʔamanijahhe		believe
ʔamanni	ʔamanni		now
ʔamɓa	ʔamɓa		breast
ʔana	ʔana		I

ʔanha-so	ʔanhaso		embrace, hug (v)
ʔankasa	ʔankasa		elder
ʔankasa-lemeejo	ʔankasalemeejo		father's brother (uncle)
ʔannanta	ʔannanta		journey, trip (n)
ʔann-eetʃa	ʔanneetʃa		go
ʔantʃo-maʃohhe	ʔantʃomaʃohhe		self
ʔantʃota	ʔantʃota		saliva
ʔappa-mea	ʔappamea		owner (head of the house)
ʔaree	ʔaree		here
ʔar-eetʃa	ʔareetʃa		drive away
ʔari-so	ʔariso		steer (v)
ʔarom-eetʃa	ʔaromeetʃa		to sharpen (a knife)
ʔarom-eetʃa	ʔaromeetʃa		sharpen (knife)
ʔarrele	ʔarrele		eighth month
ʔartʃoote	ʔartʃoote		stool
ʔaʃanne	ʔaʃanne		how?
ʔaʃita	ʔaʃita		elder
ʔaʃkarta	ʔaʃkarta		slave
ʔaʃo	ʔaʃo		ancestor
ʔaʃʃa-so	ʔaʃʃaso		(be) able (to)
ʔass-eetʃa	ʔasseetʃa		join, put together
ʔatoretʃa	ʔatoretʃa		cat
ʔats'ilo	ʔats'ilo		fly (n)
ʔauʃita	ʔauʃita		(be) new
ʔawɗa	ʔawɗa		whole milk
ʔawwe	ʔawwe		today
ʔazgaare	ʔazgaare		fisherman
ʔee-bajʃ-itʃa	ʔeebajʃitʃa		stupid person (fem)
ʔee-bajtʃa	ʔeebajtʃa		(be) stupid
ʔeebumi-so	ʔeebumiso		deceive

ʔeeɗama	ʔeeɗama		fruit
ʔeeɗama-kombotʃo	ʔeeɗamakombotʃo		kernel (of corn, maize)
ʔeeɗame-haɗɗawe	ʔeeɗamehaɗɗawe		grapefruit
ʔeeɗɗihha	ʔeeɗɗihha		everything
ʔeeɗe	ʔeeɗe		(be) unripe
ʔeejena	ʔeejena		yes
ʔeesa	ʔeesa		bird with white on wingspan (ex. snake-eagle)
ʔeetiʔawe	ʔeetiʔawe		flow
ʔeetotʃa	ʔeetotʃa		evening meal
ʔekerro	ʔekerro		teak tree
ʔekka-so	ʔekkaso		try
ʔeko	ʔeko		tail
ʔellaha	ʔellaha		down
ʔellel-anne	ʔellelanne		ascend, go up
ʔelleʔela	ʔelleʔela		up
ʔellinɗara	ʔellinɗara		third month
ʔelli-so	ʔelliso		resolve, settle (dispute)
ʔenn-eetʃa	ʔenneetʃa		milk (cows, goats) (v)
ʔents'iretʃa	ʔents'iretʃa		tongue
ʔeratti	ʔeratti		tonight
ʔerkama	ʔerkama		work (n)
ʔerkama-mpajtʃa	ʔerkamampajtʃa		(domestic) servant
ʔerka-so	ʔerkaso		make
ʔerraane	ʔerraane		over, above
ʔerrobahaji-so	ʔerrobahajiso		(be) high
ʔeʃo	ʔeʃo		no
ʔetakera	ʔetakera		morning
ʔeteeke	ʔeteeke		crawl
ʔetootʃi	ʔetootʃi		when?
ʔetʃtʃitʃa	ʔetʃtʃitʃa		swelling

ʔibo	ʔibo	[‒‒]	insult (v)
ʔigaɾɾamiʃu	ʔigaɾɾamiʃu		dwarf (fem)