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Erik John Anonby

**Phonology and Morphology of
Mambay (Niger-Congo, Adamawa)**



Phonology and morphology of Mambay (Niger-Congo, Adamawa)

Proefschrift

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de graad van Doctor aan de Universiteit Leiden,
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Erik John Anonby
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**Phonology and morphology of
Mambay (Niger-Congo, Adamawa)**

Erik John Anonby

Acknowledgments

This book is dedicated to Ti'za Christina, star of the Ramadan moon, who endured my dream of Africa and made it come true; and to Tinaga Parisa and Kyahrimi Nisse, my hot-blooded little Mambay girls.

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« **Heega hji haa saa fi naale ya** » ‘Un couteau ne peut pas rentrer dans le fourreau de son collègue.’

Enfin, je dis au peuple mambay, **ri zoori ro!** Nous vous saluons! **Kiswa!** Nous vous remercions! Comme « **Tuh bom hji marva ya** » ‘Un seul bracelet ne fait aucun bruit,’ que vous vous épanouissiez dans un esprit d’entente mutuelle. **La’ fah kaa fuu peh bee naa sigzi Kaakaala ma Lahzwa’, ró haan iro kinabom. Ná liizi ka ná daazi ig para. Siketi má gbah sehzinza, má gii zimfin anza. Má pale la’ ido’.**

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Abbreviations and symbols

adj.	adjective
adv.	adverb
al.	alienable
ANAPH	anaphoric demonstrative
ATTRIB	attributive copula
AUG	augmentative
borr.	borrowing
C	consonant
C/I	co-referential/impersonal
CAUS	causative
Cd	coda
CL1	class 1
COLL	collective
COREF / coref.	co-referential
dem.	demonstrative
DU	dual
EMPH	emphasis
EXCL / excl.	exclusive
EXPECT	expectation marker
F ₀	fundamental frequency
Fr.	French
Fulf.	Fulfulde
FUT	future
GEN	generic
H	high (tone); laryngeal
h	pharyngealization
HEAD	syntactic head
Hz	Hertz
i	identical participant reference
IDEO	ideophone
IMPERS / impers.	impersonal
IMPFV	imperfective
INAL / inal.	inalienable
INCL / incl.	inclusive

INDEP	independent pronoun
intr.	intransitive
IRR	irrealis
j	non-identical (switch) participant reference
L	low (tone); Type 2 sonorant
lex.	lexically determined
LF	linked form
lit.	literally
N	nasal consonant; Type 1 sonorant
n.	noun
NEG	negative, negation
NONPFV	non-perfective
NUM	numeral prefix
O	onset; obstruent; object
OBJ	object
OPT	optative
ORD	ordinal
PERF	perfect
PFV	perfective
PFX	prefix
PL / pl.	plural
PLUPERF	pluperfect
pn.	pronoun
POSS	possessive
Pred.	predicate
QM	question-marking particle
QUOT	quotation marker
R	rhyme; Type 3 sonorant
re.	regarding
REAL	realis
REFL	reflexive
REL	relativizer
REP	reported speech
S	subject
SG / sg.	singular
sp.	species
TAM	tense/aspect/mode
TOPIC	topicalization and related functions
tr.	transitive
TRS	tone register shift
V	vowel; oral vowel; verb
Ṽ	nasalized vowel
v.	verb

VN / v.n.	verbal noun
VV	long vowel
X	segment (C or V)
α	exhibiting a specific value
μ	mora
σ	syllable
∅	zero pronoun
1	first person
1&2	first-and-second person
2	second person
3	third person
*	ungrammatical or unattested structure
[]	phonetic transcription; boundary
/	either/or; phonological transcription
.	syllable boundary (used to distinguish a g + b sequence from unitary gb); separator between words glossing a single morpheme
:	separator between glosses of fused morphemes
-	morpheme boundary
+	morpheme boundary
=	stem-clitic boundary
±	optional
~	free variation / allomorphic alternation
↓	non-automatic downstep
ˊ	high tone/pitch
ˋ	low tone/pitch
ˆ	falling tone/pitch
ˉ	mid pitch
ˊ	rising tone/pitch
≈	expectation marker
ʔ	preglottalization
˙	glottalization (vowels)
˚	nasalization

Glossary

Mambay

- ʔàzgàrà** reciprocal kinship unit used between a person and all blood relatives with the person's female in-laws who are older than his or her spouse
- fàzàrà** reciprocal kinship unit used between a woman and her female relatives with her male in-laws who are older than her husband
- fàhzàrà** reciprocal kinship term used between a man and his male relatives with his male in-laws who are older than his wife

Regional French

- boule* ball of moist cooked grain meal; also called *cous-cous*

INTRODUCTION

To the north of the Adamawa Massif and approximately eight hundred kilometres from the Gulf of Guinea, the Mambay ethnic group straddles the border of Cameroon and Chad. Members of the group, numbering about fifteen thousand, live along the Mayo Kebbi (Kebbi River) at the point where it flows south-west from Chad toward its confluence with the Benue River in Cameroon.

The Mambay language belongs to the Adamawa-Ubangi family, a group which has been considered “probably the most poorly documented of all the major divisions of Niger-Congo” (Bennett 1983:23). Researchers have overlooked this language family—especially the Adamawa branch of which Mambay is a part—due to its distance from the coast, the small populations of many of its constituent groups, and their dispersal among larger, unrelated languages. Other possible reasons for this situation include the Adamawa languages’ distance from urban centres as well as the sheer number and diversity of languages in this linguistically fragmented area of west-central Africa (Bennett 1983:23, Boyd 1978:190, Samarin 1971:217). Consequently, despite Strümpell’s identification of the language as early as 1910, Mambay has long managed to elude serious investigation. Those studies in which Mambay is mentioned (1.2.1) are for the most part concerned with the still-unresolved genetic structure of the larger language groupings of which it is a part, and give little information on the language itself.

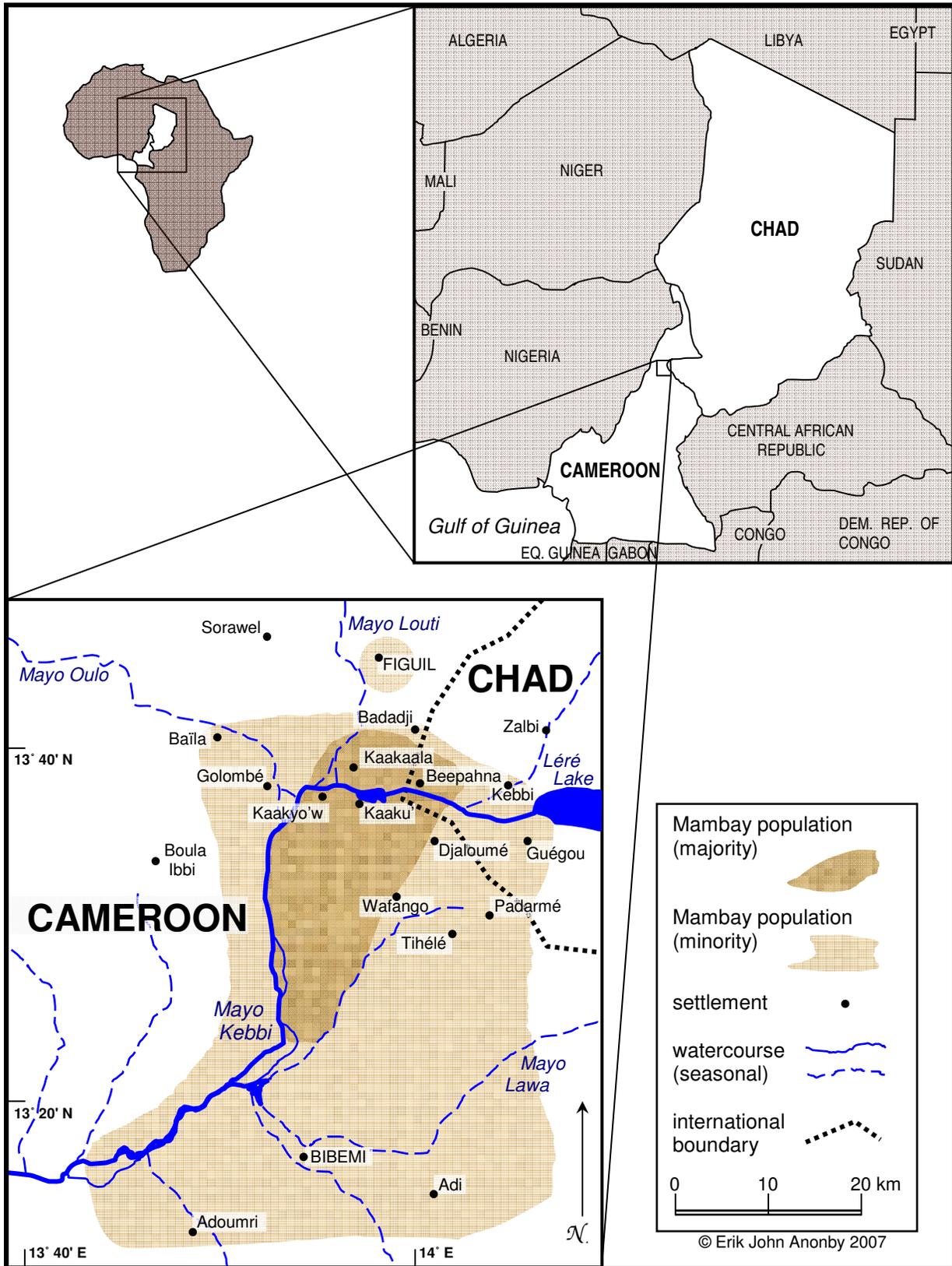
The present research responds to this lacuna by providing an in-depth description of the Mambay language, with a focus on phonology and morphology.

In the following sections of this chapter, the Mambay ethnic group is introduced within its historical context (1.1). This is accompanied by an overview of the Mambay language which gives attention to the current sociolinguistic situation and existing linguistic exploration, including genetic classification (1.2). Finally, the framework and methodology of this study are presented (1.3).

1.1 The Mambay ethnic group

The Mambay ethnic group is found in north-eastern Cameroon and south-western Chad (see Figure 1 on the following page). In Cameroon, they are primarily located in the Guider and Figuil Subdivisions (Mayo-Louti Division) as well as the Bibémi and Pitoa Subdivisions (Bénoué Division), all of which are found in the North Province (Dieu and Renaud 1983:387, Breton and Fohung 1991:83–7). In Chad, the Mambay are found in Biparé Canton, which is located in the Léré Subdivision of the Lac-Léré Division

Figure 1: The Mambay ethnic area



(sources consulted for geographical data: Institut Géographique National (France) and Institut National de Cartographie (Cameroun) 1994, Institut Géographique National (France) 1974, and Defense Mapping Agency Aerospace Center 1982)

(formerly part of the larger Mayo-Kebbi Division) (Hamm 2001:7, Grimes 2000a:43, 68). There are small communities of Mambay outside the language area in the cities of Garoua, N’Gaoundéré and Maroua in Cameroon; in Chad, displaced populations live in Léré and N’Djaména.

Members of the Mambay ethnic group call themselves **tî mambày** ‘those who are (of) Mambay,’ and they refer to their language as **dâg tî mambày** ‘mouth of those who are (of) Mambay. According to Oussoumanou, the principal informant for this study, the name **mambày** comes from the phrase **màm bèyà**, which in the language as it was used by the ancestors of the Mambay people group meant ‘my friend’.

The name ‘Mambay’ has been rendered elsewhere as follows:

Mambai	(Boyd 1989a, 1989b, Église des Frères Luthériens (n.d.))
Mambaï	(Eguchi 1971)
Mambay	(Baudelaire 1944, Lembezat 1961, Lestringant 1964, Dieu and Renaud 1983, Elders 2000, Hamm 2001)
Mamgbay	(Dieu and Renaud 1983)
Mamgbei	(Dieu and Renaud 1983)
Mangbai	(Lukas 1937, Westermann 1940, Westermann and Bryan 1952, Boyd 1978, Mann and Dalby 1987, Boyd 1989a, 1989b)
Mangbaye	(Republic of Chad 1993)
Mangbei	(Strümpell 1910, Tessmann 1932, Greenberg 1949/55, 1963, Samarin 1971, Ubels and Ubels 1980, Bennett 1983)
Mangbaï	(Lembezat 1961, Westermann 1948)
Mombaye	(Republic of Chad 1993)
Mongbaï	(Republic of Chad 1993)
Mumbaye	(Hamm 2001)

Lembezat records the additional variants Bangeï, Mabai, Mambei and Mangbay (1964:437). Additional variant spellings of the name catalogued in the *Ethnologue* but for which no ulterior source has been identified are Manbai, Momboi, and Mongbay (Grimes (2000a:68). The multiplicity of transcriptions in various sources is attributable to the influence of competing orthographies (German, French, African languages, phonological orthographies) on the name used by the Mambay for themselves as well as those used by other people groups for the Mambay.

Often, the Mambay also refer to themselves as **tî bòdǵì [tî bò’]ǵì** ‘those who are (of) Bo’lgi’ (see, for example, Elders 2000:15). Oussoumanou insists that the term **bòdǵì** properly refers to the use of one’s own language as a secret or in-group language.

The Mambay have yet to form the subject of an ethnographic or historical study; documentation of their culture and history is limited to scattered references in a few sources (Lembezat 1961:136, 147, 191; Lestringant 1964; Hamm 2000:6, 8–13; Jogri 2006). In the following sections, three specific topics are addressed in relation to the Mambay. First, a jumble of population figures is evaluated and a current estimate of the

ethnic group's population is put forward (1.1.1). Second, the geography of the Mambay ethnic area and the people group's patterns of subsistence are introduced (1.1.2). Third, historical background is presented for the Mambay with reference to both oral and written sources (1.1.3).

1.1.1 Population

Population statistics for the Mambay are lacking, and those that exist are often outdated, incomplete or difficult to interpret. The main issues compromising the usefulness of the figures are: census reliability concerns; a poor understanding of the extent of the Mambay ethnic area (especially in the south and east) by researchers; a lack of account for other ethnic groups living in "Mambay" villages; and a converse lack of account for Mambay living outside the ethnic area.

It seems that the Mambay population declined in the first half of the 20th century (Hamm 2001:7), but that it has, on the whole, increased since the 1960s. The following sources, whose figures are variously given for Cameroon, Chad and both countries together, support the trend of a recent increase:

	Cameroon	Chad	both countries
Cameroon Colonial Administration (1944) in Lestringant (1964:297, 300)	more than 1285		
Westermann and Bryan (1952:46)	3051	860	3911
Cameroon Colonial Administration (1958) in Lestringant (1964: Appendix)	more than 1450		
Lembezat (1961:151)			1500
Voegelin and Voegelin (1964:43)			4000
Lestringant (1964:104)			less than 5000
Welmers (1971:842)			2000
Stennes in Samarin (1971:217)			2000
uncited (1982) in Grimes (2000a:43)			2500
Dieu and Renaud (1983:161)			less than 5000
Republic of Cameroon (1969) in Eguchi (1971:139)	5857		
Republic of Cameroon (1987) in Hamm (2001:8)	7288		
Republic of Chad (1993)		2067	

Figuil Diocese (1999), pers. comm. Father Vladislav (2005)			13 000
Hamm (2001:8)	8000	2000	10 000

The current population of the Mambay ethnic group has been reviewed within the context of the present study. Unfortunately, at the time of writing, the results of the 2005 Cameroon census had not been released. However, taking into account selected new (2005/6) figures gathered during polio vaccination campaigns in both countries as well as population growth rates for older census figures, and attempting to address the limitations highlighted above, the population of the Mambay ethnic group is estimated to be as follows:

Cameroon:	12 000
Chad:	3 000
Both countries:	15 000

1.1.2 Geography and subsistence

The Mambay ethnic area is dominated by a mountain and a river. Mambay Mountain is a long, tawny inselberg known to the Mambay simply as **zé'gà** 'the mountain.' The Mayo Kebbi (also spelled Kebi or Kébi) river, which the Mambay refer to as **tí-byàá** 'the great waters' or **sî** 'the valley, the river,' flows year-round through floodplains located around the northern and western slopes of the mountain.

While the mountain has historically been a place of refuge for the Mambay (see 1.1.3.1–1.1.3.2 below), its flora and fauna continue to serve as a source of food, medicine and building materials. When the Mambay dispersed from the mountain in the mid-19th century, the majority of the people group relocated to villages that sprinkle the floodplain. Since this time, the river has also played a major part in the livelihood of the group in the areas of agriculture and fishing.

The principal food crops are various species of millet and sorghum, white and yellow maize, peanuts, beans, taro and sweet potatoes. Wild leaves and herbs, which are gathered during the rainy season and dried, constitute an essential element in staple sauces. In some areas of the floodplain, there are lush groves of bananas and mangoes. Although it has become less lucrative than it was in the latter half of the 20th century (cf. Lembezat 1964:32–3), cotton is grown as a cash crop; in addition, onions are cultivated in the dry season with water taken from wells along the river and sold to merchants who distribute them to other parts of the two countries.

Fish was among the most important food items in the past, and fish were abundant in the Mayo Kebbi as late as the 1960s (Lembezat 1964:60). However, because of consistently low water levels and the introduction of dragnet fishing by Nigerian immigrants (now settled in Kaaku' (Kakou)) since this date, fish stocks have decreased dramatically and meals eaten with traditional fish-based sauces are the exception rather than the rule. This

change is one of many instances in which the effects of pressure on the environment and changes in the environment itself have affected the livelihood of the Mambay.

Interestingly, the Mambay lexicon is a witness to two other major environmental changes which have affected the people group. First, this is evident in the domain of animal vocabulary. Older speakers of Mambay know the names of many large mammals, and have seen and eaten some of these animals; in contrast, younger speakers of the language know only the names of a few large mammals which appear in folk tales, but have not seen or consumed them. This is an indicator that, as speakers report, almost all of the larger mammals have recently disappeared (or, as they say, “gone away”) from the ethnic area.

Second, the Mambay calendar (described in Anonby and Oussoumanou 2008 forthcoming) hearkens to a time when the rainy season lasted for about eight lunar months; the length of this period is deducible from the names of the months and their place in the agricultural cycle. In the last ten years, however, the rainy season has lasted for an average of four months. This means that rather than three major harvests in a year, which was still the norm fifty years ago, there are now usually only two. In 2005 in particular, only one harvest was gathered, and a small-scale famine resulted in the Mambay area.

Upheavals in the external cultural landscape have accompanied and, in many cases, precipitated these changes to the livelihood of the Mambay. The history of these movements is addressed briefly in the following section.

1.1.3 Historical background

The origins of the Mambay have been recorded primarily by means of oral history. Written documentation on the people group’s past is meagre; the principal historical records of pre-colonial and colonial history are passing references in a few sources. For the pre-colonial period, existing sources rely on oral history.

In the present section, oral and written sources are weighed against one another, and a single historical account is presented. Oral historians who made a significant contribution to this account are Oussoumanou Bouba (the principal collaborator), Saadu Kami Taw, Kada Moïse, and Kam Kaagbungni. Written sources referring to the history Mambay are Lestringant (1964), Lembezat (1961), Adler (1982), Mohammadou (1979), and Nassourou (n.d.), who may have relied on Mohammadou’s work.

Themes which figure consistently in oral and written accounts are historical origins and arrival in the present-day ethnic area (1.1.3.1), establishment of Fulbe hegemony over the Mambay (1.1.3.2), the status of the Mambay under European colonial administration (1.1.3.3) and their present position within the independent nations of Cameroon and Chad (1.1.3.4).

1.1.3.1 From origins to arrival in the present-day ethnic area

According to the oral historians, the Mambay came in the distant past from a place to the east of where they are now found. However, at the point where names and places are still remembered, the Mambay were approaching their present-day ethnic area from the west.

The Fulbe (also “Fulani” or “Peul”) jihad, which began in the first years of the 19th century, spread out from Sokoto in present-day north-western Nigeria (Trimingham 1980, Mohammadou 1979:277). Within a couple of years from its inception, the movement’s effects were felt across the Sahel. One front of the movement was based in Yola, the capital of what came to be known as the Adamawa Empire. As early as 1805, the empire began to destabilize the uneasy equilibrium that had existed beforehand in northern Cameroon (Lestringant 1964:112).

Soon, the Adamawa Empire advanced west and north, and many small populations were scattered before them. The outcome for these populations was bleak: many were enslaved; some were forcibly converted to Islam and, eventually, subsumed within the Fulbe population of the empire; others were wiped out; and still others managed to flee (Lestringant 1964:85, Lembezat 1961:156, Mohammadou 1979).

One of the latter groups was a community of Fali situated at **káà zé’gì hùùrì** (Ful. *hooseere fawru*) between Yola and Garoua, the present-day capital of Cameroon’s North Province. Over a period of about twenty years, they were consistently pushed back to the west and north. Often, this group fled to mountain strongholds for refuge. Despite this, in many of the years, their position was imperilled and they were forced to establish new settlements or, in some cases, join communities living in other mountain strongholds. Eventually, they joined a Nyam-Nyam community at **gàlim**. When the Fulbe attacked this village, they fled together with the Nyam-Nyam across the Mayo-Kebbi and together founded the village of **gàrnà**; later, they moved a short distance to the south, to a village called **tàrà** (Kami Taw 2005, Lestringant 1964:103).

A second group of Fali, some of whom had recently been driven from the east, were dislocated around 1825 when a Fulbe principality attacked from the north and destroyed their settlement (located at the same place as present-day Golombé). Like the first group, these Fali fled across the Mayo Kebbi. There, they established the village of Kaakyo’w (Katchéo) on the north-western slope of Mambay Mountain (Lestringant 1964:291, Oussoumanou 2004).

A third group which fled across the Mayo Kebbi was composed of members of communities who had been part of the Guidar confederation. However, when the confederation was destroyed, some fled to Mambay Mountain. To this day, descendants of this migration are counted among the Mambay clans. However, their Guidar origin is evident in that some still speak Guidar; in addition, one of their villages located on the south-western flank of Mambay Mountain is named Biou, after the Guidar clan from which they emerged (Oussoumanou 2004, Lestringant 1964:102).

Together, these three groups formed what is now known as the Mambay ethnic group. Although there was significant interaction between the Mambay and the Mundang at a later time (1.1.3.2), and some present-day Mundang clans are reputed to originate from among the Mambay (Adler 1982:122–6), the Mambay do not view the Mundang as one of the peoples from whom they originate (Kam Kaagbungni 2000, Kada 2003, Oussoumanou 2004, Kami Taw 2005; cf. 1964:292, contra Lestringant 1964:104).

1.1.3.2 Establishment of Fulbe hegemony

For several decades, the Fulbe were unable to gain dominance over the Mambay living on the mountain, or over the separating floodplain of the Mayo Kebbi, since their cavalry could not control the area for much of the year. During this time, the Mambay spread out around the mountain. Their settlements extended from Kaakyo'w and Tara on the west and south-west to Gehgu (Guégou) to the east and Beepahna (Biparé) to the north (Lestringant 1964:291, Oussoumanou 2004). Lestringant states that the Mambay adopted Mundang as a common language at this time, due to close relations with the Mundang of Léré (1964:292, 296); however, Mambay historians maintain that the Mambay continued to use their own language among themselves as a **bòdǵì** 'secret code, in-group language' (Oussoumanou 2004, Kami Tao 2005; see also 1.1).

In the years leading up to 1850 and in much of the latter half of the 19th century, the Fulbe principality of Bibémi, centred thirty kilometres south of the mountain, attacked and progressively conquered the Mambay villages around the mountain (Lembezat 1964:292, Nassourou n.d.). Of all the villages, only Beepahna successfully resisted the Fulbe forces thanks to its situation by the floodplain to the west and south, and an independent Mundang principality to the north and east (Lembezat 1964:292, contra Nassourou n.d.).

While some of the Mambay from villages conquered by the Fulbe took refuge and, in time, settled on top of the mountain for over a decade, others became subjects of the Fulbe. After this period, the mountain community began to come down and settle in the now-desolate village of **bòdǵì** (Balgi or Boulgui) on the north side of the mountain near Kaaku' (Kakou). With Kaakyo'w under Fulbe dominion, the Mambay were too weak to resist the Fulbe from the north, who took over the floodplain and set up a government at Golombé. Eventually, the Mambay of **bòdǵì** consented to the Fulbe hegemony and were permitted to inhabit the north side of the floodplain, which was better suited to agriculture (Lestringant 1964:291, 312).

1.1.3.3 European colonial administration

The first written record of the Mambay people group was made in 1851 by Barth, who did not visit the Mambay area but distinguished them as one of many people groups in what would later become northern Cameroon (Barth 1857 in Lembezat 1964:75). In 1889, an English expedition travelled up the Mayo Kebbi and reached the Mambay village of Beepahna (Biparé), passing several Mambay hamlets along the way. However, their record of the voyage gives no further details (Meckler-Ferryman 1892 in Lembezat 1964:75).

German troops conquered the Fulbe governments of northern Cameroon between 1900 and 1902. In doing so, they acquired domination over most of the Mambay ethnic area. Beepahna, however, was claimed by both the French and German administrations: the French, since Beepahna had managed to escape Fulbe control and the Germans, because it was coveted by the intermediary Fulbe administration for the same reason. Importantly, the Mayo Kebbi on which it was situated also represented a navigable route to the Atlantic Ocean for the French colony of Chad (Tchad). In defiance of a treaty that had been established between Germany and France in 1894, the German administration decided to establish control over Beepahna. They burned it to the ground the same year (Adler 1982:25). Again in 1905, when the chief of Beepahna protested German rule on the grounds that they needed to respect a prior agreement with the French, the outlying Mambay village of Kaagbungni (Kaboni) was burned—along with its inhabitants—by the German-led police force. To this day, its names **káà-gbúŋ̀nì** ‘place of ruins’ and **káà-sá’bà** ‘place of traditional salt (collected from ashes)’ recall this event (Kam Kaagbungni 2000; Lembezat 1964:156, 297; Adler 1982:25; Schilder 1994:127, 129).

The German administration lost control of Cameroon in 1915, and the French were given a mandate over much of the former German colony. Immediately, Beepahna was reincorporated into Chad; and from that moment onward, the Mambay have been divided between Cameroon and Chad (Lembezat 1964:151, 157).

Under the French, the Fulbe traditional government endured, although it was considerably weakened by the introduction of a parallel system of direct rule (Schilder 1994:133). Aspects of infrastructure, including the promotion of a cash-based market economy and the construction of a basic transport network, government buildings, schools, and a few health care facilities, appeared during this period (pp. 219–45). However, since the Mambay were located at the fringes of two administrative districts (Guidar and Bénoué), they experienced few of these benefits (p. 243).

1.1.3.4 The Mambay in independent Cameroon and Chad

Since the independence of Cameroon in 1961, Fulbe hegemony has persisted. However, there are signs that it is being further compromised (Schilder 1994:6). For example, all of the Mambay chiefs have been relegated to the lowest level recognized by the national government until recently. However, in 2006 the chief of Kaakyo’w was invited to apply for the status of 2nd-degree chief.

In Chad, the Mambay chief in Beepahna has been recognized as a high-ranking traditional chief by the Chadian government. Because of this, Mambay in both countries give allegiance to him as the supreme chief of their ethnic group.

From an economic perspective, the Mambay continue to experience some of the marginalization that characterized their status under the colonial government (1.1.3.3). For example, there is no high school (lycée) in the Mambay area. Because of this, students who wish to pursue a high school diploma are required to relocate, usually to Figuil. Many (perhaps most) of the students who attend high school do not return to live in the ethnic area.

Another instance of marginalization is evident in the poor transportation network among the Mambay villages. The Mambay population is distributed fairly evenly between the north and south banks of the Mayo Kebbi. However, there is no bridge over the river within the ethnic area; to drive—during the dry season—from Kaakaala (Kakala, pop. 2000) to Kaaku' (Kakou, pop. 1500), five kilometers apart across the Mayo Kebbi, it is necessary to make a ten-hour detour to the south-west and south, travelling close to Garoua. In the rainy season, even this route is usually impassable...**bàhrá ?éébà** 'it is better to swim.' Nor are there any sealed (paved) roads in the Mambay ethnic area. Within living memory, the markets of Kaakyo'w and Kaakaala were the main commercial centres in the area, and people from the Fulbe, Mundang, Fali and Guidar ethnic groups came long distances every week. However, these have died out in favour of the markets of Figuil and Baïla, both more expediently located on a sealed road. It is now the Mambay who must travel for hours to buy and sell, often to one another, outside of the ethnic area.

In addition to these secular considerations, the present religious landscape of the Mambay deserves attention. For a century after the Fulbe takeover (1.1.3.2), most of the Mambay resisted conversion to Islam, since it was associated with those who had deprived them of their autonomy. However, Islam grew rapidly among the Mambay between 1950 and 1980 for several reasons. First, many soldiers were stationed in predominantly Muslim areas in northern Cameroon (see also Schilder 1994:149). Second, it provided a universal forum within which all peoples of northern Cameroon were able to express resistance to the French colonial administration. Third, in the first decades after independence, the Cameroonian president Ahidjo, who was himself Fulbe, endorsed administrative policies favourable not only to the Fulbe rulership but also to Muslim clerics and converted chiefs (Schilder 1994:6, Oussoumanou 2004).

Christianity grew most rapidly in the same time period, although its association with the previous colonial administration compromised its appeal. Rather than being directly introduced to the Mambay by western Christian missionaries, as was the case for most or all of the surrounding people groups, this faith came to them through the Mundang (Jogri 2006). As with Islam, the spread of Christianity was hampered by regional ethnic associations, in this case with the Mundang. In the end, it grew most rapidly among the Mambay villages of Chad, which the Fulbe had never conquered and where the influence of Ahidjo's policies was at best indirect. Until recently, Mundang was used in Protestant church services, much to the dismay of Mambay inside as well as outside of the Church (Schilder 1994:188–90, Kam Kaagbungni 2000). Catholic churches among the Mambay have also been moving from services conducted primarily in Fulfulde to those which are mostly in Mambay.

The last person claiming to practice traditional religion among the Mambay died in Kaakyo'w in 2003 (Oussoumanou 2004). At present, most Mambay consider themselves Muslim, and about 500 Mambay (3%) are adherents of Christianity (Hamm 2001:11, Kada 2003). There is also a sizable group of secularized Mambay, perhaps 5%, who do not claim adherence to any religion, including traditional religion; however, many people

who fall into this category have formerly practiced one of the three religions (Kada 2003).

A final issue which radically affects the Mambay are changes in population demography. A major increase in the area's population in the last half of the 20th century (1.1.1) has resulted in crises such as decreased soil productivity, diminished fish stocks, depletion of other fauna, and a scarcity of firewood for cooking (1.1.2). Some of this increase reflects the incursion of clans from other ethnic groups, in particular Mundang, Tupuri, Guidar and Guiziga. Conversely, many Mambay have left the ethnic area: the largest concentrations of Mambay emigrants are found in Figuil and Garoua (1.1.1). Both movements have destabilized traditional authority structures (families as well as villages) and have resulted in increased pressure on the Mambay language, primarily from Fulfulde (1.2.3.1).

1.2 The Mambay language

In the first part of this section, earlier studies on Mambay are catalogued (1.2.1). The classification of the language and the sociolinguistic situation form the discussion in the second and third portions of this section (1.2.2 and 1.2.3).

1.2.1 Earlier studies on Mambay

Mambay word lists are found in Strümpell (1910), Lukas (1937), Baudelaire (1944; numerals), Stauch (1966; fish names), Eguchi (1971), Elders (field notes from 1992/3) and Hamm (2001).

Classificatory remarks on Mambay are found in Tessmann (1932), Westermann (1940, 1948, 1952), Baudelaire (1944), Greenberg (1955, 1963), Samarin (1971), Boyd (1974, 1978, 1989a), Ubels and Ubels (1980), Hagège (1981), Bennett (1983), Dieu and Renaud (1983), Mann and Dalby (1987), Bright (1992), Elders (2000), Grimes (2000a, 2000b), and Hamm (2001). These remarks have formed the basis for the classification presented in 1.2.2.

Among these sources, the two articles which constitute important exceptions to a general tendency of brevity and uncertainty are those of Eguchi (1971) and Hamm (2001). In his *Esquisse de la langue Mambai*, Eguchi expresses the hope that “ce rapport préliminaire, sans doute plein de fautes dûes au manque d’investigation intensive, pourra être utile” (1971:139). Eguchi’s study, while basic, has nonetheless been indispensable as a starting point for the present investigation of Mambay. It provides concise background to the language before presenting a brief phonology and morphology; these sections are followed by the transcription and translation of a story as well as an 800-word lexicon. Eguchi’s work raises a number of interesting questions on the language in the areas of consonant and vowel inventory, alternations in tone, length and nasality, tone-consonant interaction (p. 155) and the absence of tongue-root vowel harmony. Perhaps most remarkable is his positing of nasal implosives (p. 144). This question is revisited in the present research in 2.1.7.1.

While Eguchi concentrates on linguistic aspects of Mambay, Hamm's (2001) *Sociolinguistic survey of the Mambay of Cameroon and Chad* provides a complementary portrayal of the language. Although its stated purpose is to examine possibilities for language development (p. 2), Hamm's study offers findings regarding key topics such as demographics, multilingualism, dialect variation, intelligibility with related varieties, language attitudes and other related sociolinguistic questions.

In addition to these two longer sources, a number of articles have been written on Mambay in the context of the present research. A provisional version of the standard Mambay orthography appeared in 2004 (Anonby 2004a; see also 1.3.3). In the same year, a paper was presented in which the labial flap was described in Mambay (2004b). In that study, which has been developed in a recent article (2007), it is argued that the labial flap is profoundly phonologized (see also 2006:224 and section 2.1.8 in the present study). Elsewhere, a preliminary description of the structure of discourse in Mambay has appeared (2005). In addition to these studies, an article has been published which outlines the phonetic inventory and basic phonological system of Mambay. It is accompanied by recordings of phonetic data, including a longer text which is also transcribed phonetically (2006). Further, in a work that is both descriptive and comparative/historical in nature, a set of vestigial noun suffixes is defined; its effect on the morphological structure of nouns is delineated, and its origins are explored (2007b). Finally, a short sketch of Mambay grammar and phonology is destined to appear in the Mambay dictionary (Anonby and Oussoumanou 2008 forthcoming) along with an updated version of the orthography which includes tone marking.

1.2.2 Classification

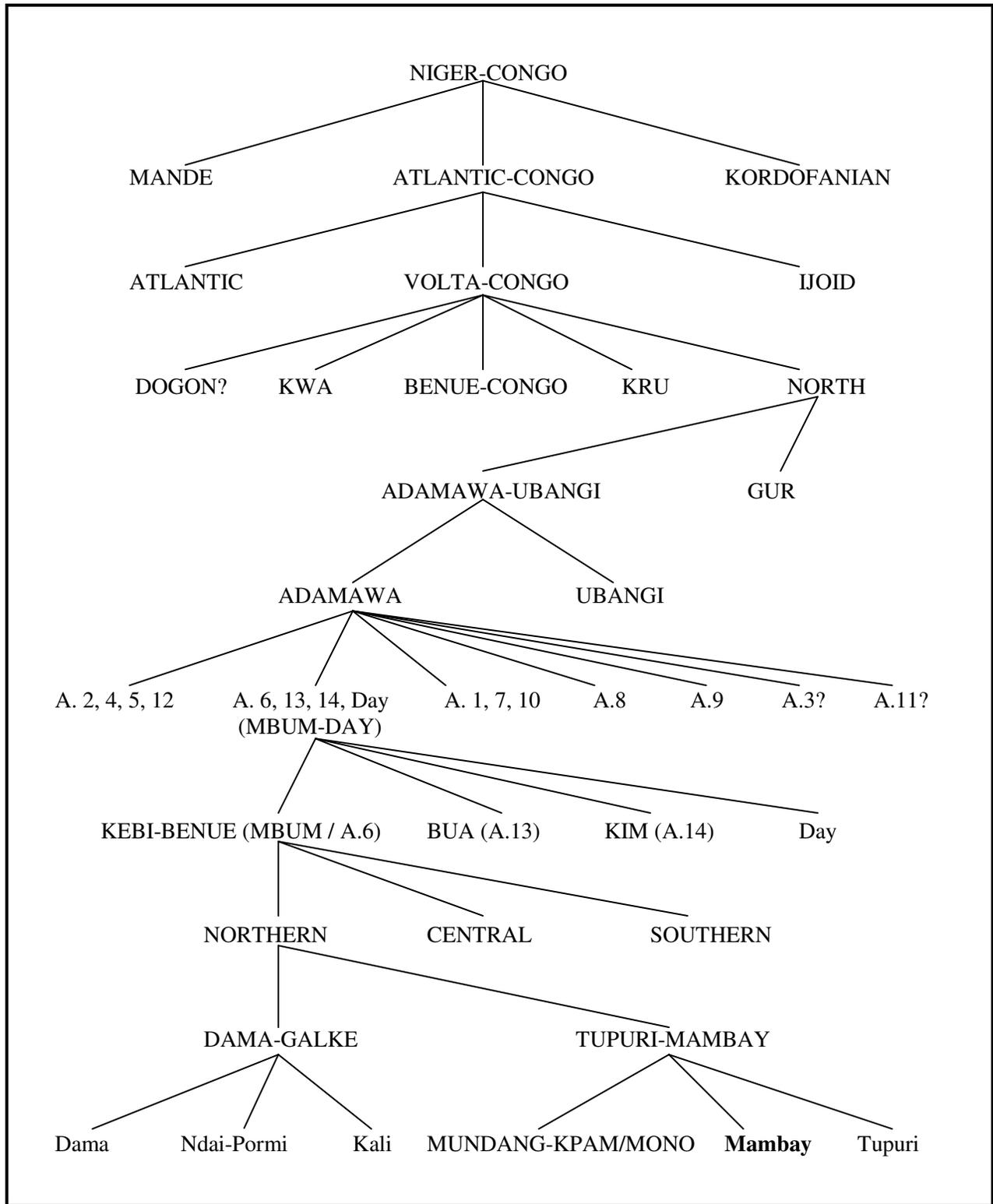
Mambay has been classified as Niger-Congo, Atlantic-Congo, Volta-Congo, North, Adamawa-Ubangi, Adamawa, Mbum-Day, Kebi-Benue, Mambay (Williamson 1989, Boyd 1989a, Elders 2000:9, Grimes 2000a:68; see also the following subsections). Figure 2 (see following page) shows how each of these divisions fits into the larger picture of Niger-Congo classification (note that relations among higher levels of classification are still the subject of discussion). In this chart, names written with upper-case letters refer to language families, and those written with lower-case letters refer to terminal nodes (i.e. individual languages).

Although other aspects of the language have been studied relatively little, the genetic classification of Mambay has been subject to some controversy. Debates affecting the classification of Mambay and the language groups to which it belongs have taken place at all levels of its genetic hierarchy, although some intermediate labels (such as "Adamawa") have—for better or for worse—remained for the most part unchallenged since their establishment. In the following sections, competing positions are reviewed, and the classification given here is defended for lower levels.

1.2.2.1 Early classifications

Although the Mambay language was recognized as early as 1910, its genetic status remained poorly defined until Greenberg's (1955/63) classification. Up to that point, Mambay was often categorized with other "Sudanic" languages. However, this grouping

Figure 2: The classification of Mambay in Niger-Congo



(based on Williamson 1989, Williamson and Blench 2000, Boyd 1989a, Elders 2000 and Grimes 2000a, 2000b)

was largely based on geography and typology, both of which have proven unreliable as indicators of genetic affiliation in the fragmented central African linguistic area (Greenberg 1963, Thomas 1972, Williamson and Blench 2001:14–5).

The first mention of the Mambay language is found in Strümpell's (1910) assemblage of word lists elicited from among the "Heidensprachen Adamauas" (Adamawa pagan languages). Although Strümpell demonstrates relationships between a number of the languages under investigation, Mambay is not included in these groupings.

Delafosse (1924) refers to Strümpell's (1910) work in his classification of central African languages; however, he neglects to mention Mambay or to place it within one of the sixteen "soudanaises" families which he proposes.

Using the information provided in Strümpell's (1910) article, Tessmann (1932:187–9) provides a generic classification of Mambay within the frame of "Musiktonsprachen, Nigritische, Nichtklassensprachen: Sudansprachen (Sudanneger)." Like Strümpell, however, Tessmann is unable to relate Mambay to the numerous other languages and language groups within his classification.

Lukas (1937:107) likewise makes reference to Strümpell's article, and tentatively affirms Mambay's status as an unaffiliated language. However, paying particular attention to the data, he acknowledges the possibility of a relationship between Mambay and Mundang, and lists similarities in basic vocabulary from various domains, including lower numerals, to support this hypothesis.

Although Mouchet (1938) classifies a number of neighbouring languages under the label "Kabi-Benwe," he makes no mention of Mambay.

Westermann (1940/8) classes Mambay within a "Shari-Logone-Tshad" group, itself part of an "Innersudanische" (Inner Sudanic) division of Sudanic languages. He admits that degrees of relationship within this group are uncertain, and provides no further suggestions regarding the relationship of Mambay to other languages in this group (1948:459). Elders (2000:10) has noted that Westermann's (1940/8) classification is based on geographic and typological rather than genetic criteria; a number of the languages included in Westermann's Shari-Logone-Tshad grouping are presently classified as Chadic.

Baudelaire (1944) mentions Mambay in a comparison of numeral systems which groups together some of the "dialectes Habé" of the upper Benue region (note that the term Habé is based on the Fulfulde word *haabe* 'pagans' (Schilder 1994:37, 43), and is more accurately viewed as a cultural (rather than linguistic) designation. However, he does not attempt to relate these languages to larger genetic groupings. Oblivious to the suggestions of Lukas (1937) and in contradiction to the similarity evident (in retrospect) between numerals in his "Mbum-Laka-Mundang" subgrouping and those of his Mambay list, Baudelaire concludes that Mambay appears unrelated to any other language in the region (1944:24, 27).

In their (1952) classification of Sudanic languages, Westermann and Bryan provide a more conservative grouping of Inner Sudanic than that of Westermann (1940/8). In the later work, many of the Inner Sudanic languages are moved back into unclassified “isolated groups.” Significantly, for the first time Mambay is included within the isolated “Mbum” group (1952:145–7) which had itself been posited as early as Tessmann (1932:188). This grouping prefigures most of the later lower-level classifications of Mambay.

1.2.2.2 Position and labelling of Kebi-Benue (“Mbum”/“Adamawa 6”)

The earlier placement of Mambay within the “Mbum” group by Tessman (1932) and Westermann (1952) is confirmed in Greenberg’s (1963; cf. 1949/55) influential classification of African languages. Greenberg (1955:11) makes an additional advance, however, in that he links the Mbum group with higher levels of classification. His (1949) partition of the Sudanic languages into Niger-Kordofanian (now generally referred to as Niger-Congo; see Williamson 1989:19) and Nilo-Saharan phyla is well-known. Within Niger-Kordofanian, one of his innovations is the collection of a number of unclassified languages and language families, including Mbum, under the label “Adamawa” (1955:11). Ultimately, he joins the Adamawa languages to a neighbouring family “Eastern” to constitute the “Adamawa-Eastern” (now Adamawa-Ubangi) branch of Niger-Congo (1963; cf. Samarin 1971:213, 225). While some sources originally queried this decision (e.g. Voegelin and Voegelin 1964:38–9), it has gained widespread acceptance, although it has been defined in recent classifications as a continuum (which may even include Gur) rather than a monolithic family (Williamson and Blench 2000:18). As regards Mambay’s inclusion among the Adamawa languages, only Caprile (1977:18, contra 1972:36 and 1977:16) has questioned this assessment. However, he admits that his skepticism is tentative, and does not defend it.

In Greenberg’s work, then, the Mbum family is re-labelled “Adamawa 6”—one of fourteen Adamawa families. Boyd, who has subsequently (1974, 1978, 1989) examined the internal structure of the Adamawa languages, views Greenberg’s groupings as generally accurate but also as conservative: “...ces groupes sont assez homogènes, souvent à tel point que les langues appartenant à chacun représentent plutôt de simples dialectes d’une seule langue” (1978:187). Boyd thus proposes a conflation of Adamawa 6 (Mbum) with 13 (Bua) and 14 (Kim) into a single division (p. 190). In a (1989) revision, he also adds the language Day to this core within Adamawa (pp. 179–80). Essentially, the Mbum group remains an integral unit in later classifications, although typically subsumed under the higher Adamawa 6/13/14/Day node described here (Bennett 1983, Dieu et Renaud 1983:359 in Elders 2000:10, cp. Mann and Dalby 1987, Boyd 1989, Bright 1992, Grimes 2000, Williamson and Blench 2000:27–8).

In addition to the terms “Mbum” and “Adamawa 6,” several other labels for this lower-level group have been proposed: “Lakka,” and more recently, “Kebi-Sanaga” and “Kebi-Benue.” Boyd (1974:17–8), followed by Ubels and Ubels (1980:1–3), uses the term “Lakka.” However, in a later work (1989) Boyd reverts to the term “Mbum” due to the imprecise and possibly pejorative nature of the term “Lakka.” Later suggestions informally put forward by Boyd (pers. comm. 2004) are “Mbumoid” and “Southwestern.”

Elders (2000:10) has argued that the term “Kebi-Sanaga” would be preferable to “Mbum” since it avoids the confusion caused by a single label (“Mbum”) which applies to both a language family and a member of that family; additionally, it follows the Niger-Congo convention of naming language families after rivers (cf. Williamson 1989:18–20). In a later statement, issued after discussion with other scholars working in the language family, he refines the term as “Kebi-Benue” (Elders 2006). In addition to sharing the stated advantages of “Kebi-Sanaga,” this term is geographically appropriate, since most of the languages in the group fall within the basins of the Kebi and Benue rivers. Finally, it has the appeal of posterity: Mouchet proposed the term “Kabi-Benwe” for a group containing a number of the same languages as the family under discussion as early as 1938 (1.2.2.1). Because of these reasons, the term “Kebi-Benue” has been used in this study.

1.2.2.3 Internal structure of Kebi-Benue

Academic understanding of the genetic relationship among languages of the Kebi-Benue family is still inadequate. Unfortunately, most of the classifications proposed have been impressionistic rather than methodical.

The first major contribution to the internal classification of Kebi-Benue is that of Boyd (1974), who shows a close relationship among many of the languages. Although it does not include the whole group, Boyd’s (1974) classification of Kebi-Benue is unique in that it is the only study in which satisfactory comparative evidence has been provided for a large portion of the group. Although some of the northern Kebi-Benue languages (including Mambay) signalled by Greenberg (1963:9) are absent from Boyd’s classificatory comments, he divides the rest of the group into two divisions: Eastern (“oriental”), which is composed of languages closely related to the major language Mbum, and Western (“occidental”), which accounts for the other languages under investigation. The Eastern languages are further divided into two sub-groups, “type Pandjama” and “type **ndó mbàli**” (1974:17).

The next major attempt at classification of Kebi-Benue is that of Ubels and Ubels (1980). While following Boyd’s general Eastern/Western structure, a number of languages passed over by Boyd (1974) are accounted for. Mundang and Kali are placed in the Western division; the languages of the Eastern division are revised in terms of inventory, names, and internal classification; and several unclassified languages are added (Ubels and Ubels 1980:5). Mambay, however, is once again omitted from the discussion.

Dieu and Renaud (1983:359) alter the internal classification of Kebi-Benue with the addition of a Northern division. Importantly, Mambay is recognized as a Kebi-Benue language and is included in this division along with Tupuri and Mundang. The remainder of Kebi-Benue languages are relegated to a single Southern division.

Although Boyd (1989a) cites Ubels and Ubels (1980) as his primary authority, his classification diverges from theirs in some respects. He splits the Kebi-Benue family into three divisions: Northern, Central and Southern. Boyd’s Northern division accounts for the languages found in Dieu and Renaud’s (1983:359) new Northern division, but differs

in that it subsumes the remainder of Ubels and Ubels' Western languages: Dama, Galke (Ndai)/Pormi, and Kali. His Central and Southern divisions correspond to the two branches of Ubels and Ubels' (1980) Eastern division, but in contrast are seen as primary divisions within Kebi-Benue. Boyd's (1989a) resulting classification is thus as follows:

- A. Northern
 - 1. Tupuri, Mundang, Mambay
 - 2. Dama, Galke (Ndái)/Pormi, Kali
- B. Central
 - 1. Koh [Kuo], Sakpu
 - 2. Karang, Pana, Njak Mbai, Ngumi, Kãrẽ
- C. Southern: Mbum, Mbere, Kpere ~ Kepere

Unclassified languages: Pondo, Gonge, Tale, Dek

Stefan Elders (2000:8–9) accepts this classification of Kebi-Benue for the most part, but makes the important observation that Kpam/Mono has been accidentally (“fortuitement”) omitted and places it in along with Mundang as a separate node of Kebi-Benue’s first Northern group (Tupuri-Mundang-Mambay).

Elders (2006) provides a comprehensive overview of issues in the classification of the Kebi-Benue group. In addition to cataloguing research which has been done in the languages, a history of classification of Kebi-Benue is given and a number of corrections of and additions to Boyd's (1989a) inventory are offered. Importantly, Gikaw is added and assigned to the same subgroup as Kpam/Mono, and Man and Tali (Tale) are included in the Southern division (but cf. Davis and Seguin 1990:33–4).

Final modifications accepted in the present study are the placement of Gonge as a variety of Njak Mbay, and Pondo as a variety of Pana (Davis and Seguin 1990:35, cf. Elders 2006). Considering the discussion in the present section and the sources to which it refers, the following provisional classification of Kebi-Benue is offered:

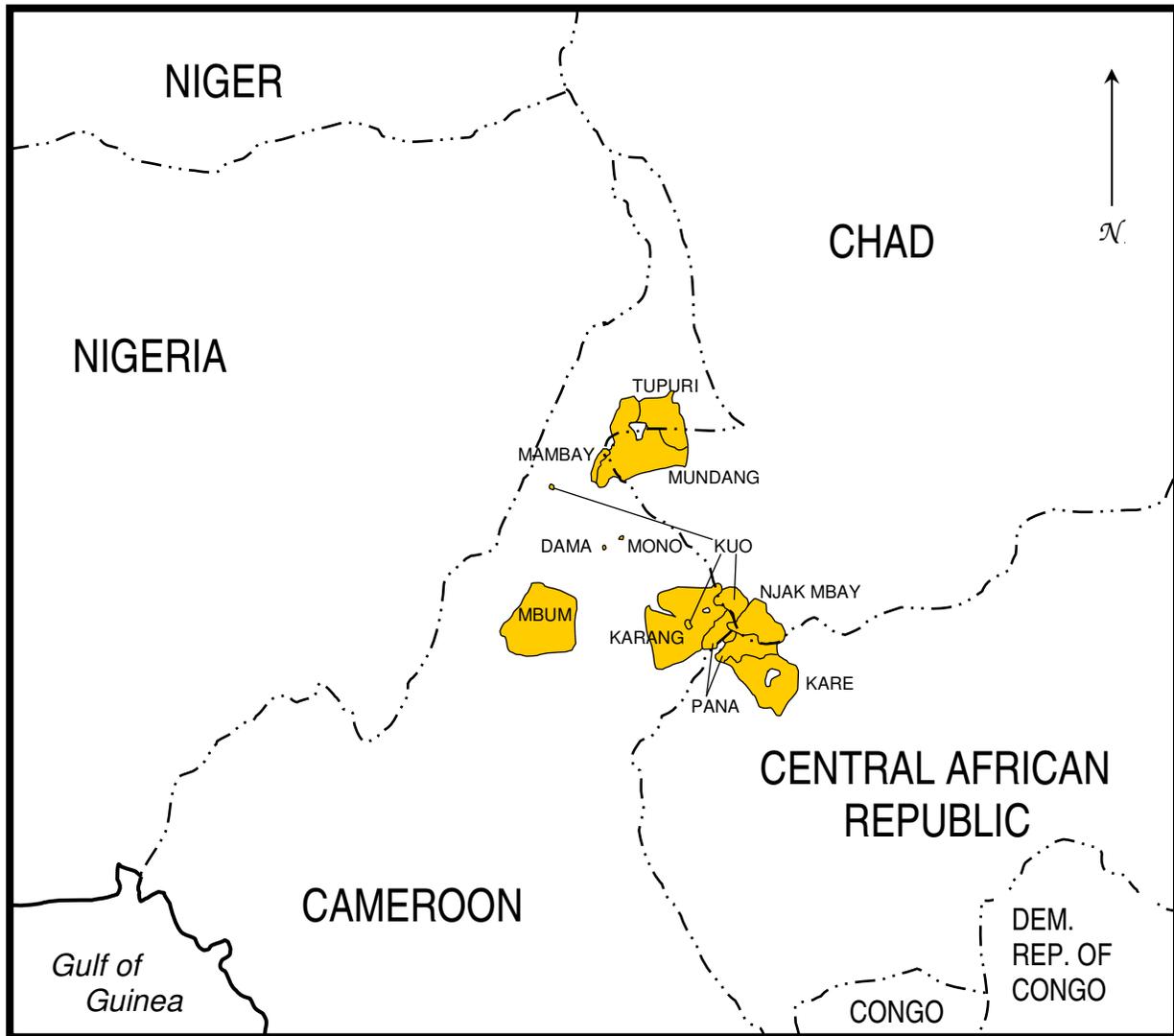
Figure 3: Classification of Kebi-Benue

- | |
|--|
| <ul style="list-style-type: none"> I. Northern <ul style="list-style-type: none"> A. Tupuri B. Mundang, Kpam/Mono, Gikaw C. Mambay II. Southern <ul style="list-style-type: none"> A. Dama, Galke (Ndai)/Pormi, Kali B. 1. Mbum, Mbere, Man, Kpere <ul style="list-style-type: none"> 2. a. Kuo, Sakpu b. Karang, Pana/Pondo, Njak Mbai/Gonge, Ngumi, Kare, Tali <p>Unclassified language: Dek</p> |
|--|

(based on Boyd 1989a, Elders 2000, 2006 and Davis and Seguin 1990)

Kebi-Benue languages whose location is specified in the sources consulted are shown in Figure 4.

Figure 4: The Kebi-Benue languages



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(based on Boyd 1989a and Grimes 2000)

1.2.2.4 Controversy over Mambay's position within Kebi-Benue

Notwithstanding a widespread acceptance of the Kebi-Benue group, the status of Mambay within this group has been questioned on several occasions. While such perspectives do not reflect the thrust of the comparative literature in general (1.2.2.3), they are maintained here as residue since all arguments for Mambay's position have up to this point been supported with little data.

Samarin (1971) attributes Mambay's categorization within Kebi-Benue to undue geographical considerations and recommends a revision. He states:

Fali, Mangbei and Mundang, although not at all closely related, are all found in the same geographical area.... On the basis of his own linguistic observations, de Waard (pers. comm.) supports the integrity of this [Kebi-Benue] group with the exception of Mangbei. Since Stennes (pers. comm.) considers Mangbei to be closer to Fali (Group 9) [*sic*: Fali is Greenberg's Group 11] than it is to Mundang of this group, it would seem that Mangbei may indeed have to be excluded. (217)

Hagège (1981) supports the view that Mambay should be excluded from the Kebi-Benue group. Although Hagège makes reference to “une information complémentaire,” he does not provide evidence for this decision; he states simply that Mambay is too different from the other languages of the Kebi-Benue group to be attached to it (1981:4).

Bennett (1983:33, 42) implicitly acknowledges this position by calling the Kebi-Benue group “Mangbei-Mbum,” but Mambay is not investigated as part of his sample for classification.

Based on a bare 10% apparent lexical similarity (among 227 words) between Mambay and Mundang, Hamm (2001:6, 10) concludes that while Mambay may belong to the Kebi-Benue group, it is likely that it should be excluded from the Tupuri-Mundang-Mambay subgroup.

In contrast to these sources, and in keeping with other classifications starting with Westermann (1952; see 1.2.2.1–1.2.2.3), Boyd (1989a) accepts that Mambay belongs to the Northern division of the Kebi-Benue group. Reflecting on his previous comparative work in the Adamawa languages (1974, 1978a), he responds skeptically to the exclusion of Mambay from the Kebi-Benue group, claiming that no evidence has been presented to support such a claim:

A doubt was raised about the classification of Mangbai by Samarin (1971) for reasons that are unclear. Early word lists published by Strümpell (1910) and Lukas (1937) reveal a clearly, if distantly, related language. Eguchi's (1971) publication confirms this impression. (185)

Boyd's (1989a) resulting classification presents Mambay within the Northern division of Kebi-Benue. Elders (2000, 2006) tentatively reiterates this position.

Given these hesitations, an in-depth comparison of Mambay with other members of the Northern division of Kebi-Benue is needed to clarify the relationship among these languages.

1.2.3 Sociolinguistic situation

In the following subsections, three topics are addressed: multilingualism (1.2.3.1), domains of use of Mambay (1.2.3.2), and the dialect situation (1.2.3.3). While some of the information is based on Hamm's (2001) sociolinguistic survey, these observations have been weighed in the light of field research for the present study, and additional observations have been incorporated.

1.2.3.1 Multilingualism

Mambay is situated in the north-central African linguistic “core,” at the crossroads of three linguistic phyla (Niger-Congo, Afro-Asiatic and Nilo-Saharan) and host to myriad sub-families. While genetic diversity is high, contact among languages impacts their composition to a remarkable degree (Thomas 1972, Greenberg 1983:4).

Most Mambay speakers are proficient in at least one other language. The most common languages of multilingualism are (in order of decreasing frequency) Fulfulde (the language of the Fulbe), French and Mundang. Proficiency in Hausa and Arabic, two other languages of multilingualism, is limited to a small minority of men (Hamm 2001:12).

In the Mambay language area, as throughout most of Northern Cameroon, the dominance of Fulfulde is an inescapable part of the sociolinguistic equilibrium. This dominance is the result of a century and a half of Fulbe hegemony (1.1.3.2–1.1.3.4); it has steadily increased among the Mambay, with the possible exception of the last decade, since the ethnic community has begun to show interest in the preservation of their language (1.2.3.2). Even in interethnic encounters involving groups other than Fulbe, Fulfulde is almost always used as a language of wider communication.

Proficiency in French is, unsurprisingly, correlated to level of education in the French-language school systems of Cameroon and Chad. Because Mambay men have, on average, a higher level of education than women, bilingualism in French is generally limited to men (Hamm 2001:12–3).

Interestingly, proficiency in additional languages is also correlated to religious adherence. The Mambay view Fulfulde as an Islamic language, and while Arabic is used for prayer, imams in the area use Fulfulde for religious teaching; use of Mambay (or any language other than Arabic or Fulfulde) is discouraged for Muslims in religious contexts. Because of this, Mambay who are Muslim tend to be more proficient in Fulfulde than those who are Christian (Hamm 2001:11–2).

In contrast, Mambay who consider themselves Christian (particularly those who are protestant) generally have a higher level of proficiency in Mundang than those who are Muslim. This is particularly true of Mambay Christians living on the Chad side of the border because until recently, Mundang was the primary language used there in Christian celebrations.

Finally, geographic proximity to other language areas is related to multilingualism: proficiency in Mundang is more common in Chad, where the Mambay and Mundang language areas are adjacent to one another (Hamm 2001:12). Still, although Grimes (2000a:68) states that Mambay “speakers are reported to understand Mundang,” Hamm demonstrates that even among the Mambay population in Chad, average proficiency in Mundang is low (2001:12).

1.2.3.2 Domains of use of Mambay

As the previous section indicates, languages other than Mambay are used primarily in situations where members of other ethnic groups are present, and in domains where written languages are used.

Among Mambay speakers, the only place where another language is used in an oral domain is in conversation in and around the mosque; until recently, only Fulfulde has been permitted (Moussa Taw, pers. comm. 2005/6).

Recently, the use of Mambay has expanded into several new domains: religious services and conversation, radio and writing. Changes in language use in religious services and conversation are addressed in the previous section (1.2.3.1). As concerns radio, COLAMA (Comité de Langue Mambay) has sponsored a weekly radio program in Mambay since mid-2005.

However, the most important expansion of Mambay has been the development of a writing system (see 1.3.3). As has been the case for other ethnic groups in the area, it has opened a major avenue for the Mambay to assert themselves as a people, and has acted as a catalyst for the expansion of the other domains mentioned here.

To date, numerous written materials have appeared in Mambay (transcriptions for titles in the lists below are given as they appear on the materials). The first publication in Mambay was a probably a catechism and prayer service, which the Catholic Church produced. A recent revision of the prayer service has been reproduced by COLAMA in conjunction with the Catholic Church and SIL.

Catechisme ma dag ti Mambay [Mambay catechism]

Zimfinu geh Badazi [Sunday prayer service]

On its own, COLAMA has published a calendar, and for the past few years has regularly produced schedules, reports and minutes for language committee meetings.

Oral texts transcribed by COLAMA in conjunction with SIL in the context of narrative discourse workshops, named with their oral sources, are as follows:

Adoum Kami:

Sahna [A prayer]

Bégui Démas:

Zooga pazi kohmna [Conference of the birds]

Kami Philippe Daouda:

Namza kohmzi [Conference of the animals]

Koué Agabus:

Kaa wji yo pale ka keti kpargile ma sigro na ? [*Why is it that the sky has become distant from the earth?*]

Koué Lazare Bessoum:

Gogra ma nahurdenge [The bee and the wasp]

Kwe Lazar [A story about Koué Lazare]

Kwe Nathaniel:

Asyaṅmiya [It-doesn't-concern-me]

Nasah [A question]

Paa fugzo ma sa'nni ee [The cotton farmer and his commerce]

Oussoumanou Bouba:

Big tivin rama [The blind woman's child]

Geeri nii si'la ma gyah [The north wind and the sun]

Hurtigohm [The locust]

Kaga ma liba [The chicken and the guineafowl]

Mu kyahri laa kyah, mú ku'l gbahna [You want to eat fish, so learn to fish!]

Nahrā [The star]

Natu' [Proverbs]

Taw Namuura [Taw Namuura] (with Kwe Nathaniel)

Tawso yah gwaare [Tawso took the sickle]

Wahwah [Hubbub]

Yih Mambay [The name "Mambay"]

Saadu Kami Taw:

Dag du'lo [The sacred enclosure] (with Younoussa Wouri)

Saadu Kami Taw [Autobiography of Saadu Kami Taw]

Younoussa Wouri:

Mi kyah sehro [What I desire for you]

Five of the oral texts have been selected for analysis; these texts appear in at the end of this study.

Editions published by COLAMA in conjunction with the Église des Frères Luthériennes include a hymnbook and a pre-primer.

Chio-hi'in Siketi ma-dag tiMambai [Songs to worship God in Mambay]

Ku'ul de'e igga ma dag ti Mambai [Learning to write things in Mambay]

Works which have been published or are being prepared for publication in Mambay by COLAMA in conjunction with SIL are as follows:

Abeseder twa ma dag ti Mambay [A new alphabet chart in Mambay]
Ig nii seh paa tu'n ku'l daga yag tii naa izire keh iga ma dag bin
 [Resource for teachers of those who are literate in another language]
La' inaa koozi Yeeso [This is how Jesus was born]
Mah ro'ra ma dag ti Mambay [Mambay dictionary]
Ná ku'l keh iga ma dag ti Mambay [Let's learn to write in Mambay]
Naga, mú nu ga! Dehmtere ku'lni ɓurni dag ti Mambay [Naga, don't
 sleep! A book for learning to read the Mambay language]
Namzi sigri ti Mambay [Animals of the land of the Mambay]
Dehmtere ku'lni ɓurni dag ti Mambay 2 [A book for learning to read the
 Mambay language, part 2]

1.2.3.3 Dialect situation

There is little linguistic variation among varieties of Mambay, and the variation that exists does not significantly impede comprehension between speakers of different varieties (Hamm 2001:9).

Three main dialect areas, which constitute links in a modest continuum, have been identified. Varieties south of the Mayo Kebbi are at one end of the continuum, and those in Chad, which are in the north-eastern part of the language area, are at the other end. Varieties in the north-western section of the language area, situated north of the Mayo Kebbi in Cameroon, are ambivalent in their affinities to the dialects at the ends of the continuum. 20th-century migrations have disrupted this neat distribution, so that two of the villages north of the Mayo Kebbi (Bisooli~Bissolé and Kaaguma~Kagouma) speak a “southern” dialect, and a village south of the river (Kaaku'~Kakou) speaks a “northern” dialect. According to some sources, the variety spoken on the south side of Mambay Mountain, from Pyahga (Piaga) to Lam, constitutes an additional dialect area. However, it has not been possible to gather data from this variety.

Most of the dialect differences are lexical, and are often limited to tone, nasality or a single segment. In the database, these differences affect only about 1% of the lexicon. A representative selection of attested variations grouped by dialect area is given in Figure 5 (see following page):

Figure 5: Lexical variation among Mambay dialects

	southern	northern (Cameroon)	northern (Chad)
eight	fwàrnáǵà	fwàrnáǵà	fwàrnâh
soldier	ǵáhlbú	ǵáhlbú	ǵáhlbó
money	kóbò	kóbò	kóbò
giant rat	màà-rààrà	màà-rààrà	màà-rààrà
weakness	tì-dúgrì	tì-dúgrì	tà-dúgrì
with (adv.)	mà-gèn	mà-gèn	mà-gèé
up to, until	háá	háá ~ háǵ	háǵ
knock over	fwàr	fwàr ~ fòr	fèr
walk (v.n.)	té'là	té'là ~ dá'là	sé'là ~ dá'là
our (incl.)	?ánzá	?ánzyá	?ánzyá
impatient	fǵhw	fǵy	fǵy
give	híí	hǵí	hǵí
learning	kúǵgó	kúǵvó	kúǵvó
green monkey	kpùm káà kpèèǵá	kpùm pùǵá	kpùm pùǵá
water turtle	lǵàngǵá	lǵàngǵá	lǵàngǵá
star	nǵhrà	rǵhnà	rǵhnà

In addition to lexical variants, two regionally defined phonological differences have been identified. The most important difference concerns the inventory of nasalized vowels. While the other dialects exhibit three peripheral nasalized vowel positions **ĩ ǵ ǹ** (2.2.1, 3.1), the dialect in Chad also allows nasalized mid vowels, at least on the surface. This shows up in the linked forms of **yǵX-** and **wǵX-**final nouns (5.2.2.2.2):

	default form, all dialects	linked form, Chad dialect	linked form, other dialects
fish	kyǵh	kǵh	kǵh
wink (n.)	nà-ryǵà	nà-rǵè	nà-rǵì
cricket sp.	nà-syǵ'	nà-sǵ'	nà-sǵ'
hole, den	nwǵ'	nǵ'	nǵ'
fool	rwǵà	rǵò	rǵù
bracelet	twǵh	tǵh	tǵh

The Chad dialect's expanded inventory may reflect the influence of Mundang, which exhibits nasalized vowels in seven positions (Elders 2000:40).

Another conspicuous difference exhibited by the dialect in Chad as against the other dialects is its realization of **s** and **z** as [ʃ] and [ʒ] respectively with the semivowel **y** or, with some speakers, before the high front vowel **ĩ**.

	phonological form, all dialects	phonetic realization, Chad dialect	phonetic realization, other dialects
tree sp.	syáà	[ʃ]áà	[sy]áà
shine	syé	[ʃ]é	[sy]é
song	syóò	[ʃ]óò	[sy]óò
net	zyáà	[ʒ]áà	[zy]áà
jackal	zyâh	[ʒ]âh	[zy]âh
mistake (v.)	zyàgrí	[ʒ]àgrí	[zy]àgrí
crocodile	sígò	[ʃ]ígò	[s]ígò
valley, river	sî	[ʃ]î	[s]î
year	sîrǎ	[ʃ]îrǎ	[s]îrǎ
large hoe	zí'gò	[ʒ]í'gò	[z]í'gò
fish sp.	zîrì	[ʒ]îrì	[z]îrì
gnaw	zìr	[ʒ]ìr	[z]ìr

Because of these differences, Mambay speakers often state that the Mambay in Chad speak with a Mundang accent (local French: *ton*) (Hamm 2001:9). This promotes the prevailing perception (in all dialect areas) that the varieties spoken in Cameroon are “purer” than those spoken in Chad (13). In particular, the variety spoken in Kaakyo’w is esteemed: the historical primacy of Kaakyo’w (see 1.1.3.1) as well as its geographical isolation, which has minimized the influence of other languages, contribute to this opinion.

1.3 Research framework

In this section, the research framework of this study is addressed. The first subsection (1.3.1) outlines the scope of the research and gives an overview of the topics that are addressed in each chapter. The next part (1.3.2) summarizes the organization and process of field research. A final portion (1.3.3) describes the emergence of the standard Mambay orthography and compares it to the phonological orthography used in this study, which is based upon it.

1.3.1 Scope and overview of this study

This study is a description of Mambay as it is spoken today. The variety under investigation is that of the principal collaborator, Oussoumanou Bouba (see 1.3.2) of Kaakyo’w (Katchéo), Cameroon. This variety falls within the dialect spoken by Mambay living south of the Mayo Kebbi (1.2.3.3).

Description revolves around the phonological and morphological structure of the language. Pertinent issues in phonetics are treated within the framework of the phonological system, and topics in syntax, discourse structure and semantics are treated in reference to morphological classes. A number of linguistic theories and sub-theories have been taken into account in the present study. These are, in particular, the structuralist tradition, functional grammar, the generative movement and its progeny

Autosegmental Phonology, Lexical Phonology and Optimality Theory. When appropriate, theoretical insights have been incorporated¹; however, the descriptive focus of the study assumes a minimal amount of theoretical background on the part of the reader.

In this first chapter, the Mambay ethnic group is situated geographically as well as historically. Existing studies on the Mambay language are catalogued, and the classification of the language and its sociolinguistic situation are considered in detail. The final section of this chapter presents the framework and methodology of the study.

The phonology of Mambay is addressed in chapters 2–4. In chapter 2, an overview of the phonology is presented. Contrastive phonological constituents are examined starting with consonants and vowels, and syllable and word structure are treated in turn. A number of interpretive issues are probed; of these, the interpretation of pharyngeal and glottal articulations is the most involved.

Chapter 3 examines the role of nasality in the language. Nasality is shown to be contrastive for vowels as well as consonants, and the determination of its source is often problematic. The distribution and spread of nasality is therefore treated in reference to domains of association, within morphemes as well as across morpheme boundaries.

Chapter 4 is devoted to an analysis of the tone system. The Mambay tone system is depicted as a register tone system with two contrastive levels, High and Low. These levels are organized into seven contrastive tone melodies which may be associated with morphemes. Tonal processes, both lexical and postlexical, are also addressed. In addition, the role of intonational phenomena, which interact with tonal phenomena, is accounted for.

The word classes in the language are dealt with in chapters 5–9. First of all, nouns are described in chapter 5. Of the various classes, nouns show the greatest diversity in attested root structures. Affixational and template morphology is also a significant attribute of nouns: this is evident in the widespread occurrence of prefixation, some instances of which have been lexicalized, and some of which continue to function grammatically. Template morphology, for its part, plays an active role in pluralization and in a pervasive free vs. linked distinction on nouns. The left-headed possessive construction, which is the primary context in which linked forms of nouns are found, is then described in reference to three axes: spontaneous vs. lexicalized, obligatory vs. optional possession, and alienable vs. inalienable possession. Additionally, specific types of nouns and noun-related constructions are considered: participant noun constructions, ideophonic nouns, proper names, compounding and other types of derivation and the

¹ The contribution of Autosegmental Phonology (Leben 1973, Goldsmith 1990) is especially evident in the description of the internal structure of consonants (2.1.5), syllable structure and syllable weight (2.4.2, 2.4.3), nasality (Chapter 3) and tone (Chapter 4); that of Lexical Phonology (Kiparsky 1982, Kenstowicz 1994) is evident in the lexical/postlexical distinction that has informed the description of tone association and tonal processes (4.1–4.3); and the insights of Optimality Theory (Archangeli and Langendoen 1997) have been incorporated in the discussion of constraints on the distribution of nasality (3.1.1, 3.4.1, 3.4.2) and the distribution of vowels in adjectives (8.4.2.1.1).

locative function of nouns are all taken into account. A final section provides an inventory of attested noun phrase types.

Chapter 6, which is concerned with pronouns, is an appropriate transition between chapter 5 on nouns and chapter 7, which is concerned with verbs. While, prototypically, pronouns take the place of nominal referents, they also play an important role in the verbal system, where they bear TAM (tense, aspect and mode) distinctions. The larger part of the chapter is concerned with the basic categories of personal pronouns distinguished in Mambay: subject, object and possessive pronouns. Each of these pronoun types also has emphatic forms produced by various strategies. A final section deals with interrogative pronouns.

Chapter 7 examines verbs. First, canonical morphologically simple stems are examined. This is followed by a discussion of non-canonical stems, most of which are morphologically complex; the most prominent group of non-canonical stems contain verbal extensions. A description of verb word morphology then leads into a discussion of verbal inflection, which is marked on the verb word, subject pronouns and by means of expanded verb forms, including those which incorporate auxiliary verbs and TAM adverbs and particles. A final section describes composite verbal expressions: these are constructions composed of a verb stem recurrently found with another element (noun, prepositional phrase, etc.) in the lexicon.

Chapter 8 deals with two classes of modifiers: adverbs and adjectives. Since ideophones comprise a majority of adverbs as well as adjectives, they are also treated in this chapter as a parallel topic with major implications for both of these word classes. One striking trait of ideophones in Mambay is the existence of several derivational ideophonic templates. Apart from ideophones, directional and TAM adverbs as well as a poorly defined group of non-ideophonic adjectives are addressed.

Chapter 9 brings together three minor word classes, all of which are closed in the lexicon: numerals, demonstratives and prepositions. Numerals in particular are morphologically diverse; a small group of underived numerals is found, but many numerals are derived from other parts of speech, especially nouns.

Chapter 10 serves to introduce the structure of clauses and clause combinations. The section on clause structure, which comes first, deals with constituent order, clause and clause constituent particles and verbless clauses; independent utterances other than clauses are also considered. The section on clause combinations then concentrates on strategies of coordination and subordination, giving special attention to conjunctions and particles.

At the end of this study, a collection of five texts is transcribed and interlinearized. These texts have been selected from a variety of genres—song, proverb, legend (account of origins), and fable—in order to illustrate a range of morphological, syntactic and discourse structures. In addition, there are two appendices: Appendix 1 provides an

inventory of inalienable possession paradigms, and Appendix 2 presents conjugations of verbal inflection as it patterns with contrastive tonal verb classes.

One theme that is recurrently invoked in the description is that of canonicity. Phonological structures from some of the word classes fall between two ends of a continuum: canonical and non-canonical. Canonical structures belong to the homogeneous phonological core of the language and represent the vast majority of structures in the language. However, there are small but persistent groups of marked and highly varied structures in all of the lexically open word classes; and often, non-canonical roots exhibit a cluster of uncommon features. The sections which discuss canonicity reveal that some non-canonical structures, such as nasalized mid vowels (3.1.1), are attested only a handful of times in the data. Words borrowed from other languages usually exhibit the same behaviour as other non-canonical items in the same class (e.g., 5.2.2.3, 7.1.2.3). In later chapters, canonicity is considered in reference to the following topics:

- geminate consonants (2.1.2.7);
- repetition of consonants within a syllable (2.1.2.8);
- distribution of vowels within morphemes (2.2.2.3);
- syllable weight (2.4.3);
- inventory of nasalized vowels (3.1);
- noun CV structure (5.2.1.1) and tone melody (5.1.1.2);
- noun-to-noun derivation with prefixes (5.1.2.3.1);
- linked form (5.2.2.2) and plurality (5.5.1.1) templates;
- verb stem structure (7.1);
- ideophones (8.2; see also 5.11 and 7.1.2.2); and
- prepositions vs. locational nouns (9.3.3).

The Fulfulde examples given in the text have been verified using SIL (2003) and Noye (1974), and Hausa examples are from Abraham and Mai Kano (1949) and Maarten Kossmann (pers. comm. 2007).

1.3.2 Field research

My initial exposure to Mambay was as part of an SIL Chad team that conducted a sociolinguistic survey on Mambay (Hamm 2001) in May 2000. Along with Cameron Hamm and Mbernodji Calvin, I received a warm welcome and introduction to the Mambay language and culture. Aspects of Mambay phonology such as pharyngealization, glottalization and the labial flap were some of the unfamiliar phenomena that whetted my desire to better understand the phonology of the language. In addition, the well-watered plain of the Mayo Kebbi with its lush pastures and orchards groves was a refreshing change from the hotter, drier areas of north-east Chad where we had been working previously (Anonby and Johnson 2001). But the kindness, hospitality and humour of our hosts were, in the end, what drew me back to the Mambay language area.

I was able to return to the Mambay area three and a half years later under a collaborative arrangement among SIL Chad, SIL Cameroon, COLAMA (Comité de Langue Mambay) and MINREST (Ministère de la recherche scientifique et technique) of Cameroon. While most of my time was to be devoted to fieldwork, I was given an opportunity to contribute as a consultant by applying the result of my linguistics research to the development of an orthography as part of a larger language development project (this is described in detail in the following section). Eventually, the scope of my involvement expanded to embrace a number of additional activities.

Much of my commitment to the language development project centred on the facilitation of linguistics and computer courses and workshops for members of COLAMA and, later on, the Bible translation team. This included training on phonetics and orthography, data management, community vocabulary collection and lexicography, transcription of texts, literacy primer construction, narrative discourse and translation. I was also privileged to play a part in the reorganization of COLAMA, which evolved from a church-run Bible translation committee into a non-partisan language committee whose increased repertoire of activities came to represent and serve the Muslim as well as Christian segments of the ethnic group.

Rather than taking away from the contemporaneous investment in fieldwork, involvement in the language development project enriched my awareness of the Mambay language and culture (see Kutsch Lojenga's (1996) discussion of participatory research). In this capacity, I was able to visit most of the larger Mambay villages; happily, these were distributed in all three of the major dialect areas (1.2.3.3). Since all of the language committee's activities were conducted in Mambay (see 1.2.3.2), I was forced to pay close attention to the language, especially at the point when colleagues in the committee felt that it was no longer necessary to translate everything for me because I was beginning to speak and understand the language. In addition, the vocabulary collection efforts of several members of the language committee resulted in a lexicon of almost 2000 items. This lexicon formed an underpinning for the 3450-word vocabulary prepared for the purposes of this study and which will, hopefully, be published in a Mambay dictionary (COLAMA in preparation).

Fieldwork was conducted between October 2003 and February 2006, and interposed by two periods of write-up at Leiden University in the Netherlands: six months in 2004 and three months in 2005. Three principal localities of field research may be distinguished: 1) the Mambay ethnic area, especially Kaakaala and the Mambay quarter of Figuil; 2) the small Mambay community of N'Djaména; and 3) Maroua, where, with reliable electricity, intensive instruction and elicitation sessions were conducted.

A large number of Mambay speakers assisted by providing and collecting data.

The principal collaborator for this study is Oussoumanou Kada Bouba of Kaakyo'w (Katchéo), Bibémi Subdivision, Bénoué Division, North Province, Cameroon. He speaks the dialect on which this study has been primarily based, namely that which is found south of the Mayo Kebbi River (1.2.3.3). Oussoumanou, who is 47 years old, works as a

geotechnical engineer, Bible translator, linguist, and cultivator. He is also a member of COLAMA (Comité de Langue Mambay), and is active as a lay reader for the Catholic community in Kaakyo'w and Bookiré. In addition to helping with hundreds of hours of elicitation, Oussoumanou assisted by collecting vocabulary for a dictionary (COLAMA in preparation), proofreading transcriptions, and helping defining orthographic conventions and linguistic terminology for Mambay (see 1.3.3).

Other collaborators who contributed significantly to this study are acknowledged in the following paragraphs.

Kada Moïse was born in Kaakaala (Kakala), Cameroon, where he still lives. He is the deputy chief of Kaakaala, where he also works as a cultivator and community health care facilitator. Kada hosted our family when we first moved to Kaakaala. He taught us much useful vocabulary, and oriented us to the culture and historical context of the Mambay people.

Sadou Kami Tao was born in Kaalaw (Kalao), Cameroon. He has lived for many years in Figuil, Cameroon, where he worked as a civil servant until his retirement. Sadou recounted and allowed me to record the early history of the Mambay, his own life story and some of the vanishing religious rituals of the Mambay.

Yunusa Wuri was born in Kaagbungni (Kaboni), Chad. He now lives in Figuil, and has worked as a merchant's assistant. Yunusa helped with the translation of numerous texts into French, and collaborated extensively in the production of data for tone analysis.

Titogo Tao Justin is from Kaakaala, although his family is originally from Kaagbungni. He is now located in Figuil, where he has finished his studies and works as a tutor. Tao was the principal resource person using the Chadian dialect of Mambay, and helped with the elicitation of vocabulary.

Kwe Nathaniel was born in Kaagbungni, and continues to live there. He works as a grain merchant and cultivator, and is the coordinator for COLAMA's literacy programme. He provided a number of texts, contributed to vocabulary collection for the dictionary, and was active in the development of the orthography.

Koué Agabus was born in Kaagbungni. Presently, he is a pastor of an EFL (Église des Frères Luthériens) church in Bidé, which is near Bibémi, Cameroon. Koué is a member of the Bible translation team. He was involved in a number of training events, and provided consistent criticism of transcribed texts and COLAMA publications.

Pévina Salomon, originally from Kaakaala and Kaagbungni, is currently studying in a technical training school in N'Djaména. He helped with elicitation for a major initial portion of vocabulary for the dictionary.

Badilou Kada is originally from Kaakaala. He now lives in Figuil, where he works in a cement factory. Badilou who was the main informant from the dialect area north of the

Mayo Kebbi in Cameroon, thoughtfully and enthusiastically answered selected questions on the language over a year-long period.

As the previous list shows, all of the major contributors to the present research were men. The selection of collaborators reflects the choice of COLAMA and, indirectly, cultural considerations since in Mambay culture a respectful distance is observed between the sexes in most social contexts. Despite this shortcoming, numerous smaller selections of data were consistently collected from women in public contexts.

1.3.3 Orthography used in this study

The phonological orthography used in this study is based on the standard Mambay orthography (Anonby 2004a), but has been modified to reflect additional phonological considerations.

The standard orthography reflects the work of many individuals and the collaboration of the Mambay language community as a whole. The first version of the orthography, which appeared in three publications (1995–2000), was designed by COLAMA (Comité de Langue Mambay) based on the orthography of other regional languages and the phonological transcriptions used in Eguchi's (1971) study. Several additional orthographic issues were addressed in consultation with Gravina (2001).

While significant strides had been made toward the development of a standard orthography, a number of issues continued to detract from its utility: these included an incomplete alphabetic inventory, inconsistency, problematic interpretations of ambiguous sequences, lack of tone marking, and variation between dialects (cf. 1.2.3.3). In a series of workshops co-sponsored by SIL and COLAMA, Anonby and members of COLAMA began to address these issues, and conventions set forth in Tadadjeu and Sadembouo's (1984) *Alphabet générale des langues camerounaises* and DAPLAN's (2000) manuscript *Les lettres de l'alphabet national des langues du Tchad* were put into practice. A provisional version of the standard orthography was written up in Anonby (2004a), and a refined version which includes some tone marking is to appear in Anonby and Oussoumanou (2008 forthcoming).

The orthography used in this study is based on the latest version of the standard orthography, but is more phonologically robust. The principal ways in which the two writing systems differ are summarized in Figure 6 on the following page, and examples are provided.

Phonetic transcriptions of Mambay data are given in square brackets; phonetic detail is reserved for realizations of the segments under discussion in a given section. For the most part, the phonetic transcription follows IPA (International Phonetic Association) conventions. Minor divergences from the IPA alphabet are explained in 2.1.1.

Figure 6: Comparison of the standard Mambay orthography with the orthography used in this study

standard Mambay orthography	examples	orthography used in this study	examples
tone marking is limited to aspectual and modal distinctions on subject pronouns	suuzo ‘hair’ ró voro ‘[you (2pl.)] go!’	lexical and grammatical tone are both fully marked	sùùzó ‘hair’ ró vòró ‘[you (2pl.)] go!’
predictable nasality on vowels is unmarked within a syllable	nama ‘animal’ bjiru ‘cobra’	all nasality on vowels is marked	nàmə ‘animal’ bjírù ‘cobra’
morpheme-final CyVV and CwVV sequences are written with a single vowel	zya ‘net’ rwạ ‘fool’	morpheme-final CyVV and CwVV sequences are written with a double vowel	zyáà ‘net’ rwáà ‘fool’
preglottalized nasals are written as implosives followed by a nasalized vowel	ɓạɓạ ‘friend’ ɗạ ‘flow’	preglottalized nasals are demonstrated to be contrastive (2.1.2.3) and are written as such	ʼmáɓạ ‘friend’ ʼnạ ‘flow’
glottalization on vowels and preglottalization on consonants are not orthographically distinct	ku ‘sand’ ʼwahra ‘debt’	glottalization on vowels is marked with a curved apostrophe, and preglottalization on consonants is marked with a straight apostrophe	kû ‘sand’ ʼwàhrá ‘debt’
morpheme-initial glottal stops are unmarked	ahra ‘canoe’ oo ‘braid (v.)’	glottal stops are marked everywhere	?àhrá ‘canoe’ ?óó ‘braid (v.)’
morpheme boundaries within words are unmarked	tivina ‘woman (respect form)’ heezi ‘they climbed’	morpheme boundaries within words are marked	tí-vínà ‘woman (respect form)’ hèè-zí ‘they climbed’
capitalization is used for proper names and at the beginning of sentences	Taw ‘(personal name)’	capitalization is not used	tâw ‘(personal name)’

PHONOLOGICAL STRUCTURE

The Mambay language is characterized by a rich system of phonological structures. In this chapter, consonants and vowels are treated first (2.1 and 2.2). While some of the phonetic phenomena that have been explored in Anonby (2006) are reviewed here, analyses of phonological structures, in particular issues relating to both consonants and vowels (2.3), are pursued in greater detail. These sections are followed by descriptions of syllable structure (2.4) and word structure (2.5). Additional chapters have been devoted to nasality (Chapter 4) and tone (Chapter 5); each of these phenomena represents an involved system which functions in reference to the structures described in the present chapter.

The section on consonants presents an inventory of twenty-nine contrastive consonants in Mambay, with four additional consonants found in borrowed words (2.1.1). The six attested places of articulation (labial, alveolar, palatal, velar, labial-velar and glottal) reflect a system typical of the Niger-Congo phylum in general (Williamson and Blench 2000:37) and the Kebi-Benue languages in particular (Boyd 1974:21, Elders 2006). However, the palatal series in particular is less developed than that which has been described in closely related languages (*ibid.*); contrastive palatal stops, prenasalized stops, fricatives and nasals are all absent in Mambay.

Nine distinct manners of consonant articulation are represented (see the chart in 2.1.1 below). These are, for the most part, the same as those of closely related languages. However, the prenasalized stops found in other Kebi-Benue languages (Boyd 1974:21–2)—albeit on a reduced scale in the Northern group (Elders 2006)—are lacking in words of Mambay origin. Two other conspicuous components of the consonant inventory are a profoundly phonologized labial flap (2.1.8) and a robust glottalic series consisting of eight members, five of which are oral and three of which are nasal. Along with other glottalic segments, the two implosives in the language pattern as sonorants rather than obstruents, since they are sensitive to nasality (2.1.1 below and 3.2; see also Kaye 1981, Creissels 1994:107 and Clements 2000:132).

The distribution of consonants, which is discussed in various syllable and morpheme positions (2.1.2), is followed by an establishment of contrast among members of the inventory (2.1.3). Further sections devoted to consonants regard interpretive issues (2.1.4), internal structure of consonants (2.1.5), phonetic realizations (2.1.6), airstream mechanisms (2.1.7) and the labial flap (2.1.8).

The section on vowels presents a system with five basic units: **i e a o u** (2.2.1). This basic inventory is simpler than those found in most other Kébi-Bénue languages, some of which contain ten basic vowels (Boyd 1974:38–40, 56; Elders 2000:39). In contrast to many other Niger-Congo languages, there is no ATR (advanced tongue root) vowel harmony in Mambay; the additional vowel qualities [ɛ] and [ɔ] are found only as realizations of **e** and **o** in closed syllables (2.2.5). However, the basic vowels in Mambay occur with four other vowel modifications: length, nasalization, glottalization and pharyngealization. In some cases, only a reduced inventory is found with a particular modification. Since several combinations of the vowel modifications are permitted, a total of thirty contrastive vowel qualities are represented. While vowel modifications may have originated as consonants (Boyd 1974:56–7), they have been interpreted as synchronically vocalic in Mambay (2.3.3.2, 2.3.3.3). The existence of pharyngeal articulations in particular is fascinating, since in Africa this phenomenon is for the most part restricted to the Afro-Asiatic languages of the north and north-eastern parts of the continent, and Khoisan languages in the southwest (Clements 2000:128, 139).

The distribution of vowels in the language is presented in 2.2.2. Contrasts between vowels are established in 2.2.3, and interpretive issues relating to vowels (2.2.4) are followed by a discussion of their phonetic realizations (2.2.5).

The section on issues relating to both consonants and vowels first outlines limitations on which consonants and vowels may occur with each other (2.3.1). The establishment of contrast for glottalic sequences across syllable boundaries (2.3.2) is followed by an in-depth examination of possible interpretations for semivowels (2.3.3.1 and 2.3.3.4), pharyngeal articulations (2.3.3.2), and glottalic articulations in syllable rhymes (2.3.3.3). The perplexing behaviour of glottalic articulations in this position is reminiscent of that found in mid 20th-century descriptions of the Oto-Manguean languages of southern Mexico (Aschmann 1946, Pickett 1951, Longacre 1955, Robbins 1961, Pike 1967:387), and a later study on Duru / Yag Dii of north-central Cameroon (Bohnhoff 1976, 1987). While the Mexican studies treat glottalization as the distribution of glottal consonants within syllable nuclei, Bohnhoff assigns this phenomenon to structurally discrete “double vowels.”

The section on syllable structure catalogues the seven attested syllable shapes in the language (2.4.1) and provides a description of syllable structure (2.4.2) and syllable weight (2.4.3). Four noteworthy properties of syllables in Mambay, especially within the context of sub-Saharan African languages are: the requirement that all syllables have an onset; the existence of complex (CC) onsets; syllable codas in which most consonants may be found; and the existence of a number of morphemes containing superheavy CVVC syllables.

The chapter concludes with a section on word structure. The possibilities available to phonological words are discussed in reference to syllable structure and derivational as well as inflectional morphology (2.5).

The phonetic transcription in this chapter is concerned with segmental phonology; details pertaining to nasality and tone are presented more fully in the relevant chapters (4 and 5). In addition, phonetic detail is reserved for realizations of the segments under discussion in a given section.

2.1 Consonants

In the present section, an inventory of consonants is provided (2.1.1). The distribution of consonants in various morpheme and syllable positions (2.1.2) is coupled with a demonstration of contrast among them (2.1.3). Additional topics are interpretive issues (2.1.4), the internal structure of certain consonants (2.1.5), phonetic realizations (2.1.6) and airstream mechanisms (2.1.7). A special section is devoted to a discussion of the labial flap (2.1.8).

2.1.1 Inventory of consonants

The consonant inventory of Mambay, presented in phonological orthography, may be schematized as follows:

		place					
		labial	alveolar	palatal	velar	labial- velar	glottal
obstruents	voiceless stops	p	t		k	kp	(?)
	voiced stops	b	d		g	gb	
	voiceless fricatives	f	s				(h)
	voiced fricatives	v	z				
sonorants	nasal glottalic series	'm	'n		'ŋ		
	nasals	m	n		ŋ		
	flaps and trills	vb	r				
	oral glottalic series	ɸ	ɖ	y		'w	ʔ
	approximants		l	y		w	h

Besides these consonants, which form a core within the inventory, four additional stops **j** **^mb** **ⁿd** **^ŋg** are found in words borrowed from Fulfulde.

Default phonetic realizations of consonants whose orthographic symbolization differs significantly from counterparts in the IPA alphabet are as follows:

- y** preglottalized palatal approximant (IPA [**ʔj**])
- y** palatal approximant (IPA [**j**])

vb	bilabial flap	(IPA [ɸ]; cf. 2.1.8)
j	voiced palatal-alveolar affricate	(IPA [d͡ʒ])

Phonetic realizations are described in greater detail for the consonant inventory as a whole in 2.1.6.

As shown by the chart, consonants are articulated in six different places, and nine manners of articulation are attested. An additional precision regarding place of articulation is that the consonants **ɖ** and **r** are realized with either alveolar or retroflex alveolar articulation depending on their position within a morpheme (2.1.6.2, 2.1.6.4).

Among the nine manners of articulation, a basic division exists between obstruents and sonorants. Only for obstruents, which are represented by stops and fricatives, is a distinction in voicing contrastive (although it is only found in morpheme-initial position; see 2.1.3.2). In addition, obstruents are impervious to the effects of nasality, and block the association of nasality within morphemes (3.2.1, 3.4.2).

Sonorants, in contrast, are generally voiced, and are either nasal or inherently nasalizable (3.2). Although implosives contain a glottalic stop component, they pattern with sonorants rather than obstruents, since they cannot retain their oral quality when nasality is found elsewhere within the same morpheme (3.3.2.1). The glottal stop is placed in the same category based on symmetry, although there is no language-internal phonological evidence that points either way regarding its behaviour in reference to nasality. The patterning of the glottal fricative **h** is also uncertain; it likely patterns as a sonorant, since it does not block the spread of nasality within a morpheme (note however that there is only one example in which the behaviour of nasality in relation to **h** can be observed; cf. 3.4.1), and since it alternates with **y** and **w** in certain morphological contexts (5.2.2.2.1). For this reason, **h** has been classified in the table above as an approximant rather than a fricative.

The obstruent/sonorant identity of the labial flap **vb** cannot be determined with respect to nasality, since it is overwhelmingly found in morpheme-initial position (2.1.2.1), where the blocking of nasal association within morphemes is not testable, and where there is no attested spread of nasality to or from morphemes on the left side; also, there are no morpheme-internal co-occurrences of **vb** and nasality in the data (3.4.1).

While the schematization of sonorants on the consonant chart for the most part reflects a sonority hierarchy, glottalic sonorants and their non-glottalic counterpart have been placed in adjacent rows (see 2.3.3.3.1.1 for further discussion of this phonological pairing).

2.1.2 Distribution

There are limitations on the distribution of consonants related to positions in syllables (2.4) and morphemes (2.5). The following four positions are relevant for Mambay:

1. morpheme-initial onsets (2.1.2.1);
2. non morpheme-initial onsets (2.1.2.2);
3. morpheme-final codas (2.1.2.3); and
4. non morpheme-final codas (2.1.2.4).

Distributional possibilities in consonant sequences are discussed separately for morpheme-initial (2.1.2.5) and morpheme-internal (2.1.2.6) positions. Geminates, which pattern differently than individual consonants in sequences, are treated in 2.1.2.7. All other consonantal distribution patterns that have been observed are considered in 2.1.2.8.

2.1.2.1 Morpheme-initial onsets

Almost all consonants are found in morpheme-initial onsets; only the velar nasals **ŋ** and **'ŋ** are absent. Examples of consonants in this position are as follows:

p	páá	cultivate
b	bàà	grow, harden
t	táá	stir
d	dáá	fight (v.)
k	káh	like, ask, tip over
g	gáà	state of fasting
gb	gbáh	catch, thicken, befit
kp	kpàg	call with the hand
f	fáh	seduce
v	váá	bless
s	sáá	tell, trick, finish
z	zàà	cross (tr.)
'm	'máá	respect (v.)
'n	'náá	stretch
m	màà	give an opinion
n	náá	touch
vb	vbáh	share, divide
r	ráá	spread out
ɓ	ɓáà	tree sp.
ɗ	ɗáá	find, succeed, have
y	yáá	move away
'w	'wáá	split
ʔ	ʔáá	open, lose taste
l	làà	eat
y	yáh	take
w	wáà	fig, fig tree
h	hàà	surround

In words borrowed from Fulfulde, the consonants **j** **^mb** **ⁿd** **^ŋg** are found in this position.

j	jám	good
^mb	^mbây	manioc
ⁿd	ⁿdóò	that (anaphoric demonstrative)
^ŋg	^ŋgàm	because

2.1.2.2 Non morpheme-initial onsets

In syllable onsets in non morpheme-initial position, the following consonants are found:

p/b	zábà	scorpion
t	kètí	sky, life, above
k/g	kágà	chicken
f/v	rájàvà	grass sp.
s/z	bàzá	dancing skirt
'm	tì-gó'mì	wrinkle
'n	ná-bìbù'nà	small bee sp.
m	sámà	pregnancy
n	nà'nà'	maternal uncle
vb	féévbà	pair of twins
r	pàrà	goodness
ɓ	pábà	milk
ɗ	wáɗà	<i>boule</i> with sauce
y	'màyá	fast
l	sàlá	cowrie shell
y	fáyáŋ	light (weight), agile
w	ná-wíwàh	belt made of bells
h	bàhà	ibis sp.

Since oral obstruents (with the marginal exception of **t** and **ɗ**; see 2.1.2.7) show no contrast in non morpheme-initial position, they are paired in the lists in this section, and are written in the phonological orthography using a single symbol, namely that of the voiced counterpart (see 2.1.3.2 for further explanation).

The absence of velar nasals **ŋ** and **'ŋ** in non morpheme-initial onsets parallels their absence in morpheme-initial onsets (2.1.2.1). The labial-velars **kp** and **gb** and the glottal stop **ʔ** are also absent here.

Since other glottalized consonants and semivowels are found here, the absence of **'w** likely reflects its sparse representation in the lexicon rather than a phonological restriction.

The absence of **ɗ** in non morpheme-initial onsets may be relegated to a general historical weakening of **ɗ** to **r** in non morpheme-initial position (Boyd 1974:23); alternatively, it could be viewed as a synchronic neutralization of contrast between members of the pair

d/r. More surprising than the absence of **d** is the presence of **t** in this position in seven words in the data:

ɓàtì	two
gbàrgàtàng	completely
kètí	sky, life, above
sí-kètí	God
tí-kúr-kùùtí	water plant sp.
vbàhtátá	strong and healthy, solid
wátùtáà	salt, sugar

The presence of **t** in this position is in contradiction to the distribution of other obstruents, all of which are voiced; for at least some of the words, this asymmetry may be due to synchronic or historical morphological complexity.

2.1.2.3 Morpheme-final codas

In morpheme-final codas, the following consonants are found:

p/b	ràb	hug
t	kpàt	far
k/g	ɓág	meet, support
f/v	ròv	scald
s/z	gbìrìz	frighteningly
'm	dè'm	comment (v.)
'n	gù'n	accompany
m	ɓám	trample, carve
n	kàn	pass, exceed, abuse
ŋ	láj	move
r	zèr	comb
ɓ	sàɓ	vomit
ɗ	yàɗ	feel, rub
y	tày	sway rhythmically
'w	nà'w	spank
l	sèl	dispute (v.)
y	lèy	groan, crash, order
w	wàhw	bark (v.)

(The pairing and orthographic representation of obstruents, for which there is no voicing contrast in this position, is explained in 2.1.3.2).

Missing from this position are the labial-velars **kp** and **gb**, the glottal consonants **ʔ** and **h**, the preglottalized nasal **'ŋ**, and the labial flap **vb**. The additional lack of **d** in this position is discussed in 2.1.2.2.

The inventory of consonants in morpheme-final codas is surprisingly rich. Two comments relate to this. First, the lexicon reveals that sonorants are much more common in this position than obstruents. Second, some of the consonants appear to have arisen here historically as verbal extensions which have been fused to the verb root (7.2).

2.1.2.4 Non morpheme-final codas

In non morpheme-final codas, the following consonants are found:

p/b	gáhblà	hare
t	kpâtgá	distance
k/g	ná-kógrà	worm
f/v	gbòvvi	wash clothes
s/z	mìzzí	sprinkle
'm	ná-dó'mnà	anus
'n	mù'nrá	moan, groan
'ŋ	sù'ŋgá	razor
m	nà-kêmrá	youthfulness (man's)
n	kàngà	male circumcision
ŋ	kpòŋrú	tibia (of animal)
r	bêrgá	sweetness
ɓ	lóbà	island
ɗ	ɗádrá	sowing
'w	kpé'wrà	melon
l	hàlgá	crab
y	nà-lêyrá	grinding, command
w	gáwrà	savannah

(As mentioned in the preceding section, the pairing and orthographic representation of obstruents, for which there is no voicing contrast in this position, is explained in 2.1.3.2).

As is the case for morpheme-final codas, the consonants **d kp gb vb ? h** are missing in this position (re. the absence of **d**, see 2.1.2.2). In addition, **y'** is not attested. In contrast, **'ŋ** appears in this position even though it is not attested in morpheme-final codas.

For a number of consonants that are attested in non morpheme-final codas, there are significant morphological restrictions in distribution. The consonants **'n n ɗ** are only found in fossilized verbal nouns (5.9.2); **f/v** and **s/z** are only found as part of geminates in ideophonic verbs (2.1.2.7, 7.1.2.2); and **t** is limited to these two morphological contexts.

2.1.2.5 Morpheme-initial consonant sequences

Syllable onsets may be simple or complex (2.4.2). A complex onset, which is always morpheme-initial, contains two C positions (2.4.2). There are distributional limitations on the consonants that may occur in either position. In the second C position, only the semivowels **y** and **w** may be found (the interpretation of **y** and **w** in this position is

defended in 2.3.3.1). As the following list shows, most consonants are attested in the first onset position preceding these semivowels:

p	pyâh	stream, spring	pwáh	wet (v.)
b	byàá	water	bwáà	roan antelope
t	tyáà	fish sp.	twáà	newness
d	—		dwáh	shoot, sting, bud (v)
k	kyáh	ask, love, praise	kwáà	grass
g	gyàà	care for a child	gwàà	rob
kp	kpyáà	leopard	—	
f	fyáà	moon, month, festival	fwáh	wash, bless
v	vyáh	winnow	vwáà	dog
s	syáà	tree sp., bark used for rope	swáh	tree sp.
z	zyáà	net	zwâ'	ancestry
m	myû'	cat	mwî'	smile
n	—		nwâ'	hole, den
'm	—		'mwǎ'	snake sp.
vb	vbyâh	cheek	vbwáh	fog, cloudburst
r	ryáh	curse, mourn	rwáh	anoint liberally
ɓ	ɓyáŋ	growl	—	
ɗ	ɗyóò	grass sp.	ɗwá'	bloom, push aside
l	—		lwàhná	edible plant sp.

Consonants after which neither **y** nor **w** is found within an onset are **gb ŋ 'n 'ŋ y'w ? y w h**. While the absence of **ŋ 'ŋ y'w y w h** in the first onset position is systematic, that of **gb** and **'n** may be due to their modest frequency in the lexicon, since the analogous consonants **kp** as well as **'m** and **n** are found in this context. The absence of **?** is related to the interpretation of preglottalized semivowels presented in 2.1.4.2.

In addition, **y** is not found after **'m** or the alveolar consonants **d n** and **l**; and **w** is not found after the consonants **kp** and **ɓ**, both of which also exhibit a labial articulation.

2.1.2.6 Morpheme-internal consonant sequences

Because of the robust consonant inventory in morpheme-internal onsets (2.1.2.2) and codas (2.1.2.4), many different consonant sequences are attested across syllable boundaries within morphemes. (Geminate consonants are treated separately in 2.1.2.7).

The inventory of consonants in the first position of heterosyllabic consonant sequences is addressed in the section dealing with non morpheme-final codas (2.1.2.4), since the two positions are structurally equivalent in Mambay.

The inventory of consonants found in the second position of heterosyllabic consonant sequences is more restricted than that found in the first position. In addition to **d kp gb ŋ 'ŋ 'w**, which are absent from morpheme-internal onsets, **t, h**, the glottalic consonants **ɓ**

d y 'w 'm 'n and the semivowels **y w** are absent from the second position of morpheme-internal consonant sequences. Only the following consonants are found there:

p/b	kàrbá	lungfish
k/g	hàlgá	crab
f/v	kúdfvò	smoke
s/z	sígzò	middle
m	tàrmá	harmattan, haze
n	márnà	older sibling
vb	lwágvbá	tenderness, youngness
r	ná-kógrà	worm
l	pìrlá	torch, flashlight

Once positional distribution of consonants in heterorganic clusters is taken into consideration, there are few systematic restrictions on the combinations that may be found. Of these constraints, the obligatory sharing of nasality is the most important, and is discussed in 3.4.2. Another important gap concerns the sequences **nr** and **lr**, since elsewhere **l n** and **r** are all frequently attested in both positions of consonant sequences. In contrast, remaining patterns of combinatory possibilities are allowed. For example, even heterorganic nasal-stop sequences, which are cross-linguistically marked, are attested in Mambay:

	fàngá	announcement
	kángà	male circumcision
cf.	đángà	ground squirrel

2.1.2.7 Geminate consonants

Geminate consonants are uncommon, and most of the words in which they are attested are non-canonical (1.3.1). Still, it is basically the high-frequency, phonologically non-complex consonants which are found as geminates; a conspicuous gap in the inventory of geminates is that of glottalic consonants and labial-velars.

Several consonants appear as geminates where they are absent in sequences: **d t** (first and second sequence positions; **d** only in borrowed words) and **y w** (second position; cf. 2.1.2.6).

An exhaustive list of words with geminate consonants is as follows:

p/b	nà-bàbbá	locust sp.
d	?àddá	older female relative (cf. Fulf. <i>adda</i>)
	bèddí	increase (cf. Fulf. <i>bezd-</i>)
	dàddà-yùhrí	bunting (bird sp.) (cf. Fulf. <i>dadda</i> 'grandmother')

t	bìttí nà-túttè tùttí vbìttí	pull away soap pluck unroll (shutters)
k/g	nà-syàggàm	(in nà-syàggàm bàhy ‘electric fish’)
f/v	gbòvví	wash clothes
s/z	gìzzìg mìzzí	with a flop sprinkle
m	?àmmá	but (cf. Arabic <i>ammā</i> ‘but,’ via Fulf. <i>amma</i>)
n	'mánnà kpánnà sànná	truth penis pus
l	nà-kùllá nà-táállá	youthfulness (woman’s) ant sp.
y	?áhyyáà ?àyyéé	oh dear! indeed! (cf. Chadian Arabic <i>ayyē</i> ‘yes’)
w	kpàhwwà ?òwwó	rattling and glittering yes

2.1.2.8 Other distributional patterns

In addition to the distributional constraints on consonants defined by positions in syllables and morphemes (2.1.2.1-2.1.2.7), two other patterns have been observed. First, there are constraints on the shared nasal value of consonants occurring together in syllables and morphemes. This phenomenon is discussed at length in 3.4.

Second, there are only a few instances of morpheme-internal syllables in the data where the same consonant is found in the onset and the coda of a single syllable. Where this does occur, examples are largely limited to non-canonical words (1.3.1) and verb stems which contain synchronically fused verbal extensions (7.2). An exhaustive list of words containing a syllable with the same consonant in onset and coda is as follows:

p/b	nà-bàbbá	locust sp.
t	nà-túttè tùttí	soap pluck
k/g	gàg	prevent, be capable

	góg	jump, fly
	gógrà	bee, flock of birds (cf. góg jump, fly)
	gyáglè	flute
	kàgzàg	with a flop
	kòg	see (VN)
	kyág	hurt
	nà-kógrà	look (n.) (cf. kòg ‘see (VN)’)
	nà-kógrà	fish sp., worm
m	màmbày	Mambay
	nà-màm	opinion
n	nàn	touch (cf. nàṣ ‘touch’)
	nànzà	1&2PL.INDEP
ḍ	ḍàḍ	sow, plant
	ḍàḍrà	sowing (cf. ḍàḍ ‘sow, plant’)
l	làl	eat time after time (cf. làà ‘eat’)
	lòl	crunch, chomp, snack on

While the distribution and frequency of consonants in codas may contribute to this tendency, it does not explain it adequately, since CVC and CCVC syllables with a wide range of coda consonants are extremely common in the lexicon (2.1.2.3, 2.1.2.4, 2.4.1).

No other restrictions on the co-occurrence of non-contiguous consonants within morphemes have been observed.

2.1.3 Contrast

Contrast among oral consonants may be established from the morpheme-initial inventory (2.1.2.1), and contrast between nasal and oral consonants is evident in morpheme-final position (2.1.2.3). Outstanding issues in contrast which call for additional evidence are the inventory of nasals (2.1.3.1) and the limitation of voicing contrast in obstruents (2.1.3.2).

Additional questions involving the interpretation of consonants are addressed in 2.1.4.

2.1.3.1 Contrast among nasals

Since **ŋ** and **'ŋ** are not found in syllable onsets, contrast among nasal consonants must be demonstrated in coda position. The following set of words shows this:

'm	hâ'mgá	bluntness
'n	mînmî'ngá	sterility (soil)
'ŋ	sù'ŋgá	razor

m	fàmgá	announcement
n	kángà	male circumcision
ŋ	dángà	ground squirrel

2.1.3.2 Limitation of voicing contrast in obstruents

Voiced and voiceless oral obstruents contrast in morpheme-initial position (2.1.2.1). However, in non morpheme-initial positions, voicing contrast is almost always absent.

For the obstruent pairs **p/b**, **k/g**, **f/v** and **s/z**, phonetically voiceless obstruents are found in codas, while phonetically voiced counterparts are found in non morpheme-initial onsets. **k/g** is exceptional in that it may be optionally voiced in codas (2.1.6.1), but it is consistent with the other obstruents in that there is no contrast signalled by voicing in this position. In other words, non morpheme-initial obstruents are specified for place of articulation, but not for voicing. Examples of obstruents in each position, along with phonetic realizations, are as follows:

non morpheme-initial onsets:

p/b	zá(p/b)à	[zábà]	scorpion
k/g	ká(k/g)à	[kágà]	chicken
f/v	nù(f/v)à	[núvà]	fat (n.)
s/z	má(s/z)à	[mázà]	first child after remarriage

non morpheme-final codas:

p/b	nà-ré(p/b)là	[nàréplà]	tuber sp.
k/g	pí(k/g)lò	[píklò] ~ [píylò]	bile
f/v	—	—	—
s/z	—	—	—

morpheme-final codas:

p/b	rà(p/b)	[ràpʰ]	hug
k/g	ǂá(k/g)	[ǂákʰ] ~ [ǂáy]	meet, support
f/v	rò(f/v)	[ròf]	scald
s/z	gbìrì(s/z)	[gbìrìs]	frighteningly

When voiced oral obstruents in syllable onsets are reassigned to coda position as a result of syntactic and morphophonological processes, they lose their voicing (2.1.6.1). This is evident in the following possessive constructions (cf. 5.3):

zá(p/b)à	[zábà]	scorpion
zâ(p/b) ?íí	[zâp ?íí]	my scorpion

ká(k/g)à	[kágà]	chicken
kâ(k/g) ?íí	[kâk ?íí] ~ [kây ?íí]	my chicken
nú(f/v)à	[núvà]	fat
nû(f/v) ?íí	[nûf ?íí]	my fat
má(s/z)à	[mázà]	first child after remarriage
mâ(s/z) ?íí	[mâs ?íí]	my first child after remarriage

This phenomenon strengthens the argument that the obstruent pairs do not exhibit contrast non morpheme-initially. If the present discussion is taken into consideration, the resyllabification of the obstruents as coda consonants is sufficient to explain the change in voicing.

Since (with the exception of **t** and **d**) they show no contrast in non morpheme-initial position, oral obstruents are written throughout this study using a single symbol, namely that of the voiced counterpart (which is, as mentioned in the preceding paragraph, devoiced as a result of resyllabification in codas). This is consistent with the standard Mambay orthography (1.3.3).

t and **d** differ from other oral obstruents in three ways. First, it is the voiceless obstruent **t** rather than **d** that is found (albeit uncommonly) in non morpheme-initial onsets (2.1.2.2).

bàtì	two
gbàrgàtàg	completely
wátùtáà	salt, sugar

Second, there is a marginal contrast between the two consonants morpheme-internally when they appear as geminates (2.1.2.7).

t	bìttì	pull away
	ná-túttè	soap
d	?àddá	older female relative (cf. Fulf. <i>adda</i>)
	bèddì	increase (cf. Fulf. <i>bezd-</i>)

Third, and unlike other obstruents, **t** seems to be inherently voiceless, since it causes consonants which follow it to be devoiced (2.1.6.6).

kpâtgá	[kpâtʰká]	distance
kpàtgì	[kpàtʰkì]	become distant

For these reasons, the two consonants are not treated as a set, and in all contexts each consonant retains its own symbol in the phonological orthography.

2.1.4 Issues in consonant interpretation

The phonological status of three consonantal phenomena requires interpretation: that of the glottal stop in morpheme-initial position (2.1.4.1), preglottalized semivowels (2.1.4.2), and palatal and labialized velar nasals (2.1.4.3).

2.1.4.1 The glottal stop in morpheme-initial position

The glottal stop poses interpretive challenges in morpheme-initial position as well as in syllable rhymes. In morpheme-initial position, it is debatable whether or not the glottal stop is a contrastive consonant or whether it is demarcative (that is, a predictable effect of its morphological context); this question is posed in Anonby (2006:224) but is not answered there. In syllable rhymes, the glottal stop could be interpreted as a consonant, a vowel feature, or a feature associated with glottalic consonants that follow vowels. The two issues are related, since positing contrast for the glottal stop in one position would have consequences for the other position. The phonological status of the glottal stop in morpheme-initial position is addressed in the present section, and its status elsewhere is pursued in 2.3.3.3.

The glottal stop is phonetically salient in morpheme-initial position:

ʔáá	[ʔáá]	open, lose taste
ʔìn	[ʔìn]	lift, carry
ʔéé	[ʔéé]	fail, miss
ʔóó	[ʔóó]	braid rope, compress
ʔùl	[ʔùl]	blow

Even at the beginning of utterance-internal morphemes, including those that follow words ending in consonants, it is retained:

ná-ʔáà	[náʔáà]	bean leaves (cf. noun prefix ná- , ʔáà ‘bean’)
ná-ráh-ʔáà	[náráhʔáà]	snake sp. (cf. ná-ráh ‘snake sp.’, ʔáà ‘bean’)
tí-kpâ-kpàr-ʔáà	[tíkpâkpàrʔáà]	wheat ear (bird sp.) (cf. ʔáà ‘bean’)
làà ʔígà	[làà ʔígà]	to eat something (cf. làà ‘eat (VN),’ ʔígà ‘thing’)
kàm ʔígà	[kàm ʔígà]	to weave something (cf. kàm ‘weave (VN),’ ʔígà ‘thing’)
kòg ʔígà	[kòg ʔígà]	to see something (cf. kòg ‘see (VN),’ ʔígà ‘thing’)

There are two interpretive possibilities for the glottal stop: it could arise predictably before vowels in morpheme-initial position, or it could be a contrastive consonant there.

On the one hand, it is not unreasonable to posit the predictable articulation of the glottal stop whenever a morpheme is vowel-initial. Studies of other Kebi-Benue languages have uniformly followed this interpretation (see Elders 2006 for a listing), and the most

important comparative/historical study in this family does not regard the glottal stop as a member of the proto-language's morpheme-initial consonant inventory (Boyd 1974:33).

On the other hand, there are some satisfactory arguments that the glottal stop contrasts with other consonants in morpheme-initial position. The invariable realization of the glottal stop before morpheme-initial vowels, as in the above examples, is one of these indicators. The contrastive value of glottalic articulations elsewhere in the language as part of glottalic consonants (2.1.5) and glottalized vowels (2.2.1) also supports this possibility, and one morphophonological process in which a glottal stop contributes its glottalic feature to a vowel (5.12.1.1) underlines such a phonological relationship. Further, the positing of contrast here would help to address the relatively low incidence of morphemes which would otherwise be considered vowel-initial (about 1% of nouns and 5% of verbs). Finally, and perhaps most importantly, it promotes a simpler inventory of allowable CV shapes (cf. 2.4.1); there is no need to posit several additional V-initial syllables.

Given these factors, the morpheme-initial glottal stop is treated as a consonant in the present study.

2.1.4.2 Preglottalized semivowels

The categorization of phonetically preglottalized semivowels [ʔy] and [ʔw] in syllable onsets also calls for interpretation. Given the interpretation of the glottal stop as contrastive (2.1.4.1), and given that the language permits consonant sequences in morpheme-initial syllable onsets where y or w is the second consonant (2.1.2.5), then two options are available for the interpretation of [ʔy] and [ʔw] onsets: as CC clusters ʔy and ʔw, or as contrastive C units y' (=y) and w'. There is no contrast between these two phonological possibilities in the language, so a single interpretation is appropriate.

Both [ʔy] and [ʔw] are moderately represented in the lexicon; in fact, there are about as many words beginning with these onsets as there are words beginning with [ʔ] followed by a vowel. This lends a small amount of support in favour of a unitary interpretation of [ʔy] and [ʔw], but is not decisive.

The existence of preglottalized stops in syllable codas (2.1.2.3, 2.1.2.4 above) should be a crucial factor in determining their status in morpheme-initial onsets; however, preglottalized stops are also ambiguous in coda position, since they depend on the interpretation of V-glottal-C sequences as vowels followed by a preglottalized consonant (2.3.3.3).

There is, in fact, one substantial problem with an interpretation of [ʔy] and [ʔw] as sequences: the occurrence of [ʔy] in a morpheme-internal onset in two lexical items.

'màyá	['màʔyá]	'fast'
ná-dâr-kwéyâ	[náðârkwéʔyà]	'tree sp.'

Since syllables with **y** and **w** as the second onset consonant are always morpheme-initial (and never morpheme-internal), a unitary interpretation of these onsets as **ỵ** is necessary here. The parallel interpretation of **ỵ** as a single C in morpheme-initial position is a natural consequence of this assessment.

In order to maintain symmetry with **ỵ**, it is appropriate to interpret [**?w**] as the unit consonant 'w. The resulting analysis of **ỵ** and 'w as contrastive units accords well with descriptions of several other Kébi-Benue languages (Ubels and Ubels 1984:20; Elders 1995:1, 2000:23, 2006; see also ambiguous data in Ruelland 1992:30).

2.1.4.3 Palatal and labialized velar nasals

The consonant chart given in 2.1.1 shows that palatal and labialized velar nasals **ɲ** and **ɲʷ** are not included in the inventory of contrastive consonants. The same is true for the glottalized counterparts of these nasals. In reality, these gaps in the inventory result from the interpretation of phonetic palatal and labialized velar nasals as nasalized semivowels. The reasoning behind this interpretation is given in the present section first for palatal nasals, and then for labialized velar nasals.

Phonetically, the palatal nasal [**ɲ**] and the preglottalized palatal nasal [**?ɲ**] are found in a subset of onset and coda positions. In utterance-initial position and following morphemes that end in an oral segment, both [**ɲ**] and [**?ɲ**] are found. However, when they follow nasal or nasalized segments within an utterance, they are realized as nasalized semivowels [**ỹ**] and [**?ỹ**] respectively (cf. 3.3.2).

[ɲ]âh	stalk (n.)
sââ [ỹ]âh	in the stalk
[?ɲ]âh	name
sââ [?ỹ]âh	in the name

Elsewhere, morphophonological evidence shows that the palatal semivowel **y** is nasalized and pronounced as [**ỹ**] when it is found next to a nasalized vowel in the same phonological word (3.3.2.2, 3.4.3).

pââ	-í	→	pâ[ỹ]
man	1SG.POSS.INAL		my father (inal.)
pââ-vââ	-í	→	pââ-vâ[ỹ]
husband	1SG.POSS.INAL		my husband (inal.)
mîí	kúú	=yá	→ mîí kúú = [ỹ]á
1SG:PFV.NEG	grab:PFV	NEG	I did not grab

cf. **mǐ́** **kùù** = **yá** → **mǐ́ kùù = yá**
 1SG:PFV.NEG gather.firewood:PFV NEG I did not gather firewood

This causes difficulty for the interpretation of a nasal(ized) palatal consonant after a nasalized vowel: it could either be a palatal nasal **ɲ** which is structurally equivalent to **y** before nasal vowels; it could be a **ny** sequence, since such sequences are found with other consonants; or it could be **y** underlyingly. There is no contrast between the three structures in any position.

[**ɲ**] is also found in syllable codas, but its occurrence there gives no additional support to the existence of **ɲ** as a contrastive consonant, since it is explainable as a realization of **ŋ** after front vowels (2.1.6.7).

	bǐŋ	[bǐɲ]	forest
	bèlèŋ	[bèlèɲ]	eagle sp.
cf.	sǎŋ	[sǎɲ]	ill omen
	tì-tôŋ	[tìtôɲ]	remains
	kpúŋ	[kpúɲ]	hill

Similar issues relate to the labialized velar nasals in the data. Parallel to [**ɲ**] and [**ʔɲ**], both [**ɲ^w**] and [**ʔɲ^w**] are found in utterance-initial position and following morphemes that end in an oral segment. When [**ɲ^w**] and [**ʔɲ^w**] are found after nasal or nasalized segments within an utterance, they too are realized as approximants:

	[ɲ^w]áà	nose
	sáà [w̃]áà	in the nose
	[ʔɲ^w]íh[ʔw̃]íh	achy and restless

Theoretically, the underlying identity of the labialized velar nasals [**ɲ^w**] [**ʔɲ^w**] and nasalized labial-velars [**w̃**] [**ʔw̃**] in these words could be any of the following pairs of contrastive consonants or consonant sequences:

1. **ɲ^w / ʔɲ^w**
2. **ɲw / ʔɲw**
3. **nw / ʔnw**
4. **mw / ʔmw**
5. **ɲm / ʔɲm**
6. **w / ʔw**

The first possibility (**ɲ^w / ʔɲ^w**) is rejected because labialization is not a feature of the consonant system (2.1.1). The consonant sequences **ɲw** and **'ɲw** in (2) are not viable alternatives, since a more basic consonant **ɲ** is never found in onset position without labialization (2.1.2.1, 2.1.2.2). The sequences in (3) and (4) **nw mw 'mw** (and **'nw** by

extension) should be ruled out because they contrast with [ŋ^w] in morpheme-initial position, as shown by the following words:

[ŋ ^w]áà	nose
nwǎh	wound (n.)
mwì'	smile
'mwǎ'	snake sp.

The possibility that the pair **ŋm** / **?ŋm** (6) underlies the realizations [ŋ^w] [ʔŋ^w] as well as [w̃] [ʔw̃] should be regarded with caution because there are no examples of underlyingly nasal consonants in the language which lose their oral closure (resulting in realizations like [w̃] [ʔw̃]) any environment.

While (in contrast to **y**) there is no morphophonological evidence that proves that [w̃] is a realization of **w** in a nasal context, there is one morphophonological process in which [ŋ^w] ~ [w̃] behaves like the consonant **w**: namely, when **w** is found before a back vowel as the result of its morphological context, it alternates with **h** as follows (see 5.2.2.2.1):

[ŋ ^w]áà	+	ʔíí	→	húy ʔíí
chief		1SG.POSS		my chief
wáà	+	ʔíí	→	hóò ʔíí
fig		1SG.POSS		my fig

Since this process reveals that [ŋ^w] is subject to the same constraints as **w** in a particular context, it is not unlikely that [ŋ^w] is **w** underlyingly. Intuitively, the transformation of [ŋ^w] into **h** in this process seems less plausible than that of **w** into **h**, since between [ŋ^w] and **h** an additional difference in nasal value needs to be accounted for.

In the end, arguments for the contrastive status of the nasals **ɲ** 'ɲ ŋ^w and 'ŋ^w are not convincing. Such a decision would add complexity to the consonant inventory without simplifying the analysis of other aspects of the phonology. Additionally, the distinction between these nasals and their nasalized semivowel counterparts (shown above) would remain unclear. Nor is the alternative analysis of these segments as the sequences **ny** 'ny ŋw and 'ŋw a viable possibility for the consonant sequences **ŋw** and 'ŋw because, as stated earlier, **ɲ** and 'ŋ are never found in onset position without labialization. The limitation of this interpretation to **ny** and 'ny would therefore introduce asymmetry into the system by treating palatal semivowels differently than labial-velar semivowels in reference to nasality. In contrast, an analysis where nasalized semivowels are preferred can account for all aspects of the data. For these reasons, palatal and labialized velar nasals [ɲ] and [ŋ^w] have been excluded from the consonant inventory in the present study, and have been analyzed as realizations of palatal and labial-velar semivowels **y** and **w** in the context of nasality.

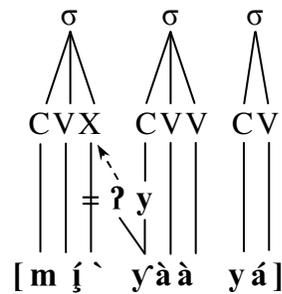
2.1.5 Internal structure of consonants

Two categories of consonants, both of which employ complex articulations, show signs of internal structure: glottalic consonants **ɓ ɗ ʎ 'w 'm 'n 'ŋ**, which exhibit a secondary glottalic articulation (2.1.5.1), and labial-velar stops **kp gb**, which exhibit double articulation (2.1.5.2). The labial-velar approximant **w**, which has no stop quality, does not pattern with these consonants.

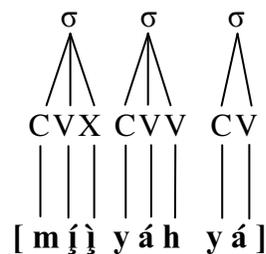
2.1.5.1 Glottalic consonants

There are four indicators of internal complexity for glottalic consonants, that is, consonants with secondary glottalic articulation **'m 'n 'ŋ ɓ ɗ ʎ 'w**. Three of these indicators are distributional and the other is based on morphophonological evidence. Morpheme-internally, these consonants are never found after long vowels (2.3.1.2), nor are they found in the second position of a morpheme-internal consonant cluster (2.1.2.6). Additionally, they are never geminated (2.1.2.7). Finally, when a glottalic consonant is found morpheme-initially, any long vowel which precedes it in the utterance is phonetically shortened. This suggests that, given an appropriate environment, the glottalic element of the preglottalized segment associates with the coda position of the previous syllable.

m̩ yàà yá
 1SG:NONPFV.NEG finish:FUT NEG
I will not finish



cf. **m̩ yáh yá**
 1SG:NONPFV.NEG take:FUT NEG
I will not take



2.1.5.2 Labial-velars

The evidence for the complex internal structure of doubly-articulated labial-velar stops **kp gb** is weaker, since their relegation to morpheme-initial position (2.1.2.1) limits the contexts in which they may display internal complexity. However, consider the following example:

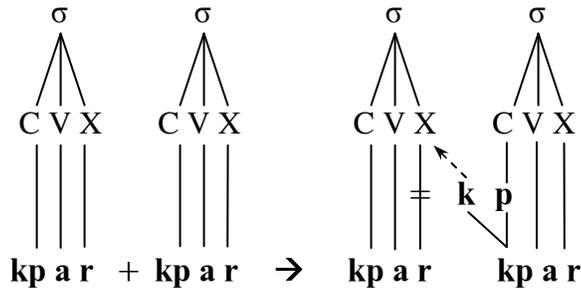
tí-kpâ-kpàr-ʔáà wheatear (bird sp.) (cf. **ʔáà** bean)

This example is ideophonic (5.11, 8.2) and probably shows reduplication (5.11.2) of the syllable **kpàr**. There are two difficulties with this word. First, it shows a pattern of segmental reduplication that differs from other patterns in the lexicon, such as those found in the following comparable words:

lèŋ-léŋ-gérmù kingfisher sp. (cf. **gérmù** women)
tí-kéé-kèèrú firefly (cf. **kéè** brilliant, intense (red))

The reduplication of the onset and nucleus of **kpàr** rather than the whole syllable is surprising, since there are no other examples where this template is applied (reduplication of whole syllable rhymes is, in contrast, common; see 8.4.2.1). However, the fact that **kp** does not occur in non morpheme-initial position elsewhere in the data suggests that there is indeed a morpheme boundary before both occurrences of **kp** in **tí-kpâ-kpàr-ʔáà**, attributable to a morphological phenomenon such as reduplication. The question remains, then, as to why the **r** of **kpàr** is not reduplicated along with the rest of the syllable.

A promising resolution to this puzzle is the recognition of internal structural complexity for the labial-velar **kp** in Mambay, as has been described in other languages (Clements and Hume 1995; Kutsch Lojenga 1994:47ff.). When **kp** is viewed as complex, it helps explain the obstruction to the reduplication of **r** along with the rest of the syllable **kpàr**: the coda position in the preceding syllable is thus dominated by the **k** portion of the **kp** from the second syllable. This situation may be represented as follows:



attested in: **tí-kpâ-kpàr-ʔáà** ‘wheatear (bird sp.)’

Although no similar evidence has been observed for **gb**, there is no reason to posit an internal structure differing from that of **kp**, since a double articulation is characteristic of both consonants.

2.1.6 Phonetic realizations

The phonetic realization of some consonants may be predicted with reference to the consonant chart (2.1.1). However, as detailed in Anonby (2006), a number of consonants exhibit more than one realization based on their position in syllables and phonological

phrases or due to the articulatory features of adjoining segments. These consonants, which represent a large part of the consonant inventory, are:

1. stops,
2. implosives,
3. preglottalized semivowels in onsets,
4. the central approximant **r**,
5. the semivowels **y** and **w**,
6. consonants which follow **t**,
7. the nasal **ŋ**,
8. glottalic consonants in codas, and
9. oral sonorants affected by nasality.

While the first seven topics are addressed here, glottalic consonants in codas are described in the section dealing with glottalization in syllable rhymes (2.3.3.3.1), and oral sonorants affected by nasality are discussed in the chapter on nasality (3.3.2).

2.1.6.1 Realizations of stops in syllable codas

Typically, in addition to being voiceless (see 2.1.3.2), the three oral stops which are found in codas (**p/b**, **t**, and **k/g**; see 2.1.2.3, 2.1.2.4) are unreleased. This is the case utterance-finally as well as utterance-internally.

	utterance-finally			utterance-internally		
p/b	ràb	[ràp̚]	hug	nà-bàhbgá	[nàbàhp̚gá]	acacia sp.
t	kpàt	[kpàt̚]	far	kpàtgá	[kpàt̚ká]	distance
k/g	lèg	[lèk̚]	suck	nà-nìg.bó	[nànìk̚bó]	civet

(The pairing and orthographic representation of obstruents, for which voicing contrast is neutralized in this position, is explained in 2.1.3.2; the voiceless realization of the velar stop in **kpàtgá** is accounted for in 2.1.6.6).

Realizations are more varied for the velar stop **k/g** than for the other stops, which are always unreleased. Utterance-finally, **k/g** is realized as an unreleased voiceless velar stop [k̚] after front vowels **i e**, and as an unreleased voiceless uvular stop [q̚] after back vowels **a o u**.

víg	[vík̚]	plug, look longingly
lèg	[lèk̚]	suck
ràg	[ràq̚]	straddle, sling
lóg	[lóg̚]	uproot
rùg	[rùq̚]	pour

In careful speech, the same realizations are also found in utterance-internal codas.

vǐg-nà	[vǐk`nà]	plugging, looking longingly
lêg-nà	[lêk`nà]	sucking
râg-nà	[râq`nà]	straddling, slinging
lǒg-nà	[lǒq`nà]	uprooting
rûg-nà	[rûq`nà]	pouring

In normal and fast speech, however, **k/g** is voiced and softened to [ɣ] or [ʝ] in utterance-internal codas (as in the previous examples, a uvular articulation is found after back vowels). It is optionally realized with an open transition.

vǐg-nà	[vǐɣnà] ~ [vǐɣ ⁱ nà]	plugging, looking longingly
lêg-nà	[lêɣnà] ~ [lêɣ ^e nà]	sucking
râg-nà	[râɣnà] ~ [râɣ ^a nà]	straddling, slinging
lǒg-nà	[lǒɣnà] ~ [lǒɣ ^o nà]	uprooting
rûg-nà	[rûɣnà] ~ [rûɣ ^u nà]	pouring

2.1.6.2 Realizations of **ɓ** and **ɗ**

The implosives **ɓ** and **ɗ** each exhibit several realizations, depending on their position in utterances and syllables.

In utterance-initial position, **ɓ** is pronounced as a voiced bilabial implosive [ɓ], and **ɗ** as a voiced retroflex alveolar implosive [ɗ] (see Welmers 1973:50 as well as Ladefoged and Maddieson 1996:53–5, 82–7 for acoustic characteristics of preglottalized implosives, and Greenberg 1970:129 for comments on retroflexion of alveolar implosives).

ɓám	[ɓám]	trample, carve
ɓúú	[ɓúú]	create, sprout
ɗáj	[ɗáj]	roll along
ɗúú	[ɗúú]	hit

In non utterance-initial onsets, both implosives are preglottalized.

lúɓò	[lú ^ʔ ɓò]	sesame
páɓà	[pá ^ʔ ɓà]	milk
húɗò	[hú ^ʔ ɗò]	death, corpse
wáɗà	[wá ^ʔ ɗà]	<i>boule</i> with sauce

In syllable codas, **ɓ** is realized as an unreleased voiceless preglottalized stop [ʔp̚]. The lack of voicing and release in this realization is parallel to that of oral stops (2.1.6.1). In contrast, **ɗ** is realized as a voiced preglottalized and glottalized lateral approximant [ʔl̥].

sàb	[sà ^ʔ p̣]	vomit (v.)
lóbà	[lò ^ʔ p̣là]	island
yàd	[yà ^ʔ]̣]	feel, rub
bâdǵá	[bâ ^ʔ ǵá]	club (stick)

The effect of syllable position on the realization these consonants is evident in the following possessive constructions (cf. 2.1.3.2):

	pâb ʔíí	[pâ ^ʔ p̣ dùǵú]	their milk
cf.	pábà	[pá ^ʔ bà]	milk
	wâd ʔíí	[wâ ^ʔ]̣ dùǵú]	their <i>boule</i> with sauce
cf.	wáǵà	[wá ^ʔ ǵà]	<i>boule</i> with sauce

2.1.6.3 Realizations of **y** and **w** in syllable onsets

Typically, **y** and **w** are realized as preglottalized semivowels in syllable onsets.

yâh	[^ʔ yâh]	call, invite
wâh	[^ʔ wâh]	tie, decide

(Coda realizations of **y** and **w** are described in the section dealing with glottalization in syllable rhymes; see 2.3.3.3.1.1).

However, when **y** is found before a nasalized and pharyngealized high vowel as a result of morphophonological alternation, the sequence is pronounced as a syllabic nasalized voiced aryepiglottic trill [ʔ̣] (this trill is sometimes non-technically described as epiglottal) with an epiglottal stop [ʔ̣] onset (Anonby 2006:229).

	yîh	[ʔ̣̣̣]	name, call, invitation of ...
	yîh ʔám	[ʔ̣̣̣ ʔám]	your name, call, invitation
cf.	yâh	[^ʔ yâh]	name, call, invitation

Prominent perceptual characteristics of this sequence's articulation include a stop followed by a plainly audible voiced trill whose origin is clearly further back than the oral cavity; this is coupled with the croaking quality associated with pharyngeals. Esling, who emphasizes the epiglottal properties of pharyngeal articulations in general (1996:84), gives a detailed articulatory comparison of the aryepiglottic trill with other pharyngeal and epiglottal articulations (1996, 2002).

2.1.6.4 Realizations of r

Like the implosives **ɓ** and **ɗ** (2.1.6.2), the central approximant **r** has several realizations which correspond to its position in utterances and syllables. In utterance-initial position it is realized as a retroflex alveolar flap [ɽ] or, less commonly, as an alveolar trill [r].

ríí	[ɽíí] ~ [ríí]	carry
ráá	[ɽáá] ~ [ráá]	spread out
ròò	[ɽòò] ~ [ròò]	trick, amuse

In syllable-initial positions within utterances, the realization [ɽ] is found.

zìrì	[zìɽì]	fish sp.
pààrá	[pààɽá]	field, farm
dúùrú	[dúùɽú]	hyrax

In syllable codas, **r** is realized as an alveolar trill [r]. If it is not utterance-final, it may also be realized with an open transition.

bìr	[bìr]	praise, snatch
kàr	[kàr]	put, set
sùr	[sùr]	put in order
bîr-ná	[bîrná] ~ [bîr ¹ ná]	praising, snatching
kâr-ná	[kârná] ~ [kâr ^a ná]	putting, setting
sûr-ná	[sûrná] ~ [sûr ^u ná]	putting in order

2.1.6.5 Realizations of y and w in complex onsets

When **y** and **w** are found in complex onsets (2.1.2.5), they are normally realized as semivowels.

gyáálà	[gyáálà]	medicine, fetish
kyàáàrì	[kyàáàrì]	paternal aunt
gwàáàrè	[gwàáàrè]	sickle
kwààvbá	[kwààvbá]	bush sp.
tyáà bàtì fish.sp two	[tyáà bàtì]	two fish (sp.)
kwàà bàtì	[kwàà bàtì]	two necks, two voices neck/voice two

However, when the syllable in which they are found is utterance-final, they are phonetically realized as vowels: their duration is increased, and they carry pitch which

signals the underlying tone melody. The duration of the following vowel, in contrast, is reduced.

tyàà	[tíà]	fish sp.
tyàá	[tíá]	hole-digger, jackhammer
kwàá	[kùá]	neck, voice
kwáà	[kúà]	grass

The interpretation of these semivowels as underlyingly consonantal is defended in 2.3.3.1.

2.1.6.6 Realizations of consonants after t

When a consonant follows the inherently voiceless alveolar stop **t** (see 2.1.2.2) across a syllable boundary, it is devoiced. Such a sequence is only found in two related words in the data, where it is realized as follows:

kpâtgá	[kpâṯká]	distance (cf. kpàt ‘far,’ -ga (historical noun suffix; see 5.1.3.2))
kpàtgí	[kpàṯkí]	become distant (cf. kpâtgá ‘distance’; see 7.1.2.1 on derived verbs)

This contrasts with the realization of consonants following the stops **p/b** and **k/g** (2.1.3.2); in this environment, consonants are not devoiced.

nà-bàhbgá	[nàbàhp`gá]	acacia sp.
vòbgí	[vòp`gí]	daub
síblè	[síp`lè]	termite sp.
nà-nìg.bó	[nàṅk`bó]	civet
rág.bà	[ráq`bà]	triviality, trifle
dèglèm	[dèk`lèm]	insect sp.

(Realizations of **g** are described in 2.1.6.1).

2.1.6.7 Realizations of ŋ after vowels

When the nasal **ŋ** follows non-front vowels **a o u**, it is realized with a velar place of articulation.

săŋ	[săŋ]	ill omen
tì-tôŋ	[tìtôŋ]	remains
kpúŋ	[kpúŋ]	hill
sáŋnì	[sáŋnì]	mortar

kpòŋrǎ	[kpòŋrǎ]	tibia (of animal)
gbúŋnì	[gbúŋnì]	shack

It is also realized as **ŋ** when it follows a front vowel **i** or **e** and is itself followed by a velar stop **k/g**.

tíŋgà	[tíŋgà]	monitor lizard
nà-réŋgéré	[nà-réŋgéré]	hanging roots

However, when it follows a front vowel in any other context, it is realized as a palatal nasal.

bîŋ	[bîŋ]	forest
bèlèŋ	[bèlèŋ]	eagle sp.
tîŋ-nǎ	[tîŋnǎ]	to start (cf. tîŋ ‘start,’ -nǎ verbal noun suffix)
nǎ-sèŋrǎ	[nǎsèŋrǎ]	toothache

The weakly attested preglottalized nasal **'ŋ** is not found after any front vowels in the data, so it is not possible to establish its realization in this environment.

2.1.7 Airstream mechanisms

The Mambay language employs three airstream mechanisms. As is likely the case in all languages, egressive pulmonic air is the primary mechanism by which segments are articulated. In Mambay, however, two groups of consonants employ other airstream mechanisms: implosives are articulated with an ingressive glottalic airstream (2.1.7.1), and labial-velar stops are articulated with egressive pulmonic air accompanied by an ingressive velaric airstream (2.1.7.2). In addition, a paralinguistic “nasal click” exhibits a variation on a typical ingressive velaric airstream, since its release is nasal rather than oral (2.1.7.3).

2.1.7.1 Ingressive glottalic

The implosives **ɓ** and **ɗ** are produced with an ingressive glottalic airstream in syllable onsets (2.1.6.2).

In Eguchi’s presentation of the Mambay consonant inventory, he also includes two implosive nasals and symbolizes these consonants as **ɱ** and **ɳ** (1971:145). Ladefoged and Maddieson admit the articulatory possibility of implosive nasals, but they state that none have been attested in the world’s languages (1996:102–3). Careful observation reveals that their assertion holds true for Mambay. While these nasal consonants are contrastive and pattern with implosives as part of a glottalic series (2.1.1), they are phonetically preglottalized rather than implosive. Consequently, they have been symbolized as **'m** and **'n** in the present study.

2.1.7.2 Ingressive velaric

In Mambay, the labial-velar stops **kp** and **gb** are articulated with a combination of the egressive pulmonic and ingressive velaric airstreams. Ladefoged (1968:9) catalogues this type of articulation as one of three ways in which labial-velar stops may be produced, and describes its articulatory and phonetic qualities in detail. In short, this airstream mechanism is made by negative pressure in the oral cavity, accomplished by the lowering of the jaw at the point when both velar and labial closure have been achieved. The ingressive velaric quality of these stops in Mambay is confirmed by a “popping” sound which is present upon their release, when air rushes into the oral cavity from both front and back. This sound is more clearly heard with **kp** than it is with **gb**.

2.1.7.3 Ingressive velaric with rear oral release

A variation on the ingressive velaric airstream described above (2.1.7.2) is found in a “nasal click” used by speakers of Mambay. Like labial-velar stops, it is produced with an ingressive velaric airstream; however, for the nasal click the ingressive velaric airstream mechanism is primary, and its release takes place at the back rather than the front of the mouth.

The nasal click is a paralinguistic utterance used in Mambay as the default means of communicating agreement or assent. It is typically repeated, especially when a speaker wants to signal strong agreement. This articulation is used by speakers of many other languages for an equivalent function; its areal distribution extends to much of northern Cameroon, southern Chad and likely other adjacent regions. Sang-Yong Lee (pers. comm. 2003) has suggested that the same clicking sound is also used in south-eastern dialects of Korean, where it expresses sympathy and condolence. A similar phenomenon is the “ingressive nasal accompaniment” which occurs with clicks in some Khoisan languages (Ladefoged and Maddieson 1996:102). However, in that context, there is also a release at the front of the mouth.

Descriptions of this intriguing phenomenon as it occurs in Mambay and other languages in the region are uncommon in the literature, and those that do exist provide only modest phonetic detail. For Mundang, Elders depicts the sound as an “injectif uvulaire” (uvular implosive) (2000:586). He also quotes Lukas (1937:147), who describes its articulation in Kanuri (a Saharan language of Nigeria) as a postvelar click in which the lips are closed.

More may be said regarding the articulation of the nasal click in Mambay, some of which is likely pertinent to its realization in other languages. Visual and auditory observation reveals that, similar to what happens with the production of labial-velar stops (2.1.7.2), negative pressure in the oral air chamber is accomplished by the lowering of the jaw and/or the tongue during velar and labial closure. However, rather than releasing the negative balance of pressure at the lips, the back of the tongue is dropped. When the tongue’s seal with the velum is broken, air rushes into a newly unified oropharyngeal cavity from an open nasal/pharyngeal breathing tract. The resulting sound is a sharp click with a high-pitched onset and a low, dull reverberation in the oropharyngeal cavity,

and the sound may be heard from the nose as well as through the cheeks. There is no voicing at any time during the articulation.

The direction of an accompanying pulmonic airstream is irrelevant to the accomplishment of the articulation; in fact, breathing normally takes place through the nose throughout the period of articulation. The negative balance of oral air pressure described in the previous paragraph is compensated for by an increase of air rushing in through the nose (during incidental inhalation) or an egressive pulmonic airstream (during incidental exhalation).

2.1.8 The labial flap

The labial flap, rare among the world's languages, is the most unusual member of the Mambay consonant inventory.

Important cross-linguistic studies on the labial flap are those of Thomas (1972), Greenberg (1983) and Olson and Hajek (1999, 2001, 2003, 2004; Olson 2004). For the most part, the labial flap has been documented among languages of north-central Africa, but it is also attested in a few languages in the south-east portion of the continent and in a single Malayo-Polynesian language of Indonesia. In Africa, the languages in which the labial flap has been reported belong to three major phyla: Niger-Congo, Nilo-Saharan and Afro-Asiatic (Chadic only). By far the highest concentration is found in the Adamawa-Ubangi branch of Niger-Congo, of which Mambay is a member (Olson and Hajek 2003:157–60, 1.2.2).

According to Olson and Hajek, “the labial flap is produced by retracting the lower lip into the mouth well behind the upper teeth and then bringing it forward rapidly, striking the upper lip or teeth in passing” (2003:157). The term “labial flap” thus acts as a cover term for two distinct phonetic entities: the labiodental flap and the bilabial flap. However, as these two units are not known to contrast in any language, they have often been given the same phonological label. In actual fact, most languages exhibit the labiodental sound as the sole or primary place of articulation. Only three languages, including Mambay, are reported to employ a bilabial articulation in all environments (Thomas 1972:113, Olson and Hajek 2003:166). The photographs on the following page, which are taken from Anonby (2007) and which feature the study's principal collaborator Oussoumanou Bouba, confirm this assessment for the labial flap in Mambay.

Photographic documentation of the labial flap in Mambay



Figure 1. The labial flap is shown in the word **vbɨnɔ́** ‘male (n.).’ At 0.00 seconds, the mouth is in resting position.



Figure 2. At 0.30 seconds, the lower lip has been pulled behind the upper teeth.

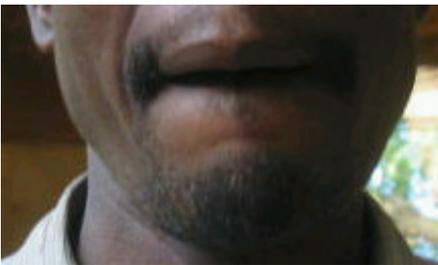


Figure 3. At 0.45 seconds, the upper lip is pulled down as the lower lip begins to move forward into contact with it. The tightening and dropping of the upper lip is characteristic of the bilabial variant of the flap, which is attested in Mambay.

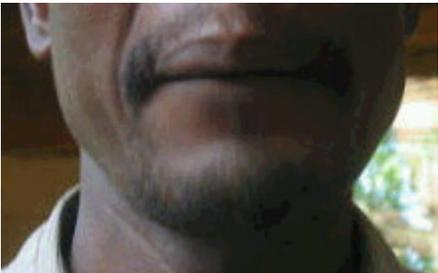


Figure 4. At 0.55 seconds, the lower lip comes rapidly forward into contact with the upper lip, sealing the oral cavity briefly. Air pressure builds up behind the closure. There is a popping sound when the seal is released.



Figure 5. At 0.60 seconds, the outward motion of the lower lip is complete.

In most of the languages which contain the labial flap, it is phonologically peripheral (Olson and Hajek 2003:167). However, Anonby (2004b, 2007) argues that for Mambay the labial flap must be considered a basic and contrastive member of the consonant inventory: it is shown that the labial flap is found in about 120 lexical items representing several word classes, and additionally occurs among a variety of phonological environments, including complex morpheme-initial onsets (2.1.2.5) and morpheme-internal onsets (2.1.2.2). These characteristics are evident in the following sample of words with the labial flap (represented by **vb** in the phonological orthography; see 2.1.1):

bùvbúŋ	net sp.	vbèd'	peel off
bàvbâw	fish sp.	vbìgim	green, unripe
féévbà	pair of twins	vbíí	cut, cut up
kààvbèègà	cucumber, squash	vbilá	piece of <i>boule</i>
kàvbâw	the end (story margin)	vbízò	fishhook
lwâgvbá	tenderness, youngness	vbì'n	hard-boil
nǎ-vbâh	distribution	vbó'	mix
pùgvbí	scatter	vbòlvbòl	furiously
vbáhrà	clod of earth	vbúù	grass sp.
vbàhtátá	strong and healthy, solid	vbwâh	fog, cloudburst
vbààlá	testicle	vbyâ'	marsh
vbá'là	chunk, muscle	vbyâh	cheek

There is a growing body of evidence for languages (like Mambay) in which the labial flap patterns as an integral, contrastive phonological unit (Olson and Hajek 2001, 2003, 2004; Anonby 2004b). Because of this, the International Phonetic Association has recently adopted the transcription [v] for the labiodental flap (IPA 2005:261). For the bilabial flap, the modified symbolization [ɸ] has been proposed, since it admits an articulation further forward than the labiodental place of articulation (Olson and Hajek 1999:12).

2.2 Vowels

In the present section, an inventory of vowels is provided (2.2.1). The distribution of vowels in the language (2.2.2) is followed by a demonstration of contrast among them (2.2.3). Additional topics are vowel interpretation issues (2.2.4) and phonetic realizations of vowels (2.2.5).

2.2.1 Inventory of vowels

The vowel inventory of Mambay consists of five basic vowel units which may be lengthened, or modified by nasalization, glottalization or pharyngealization. These vowels, which represent thirty distinct qualities, may be schematized in eight sets. Each set provides contrast among its members, and a number of the sets may be contrasted with one another, since they are morphologically equivalent. Contrasts which are not satisfactorily demonstrated by these sets are shown in 2.2.3.

basic (short) vowels:

	front	central	back			
high	i		u	i	zím	bend to the ground, pray
mid	e		o	e	sèm	sneeze, avoid
low		a		a	zám	weave or braid finely
				o	vbòm	divide, spread, ruin
				u	vúm	blow

long vowels:

	front	central	back			
high	ii		uu	ii	ríí	carry
mid	ee		oo	ee	réeé	melt
low		aa		aa	ráá	spread out
				oo	ròò	trick, amuse
				uu	rúú	leave without warning

short nasalized vowels:

	front	central	back			
high	ĩ		ɥ	ĩ	hùùrĩ	hyena
mid				ɔ̃	bùùrɔ̃	millet sp.
low		ɔ̃		ɥ	bíírɥ	cobra

long nasalized vowels:

	front	central	back			
high	ĩĩ		ɥɥ	ĩĩ	ríí	clean out, wink
mid				ɔ̃ɔ̃	ráá	blind (v.), singe
low		ɔ̃ɔ̃		ɥɥ	đúú	slip something into a person's hand

glottalized vowels:

	front	central	back			
high	i'		u'	i'	bí'	dip
mid	e'		o'	e'	bé'	spy (v.)
low		a'		a'	bá'	fill up
				o'	bó'	put in one's mouth
				u'	bú'	gather up

pharyngealized vowels:

	front	central	back			
high				eh	sêh	hand of ... (cf. 5.2.2.2)
mid	eh		oh	ah	zàh	cow of ...
low		ah		oh	tòh	snake of ...

nasalized and glottalized vowels:

	front	central	back			
high	ǰ'		ɥ'	ǰ'	rǰ'	glue, be infected
mid				ǰ'	rǰ'	rot
low		ǰ'		ɥ'	rɥ'	twist, extract

nasalized and pharyngealized vowels:

	front	central	back			
high	ǰh		ɥh	ǰh	rǰh	slip, crawl
mid				ǰh	yǰh	call, invite
low		ǰh		ɥh	rɥh	polish

These eight vowel sets reveal three gaps in the inventory:

- 1) there is no phonological distinction between high and mid nasalized or pharyngealized vowels; nasalized mid vowels are absent (see 3.1.1 for discussion), as are high oral pharyngealized vowels (see 2.2.4);
- 2) there is no contrast in length for glottalized or pharyngealized vowels (see 2.3.3.2 and 2.3.3.3); and
- 3) although glottalization and pharyngealization may be found with nasality, they never occur with one another.

2.2.2 Distribution

There are a number of limitations on the distribution of vowels. In addition to general frequency patterns (2.2.2.1), some limitations depend on the syllable shape (2.2.2.2) or morpheme position in which vowels are found (2.2.2.3). There are also restrictions on which vowels may occur together within a morpheme; these restrictions differ according to the morphological class of the morpheme (2.2.2.4).

2.2.2.1 General frequency patterns

The presentation of vowels in 2.2.1 above is valuable in showing the range of attested vowel possibilities. However, two additional observations regarding the frequency of different types of vowels are instructive in communicating a more balanced picture of vowel frequencies in the language.

First, a cursory survey of the lexicon reveals that the low vowel **a/aa** is by far the most frequent vowel. High vowels **i/ii** and **u/uu** are also frequent. However, mid vowels **e/ee** and **o/oo** are uncommon.

Second, vowels which are modified by nasalization, glottalization, and pharyngealization are less common than unmodified vowels.

When these two patterns overlap, individual vowels representing low-frequency tendencies are poorly attested. Thus, mid pharyngealized and mid glottalized vowels, as well as nasalized glottalized and nasalized pharyngealized vowels, are scarce.

Because of such frequency patterns, it is difficult in some cases to find contrasts which are morphologically equivalent for mid and modified vowels (cf. 2.2.3).

2.2.2.2 Vowels in syllables

All vowels are found in open syllables (for a discussion of syllable types, see 2.4.1; for examples of vowels in open syllables, see word lists in 2.2.1 and 2.2.3).

Almost all instances of vowels in closed syllables are short vowels. These vowels are generally oral or modified only by nasalization. Additionally, according to the interpretations presented in 2.3.3, there are some instances of pharyngealized and glottalized vowels in closed syllables. In five morphemes, unambiguously long vowels are also found in closed syllables (2.4.1).

2.2.2.3 Vowels in morphemes

As is evident in the lists presented to demonstrate contrasts among vowels (2.2.1, 2.2.3), all vowels are found in root-initial syllables of morphemes.

In all other morphological positions, however, the vowel inventory is restricted; long, glottalized, and pharyngealized vowels are almost absent. In the data, the only exceptions to this pattern which could be construed as monomorphemic are found in the lists which follow.

long vowels:

ʔáhyyáà	oh dear!
ʔàyyéé	indeed!
bàhàà	ibis sp.
bàrgúú	both

pìpùùrì	horn (instrument)
tí-tòòntî	lark (bird sp.)
wátùtáà	salt, sugar

glottalized vowels:

bìzápé'	five
mǎhǎ'	animal sp.
nǎ-dídá'	summit
rǎfá'	brownness

pharyngealized vowels:

fwàrnâh	eight
gàgàhŋ	drumstick
gìwâh	cup
kàrwâhz	abruptly and desperately
nǎ-bíbáhrâm	bedbug
nǎ-wíwâh	belt made of bells
nǎ-zìzâh	dance sp., instrument sp.

The distribution of long, glottalized and pharyngealized vowels in these words is unquestionably marginal in the language, and even in the words presented in the list above, a simple morphological identity is tentative. In many cases, the words' forms hint at structural complexity, or may point to borrowing from Mundang (note in particular the **Ci**-initial forms, which are reminiscent of the **Cə**-initial “preformatives” in Mundang; see Elders 2000:125ff.). In addition, the atypical distribution of vowels in words such as interjections, species names and musical instruments may be related to the employment of non-canonical structures available to ideophonic words (8.2).

2.2.2.4 Co-occurrence restrictions

Within morphemes, two factors in addition to syllable (2.2.2.2) and morpheme position (2.2.2.3) relate to restrictions on which vowels may occur in the same morpheme: the morphological class to which a morpheme belongs, and the distribution of nasality in the morpheme.

Morphological classes demonstrate varying degrees of restrictions on which vowels may occur together within a morpheme. On the one hand, strong co-occurrence tendencies are evident between vowels in the first and second syllable of nouns: identical V_1 - V_2 vowels and V_1 -**a** sequences are by far the most common (Anonby 2008), but these are not binding. The following list shows attested V_1 - V_2 sequences for the five basic vowel qualities (2.2.1) in nouns. Whenever possible, short vowels are given; modified (long or glottalized) vowels are shown when no short vowels are attested for a given sequence.

i-i	wízì	wagtail (bird sp.)
i-e	bíbél	summit
i-a	gílà	rainy season
i-o	vbízò	fishhook
i-u	ná-kpígù	fish sp.
e-i	yèrí	clothing
e-e	bègé	small
e-a	béyà	hoe sp., friend (archaic)
e-o	—	
e-u	tè'nú	side (body)
a-i	làbí	left (n.), left-handedness
a-e	tálè	roof
a-a	bàlá	elephant
a-o	—	
a-u	gà'rú	binga (flying fish)
o-i	bóólì	intelligent
o-e	kóólè	swaddling clothes, nest lining
o-a	tórà	seed
o-o	rógò	tomorrow (n.)
o-u	—	
u-i	tùúrì	<i>boule</i>
u-e	—	
u-a	kùgá	plant sp.
u-o	túbò	blood
u-u	sùmú	potter's kiln

These data do not show any categorical limitations on which vowels may occur together within a noun root. Rather than suggesting synchronic restrictions, the unsystematic gaps that are found likely point to tendencies in historical noun suffixation (Anonby 2008).

On the other hand, there are tight synchronic restrictions on ideophonic modifiers, which prohibit vowels of differing value to be found together within certain morpheme or word structures (8.4.2.2.1). Canonical verb stems are monosyllabic (7.1.1), and are thus exempt from a discussion of vowel co-occurrence; and other word classes do not have enough members with more than one syllable from which to draw authoritative conclusions on the topic.

Restrictions on the nasality of vowels in morphemes are addressed in detail in 3.4.2.

2.2.3 Contrast between vowels

The word sets given with the vowel inventory in 2.2.1 demonstrate contrast among the members of each set. In addition, a number of the sets given there may be contrasted with one another, since they uniformly present verbs consisting of an open syllable. This is the case for the following sets:

- long vowels
- long nasalized vowels
- glottalized vowels
- nasalized glottalized vowels
- nasalized pharyngealized vowels

However, there are a few vowel sets whose context is not comparable (i.e., it is something other than a verb consisting of an open syllable). Consequently, in the present section, additional evidence is presented for contrasts in length on oral and nasalized vowels (2.2.3.1), pharyngealized vowels with short and long vowels (2.2.3.2), and short vowels with glottalized vowels (2.2.3.3).

2.2.3.1 Length

Each of the short, basic vowel qualities **i e a o u** contrasts with a long counterpart.

i	gílà	rainy season
ii	gìllá	quiver (for arrows)
e	bègé	slave
ee	bèèlá	pangolin
a	bàlá	elephant
aa	báálà	captive
o	tórà	seed
oo	gòòrá	roof, preparation
u	súgò	ear
uu	sùùgó	thought, wisdom

This contrast in length is also characteristic of nasalized vowels:

ĩ	nĩnũ	eye, face, life
iĩ	niĩnú	bottom, meaning
ą	wą́rą́	mosquito
ąą	wą̀àrą̀	valley, used pasture

ɥ	bùrí	wild manioc sp.
ɥɥ	pìpùùrí	horn (instrument)

2.2.3.2 Pharyngealization

Pharyngealized vowels, which do not exhibit distinctions of length (cf. 2.2.1, 2.3.3.2), contrast with basic short vowels and long vowels:

eh	béhlég	small	eh	ḏèh	bow low
e	ḏéléŋ	intelligent	ee	pèè	cease, be limited
ah	wàhlá	nape (of neck)	ah	bǎh	rain
a	wálà	orphan	aa	báà	cane rat
oh	kpòhròm	blunt	oh	gòh	narrow
o	tí-tóróŋ	small bronze bell	oo	tí-góò	window (in dâg tí-góò ‘window’)

Pharyngealized vowels also contrast with glottalized vowels:

eh	héh	stop
e’	hé’	bang, bang into
ah	sáh	ask, rip, play
a’	sá’	buy
oh	tòh	snake of ...
o’	dò’	belly of ... , centre of ...

2.2.3.3 Glottalization and short vowels

Glottalized vowels contrast with short vowels:

i’	sí’là	cold (n.)
i	tílà	sickness, blight
e’	pè’gá	tree hollow, beehive
e	bègé	slave
a’	sà’lá	rope, trap
a	sàlá	cowrie shell
o’	ḃò’lá	tumor
o	tóra	seed
u’	kù’rá	melon
u	túra	millet

2.2.4 Issues in vowel interpretation

There are two major issues related to vowels which necessitate interpretation: lack of contrast in length on glottalized and pharyngealized vowels, and the underlying height of non-low pharyngealized vowels. The first issue is addressed in 2.3.3.2 and 2.3.3.3, where it forms part of a general discussion considering the consonantal vs. vocalic identity of glottalized and pharyngealized vowels; the second issue is addressed in the present section.

Underlying height of non-low pharyngealized vowels

A comparison of oral and nasalized inventories of pharyngealized vowels reveals that, at least on the surface, oral non-low pharyngealized vowels are mid ([**eh**] and [**oh**]), but nasalized non-low pharyngealized vowels are high ([**ih**] and [**uh**]).

Three possible interpretations for the underlying height of non-low pharyngealized vowels are as follows:

1. Other than a basic low/non-low distinction, pharyngealized vowels are not underlyingly specified for height (i.e., mid vs. high).
2. Non-low pharyngealized vowels are all underlyingly mid.
3. Non-low pharyngealized vowels are all underlyingly high; the mid phonetic value of the oral members is an articulatory consequence of pharyngealization.
4. Oral non-low pharyngealized vowels are underlyingly mid, and nasalized non-low pharyngealized vowels are underlyingly high.

The first, second and third explanations are helpful in that they advocate symmetry between the oral and nasalized pharyngealized vowel inventories. While the second explanation does not respect restrictions on nasalized mid vowels in the language (cf. 3.1.1), the third explanation does so explicitly. The second explanation also falls short in that it needs to account for the high realization of the nasalized pharyngealized vowels.

The fourth explanation, in contrast, advocates asymmetry between oral pharyngealized and nasalized pharyngealized vowels. Like the third explanation, it explicitly respects the absence of nasalized mid vowels in the language. However, it is less abstract; it conveniently proposes underlying forms which correspond exactly to surface realizations.

A final piece of evidence in support of the fourth explanation relates to vowel distribution in ideophones. As described in 8.4.2.1.1, there are strong limitations on which vowels may occur within the same ideophonic modifier. In most cases, a single vowel position is permitted.

kpìgzìm	thick (dimension)
làrbàg	flat-nosed
vbérgé	runt-like
bòglòm	bulging

This is the case even if one of the vowels is modified by glottalization or pharyngealization.

gàhḡgàràḡ	abnormally doubled
vbàhtátá	strong and healthy, solid
kàrwàhz	abruptly and desperately

The following list shows ideophones which contain pharyngealized vowels **eh** and **oh** in the same ideophonic modifier as another unmodified vowel.

béhlég	small, a bit	(* béhlíg)
gòhḡròḡ	bent	(* gòhḡrùḡ)
kpòhròm	blunt	(* kpòhrùm)
póhḡgòḡgòḡ	narrow	(* póhḡgùḡgùḡ)

Forms such as those on the right (marked with asterisks) are not permitted. In each of the attested cases, however, the value of the unmodified vowel, which represents the same vowel position as the pharyngealized vowel, is mid rather than high.

Because of these data, and weighing the other factors given above in support of each explanation, the fourth explanation has been chosen for this study: oral non-low pharyngealized vowels are treated as underlyingly mid (**eh** and **oh**), and nasalized non-low pharyngealized vowels are treated as underlyingly high (**ih** and **uh**).

2.2.5 Phonetic realizations

Three types of vowels exhibit more than one phonetic realization depending on where they are found in syllables and utterances and, in some cases, the speed and register at which they are articulated: short mid vowels, glottalized vowels and pharyngealized vowels. Realizations of short mid vowels are described in the present section. However, realizations of glottalized and pharyngealized vowels are described in the sections on the interpretation of those vowels (2.3.3.2 and 2.3.3.3).

Short mid vowels

Short mid vowels **e** and **o** are realized as phonetic close-mid vowels [e] and [o] in open syllables.

bègé	[bègé]	slave
tì-kóólè	[tìkóólè]	pipe
tórà	[tórà]	seed
gùgò	[gùgò]	firewood

In closed syllables, however, they are realized as open-mid vowels [ɛ] and [ɔ].

gèmná	[gèmná]	entrance hut
kêrgá	[kêrgá]	loose-weave basket

kómnà	[kómnà]	hunger
gòg.bá	[gògbá]	ill omen

bègé [bègé]	-z-	→	bègzé [bègzé]	(cf. singular form above)
slave	PL		slaves	

tórà [tórà]	-z-	→	tórzà [tórzà]	(cf. singular form above)
seed	PL		seeds	

2.3 Issues relating to both consonants and vowels

In the present section, issues relating to both consonants and vowels are explored. A discussion of consonant/vowel distribution patterns (2.3.1) is followed by a demonstration of contrast for specific sequences (2.3.2). Four interpretive issues, all of which have major implications for the phonological structure of the language, are addressed in 2.3.3.

2.3.1 Consonant/vowel distribution patterns

Besides restrictions defined by positional distribution constraints (2.1.2, 2.2.2), there are few limitations on the consonants and vowels that may occur next to one another.

Within syllables, most possibilities are attested. With the exception of nasal consonants and the semivowels **y w ʏ 'w**, all onset consonants (2.1.2.1) are followed by vowels representing all of the five basic vowel positions (2.2.1). Similarly, with the exception of the same consonants, there do not appear to be any systematic constraints on which of the basic vowels may occur together with attested coda consonants (2.1.2.3 and 2.1.2.4). While the distribution of vowels after nasal consonants is treated in 3.4.1, the distribution of vowels next to semivowels is discussed in the following subsection (2.3.1.1).

In morphemes with more than one syllable, long vowels, glottalized vowels and pharyngealized vowels are not found before glottalized consonants, even across a syllable boundary (2.3.1.2). No other heterosyllabic inventory constraints have been observed.

2.3.1.1 Limited distribution of vowels with semivowels

Within syllables, a limited inventory of vowels is found adjacent to the semivowels **y w** and glottalized semivowels **ʏ 'w** in all positions: simple onsets (2.3.1.1.1), complex onsets (2.3.1.1.2), and codas (2.3.1.1.3).

2.3.1.1.1 After simple onsets

After simple syllable onsets (2.4.2), the high front vowel **i** never follows **y** or **ʏ**, and the distribution back vowels **o u** is almost excluded after **w** and **'w**.

yi	—		wi	wîr	then
ye	yèb	peace, wholeness	we	wéy	virginity
ya	yàg	ululate	wa	wàr	leave
yo	yôm	enough	wo	?dòwó	yes
yu	yúh	narrow	wu	?úùwú	3SG.POSS (fast speech)
yí	—		'wi	'wîh'wîh	achy and restless
ye	yêl	disturb	'we	'wéy	fish sp.
ya	yáď	feel, rub	'wa	'wàg	such
yo	—		'wo	—	
yu	yúú	penetrating like an arrow	'wu	—	

The absence of **yó** in the data is probably due to chance rather than a systematic gap, since **yo** is found and because the sequence is pronounced without alteration in words of Fulfulde origin such as **yóólà** (place name).

Conversely, occurrences of **wo** and **wu** are limited. While **wo** is found only in the word **?dòwó ~ ?dwwó** ‘yes,’ **wu** is limited to the morphemes **?úùwú** and **-`wú**, casual speech variants of **úùrú** (3SG.POSS) and **-`rú** (3SG.POSS.INAL; cf. 6.1.4). Words of Fulfulde origin with the sequence **wu** are reinterpreted with **hu** in Mambay; for example, Fulfulde **wuro** ‘village’ is pronounced **húrò**. In addition, the arisal of **wo** and **wu** in some complex morphological contexts results in the alternation of **w** with **h** before back vowels (5.2.2.2.1).

2.3.1.1.2 After complex onsets

Distribution restrictions on vowels after complex syllable onsets are parallel to those found after simple onsets (2.3.1.1.1), although only **y** and **w** are found here (2.1.2.5). The high front vowel **i** is absent after **y**, and back vowels **o u** are absent after **w**.

yi	—		wi	zwî'gá	beauty, fineness
ye	byèď	repeat oneself	we	kwéré	fence
ya	byàá	water	wa	kwàá	neck, voice
yo	ďyóò	grass sp.	wo	—	
yu	fyùú	completely	wu	—	

Although all of these sequences are attested, the vast majority CCy and CCw sequences are found with the vowel **a** and its modified counterparts.

2.3.1.1.3 Before codas

As is the case in syllable onsets, there are restrictions on the inventory of vowels that may occur next to semivowels in syllable codas. The following sequences have been attested:

iy	—		iw	—	
ey	wéy	virginity	ew	nà-gbéhwrà	wild hibiscus sp.
ay	fǎy	fish sp.	aw	kǎw	frog sp.
oy	—		ow	támbyòw	billy goat
uy	—		uw	—	
iỵ	—		i'w	kpí'wsí	shallow
eỵ	—		e'w	kpé'wrà	melon
aỵ	kpạ̀ỵ	swing the hips	a'w	nà'w	spank (v.)
oỵ	—		o'w	kyô'w	warthog, pig
uỵ	—		u'w	—	

A number of factors limit this inventory of combinations.

1. The sequences **iy** and **uw** do not contrast with the long vowels **ii** and **uu**; all instances of these sequences have been interpreted as long vowels (2.3.3.4).
2. Similarly, the sequences **iỵ** and **u'w** do not contrast with the glottalized vowels **i'** and **u'**; all instances of these sequences have been interpreted as glottalized vowels (2.3.3.3), which do not show a distinction in length.
3. There are no instances where the vowel-semivowel sequences **uy** and **iw** contrast with the semivowel-vowel sequences **wi** / **wii** and **yu** / **yuu**. All potential occurrences of these sequences have been interpreted as semivowel-vowel sequences (2.3.3.4); the length of the vowel in each case is determined by behaviour of the word in non utterance-final position (cf. 2.1.6.5). A parallel interpretation is not available for and **uỵ** (which is not in any case attested) and **i'w**, since V'C sequences are in most cases interpreted as a vowel followed by a glottalized consonant (see 2.3.3.3).
4. The sequence **oy** appears to be supplanted by **we** / **wee** in Mambay. Evidence of this comes from the borrowed Mambay word **bwéè** 'domestic helper,' which is a reinterpretation of the word *boy* (Colonial British English via Hausa and Fulfulde *boy*).
5. **aw** and **ow** are in variation in non morpheme-final syllables (for example, **lâwrá** ~ **lôwrá** 'large egret sp. '), where **aw** is the preferred variant in careful speech.
6. The glottalized semivowels **ỵ** and **'w** are only modestly attested in coda position. Consequently, especially as concerns **ỵ**, inherent restrictions on the vowels that may follow these consonants are difficult to establish.

2.3.1.2 Limitation of vowel length and quality before glottalized consonants

With the exception of words borrowed from Fulfulde, there are no Mambay words in which long vowels are found before glottalized consonants, even across a syllable boundary. In addition, glottalized and pharyngealized vowels are never found in this position. The apparent restriction on glottalized vowels results from the interpretation of most syllable-internal V'C sequences as vowels followed by glottalized consonants (2.3.3.3). In contrast, the absence of pharyngealized vowels before glottalized consonants reflects a manifest gap in the phonological system.

These distributional restrictions likely originate in the complex internal structure of glottalized consonants (2.1.5.1).

2.3.2 Contrast

Although most contrasts have been established in the sections devoted to consonants (2.1.3) and vowels (2.2.3), additional contrasts involving glottalic sequences (2.3.2.1) and codas affected by nasality (2.3.2.2) relates to both groups of segments.

2.3.2.1 Glottalic sequences

There are a number of distributional gaps (2.3.1.2) and ambiguous sequences (2.1.4.1, 2.1.4.2, 2.3.3.3) associated with glottalic articulations. Over a syllable boundary, however, glottalized vowels followed by a **b** contrast with non-glottalized vowels followed by the implosive **ɓ**. This contrast persists in spite of the penetration of glottalization from glottalic consonants into the vowels of preceding syllables (2.1.5.1). Phonetically, the contrast is signalled by the presence vs. absence of glottalization on the vowel in the first syllable, the persistence of phonetic implosion on the (phonetically preglottalized) implosive stops, and the possibility of a phonetically open vs. closed transition (i.e., oral release) between the glottalic element and the stop element.

lè'ba	[lê:bá] ~ [lɛʔ'ba] ~ [lɛʔba]	metal, money
tí-sì'ba	[tísì:bá] ~ [tísìʔ'ba] ~ [tísìʔba]	honour
páɓà	[pá'ɓà]	milk
túɓò	[tú'ɓò]	blood

This contrast suggests that vocalic glottalization and consonantal glottalization are phonologically independent of one another in this environment.

An equivalent contrast that might be expected with **d** and **ɗ** is not possible because **d** is never found non morpheme-initially in Mambay (2.1.2).

2.3.2.2 Codas affected by nasality

There is contrast between **Vŋ** and **V̥V̥** codas. This is evident in the following examples:

dúŋ	bend down
dúú	slip something into a person's hand

nà-kààrà faithful companion, disciple
nà-kànrá cane, coward

2.3.3 Interpretive issues

There are number of interpretive issues involving both vowels and consonants. This topic has major implications for segmental and syllable inventories. These issues concern the interpretation of **y** and **w** in complex onsets (2.3.3.1), pharyngeal articulations (2.3.3.2), glottalic articulations in syllable rhymes (2.3.3.3), and syllable rhymes ending in high vowels and semivowels (2.3.3.4).

2.3.3.1 **y** and **w** in complex onsets

Clements has noted that “it is often hard, in synchronic analysis, to determine whether a phonetic segment such as [kw] should be analysed phonemically as /ku/, /kw/, or even as the single segment /k^w/” (2000:130). In other words, it is possible that onsets comprised of a consonant-semivowel sequence be interpreted as CV, CC or C. In Mambay, where this interpretive question arises, none of the three alternatives is without shortcomings.

The weakest of the three possible interpretations is that of CV (**Ci** and **Cu**). Arguments for this alternative are that:

1. In utterance-final monosyllables, **y** and **w** are phonetically realized as vowels: their duration is greater in this position, and they carry pitch which signals the underlying tone melody (2.1.6.5).

tyáà	[tíà]	fish sp.
kwáà	[kúà]	grass

2. **y** and **w** participate in vowel height assimilation processes in certain multimorphemic contexts (5.2.2.2.2).

tyáà	+	?íí	→	tèè ?íí
fish sp.		1SG.POSS		my fish sp.
kwáà	+	?íí	→	kóò ?íí
grass		1SG.POSS		my grass

However:

1. The designation of **y** and **w** as vowels in this context would require an introduction of vowel diphthongs or non-identical vowel sequences into the phonology, since none are found unambiguously in the language.
2. Even more problematic is the existence of a marginal contrast in vowel length after **Cy** and **Cw** sequences. **CyVV** and **CwVV** syllables are not uncommon. On the contrary, there are only ten words in the data with **CyV** and **CwV** syllables; and of these, two are borrowed, and at least one is a morphologically complex

ideophone. Still, in light of certain data (for example: **kwéré** fence, **nà-dwàràṅ** sore, pimple; vs. **gwàárè** sickle, **gwáálá** thief, robbery), this contrast in vowel length must be recognized. An interpretation of **y** and **w** as V in this context would therefore necessitate the recognition of three-mora vowels (VVV) syllables in the phonology, even though there is no evidence for these elsewhere in the language.

Somewhat more satisfactory is a C (C^y and C^w) interpretation, where **y** and **w** are seen as palatal or labial modifications of consonants. The key argument for this is that syllable-initial consonant clusters are otherwise unattested; with this interpretation, all complex onsets can be accounted for as single consonants rather than sequences, and no new syllable types need to be accounted for in the inventory (cf. CV and CC interpretations).

However:

1. Phonetically, **y** and **w** typically accompany consonants as an off-glide rather than as a secondary articulation. That is, the point of greatest palatal and labial closure is after the release of the accompanied consonant, not with it. The lack of phonetic connection between the consonant and **y** or **w** is even greater in utterance-final syllables, where **y** and **w** are pronounced as vowels (cf. the first argument in favour of CV above, and 2.1.6.5).
2. **y** and **w** may accompany most consonants, including those which are labial (2.1.2.5). Thus, rather than applying to a limited number of consonantal series (especially velar consonants), this interpretation would entail the applicability of palatalization and labialization to the consonant inventory as a whole. While possible, this is a marked configuration.
3. Complex onsets involving **y** and **w** are limited to morpheme-initial position (2.1.2.5). If the interpretation of these onsets as C^y and C^w were followed, the relegation of all palatalized and labialized consonants to morpheme-initial position would lend imbalance to the distributional patterns of consonants in the language, since codas as well as onsets have rich inventories (2.1.2). However, because syllabic complexity is typical of morpheme-initial syllables (2.4), it could be more appropriate to assign **y** and **w** to an additional syllable position as in the third alternative (CC) below.
4. The morphophonological process in which **y** and **w** coalesce with adjacent vowels (given just above and in 5.2.2.2.2) is difficult to explain if **y** and **w** are interpreted as consonantal features. If this were the case, one would expect that in addition to affecting the following vowels, the palatal or labial feature would remain on the host consonant. However, it does not; the only remaining indications of **y** and **w**'s presence are the fronting or backing of a following vowel and its raising from low to mid.

A CC (Cy and Cw) interpretation is also worth considering. Arguments for this alternative are that:

1. The phonetic realizations of **y** and **w** in this position are best represented by this option (cf. the first arguments presented in favour of CV and C interpretations).
2. Although this interpretation is perhaps less satisfying than a CV interpretation in explaining the morphophonological process in which **y** and **w** coalesce with adjacent vowels (cf. the second argument in favour of a CV interpretation and the fourth argument in favour of a C interpretation; see also 5.2.2.2), it is more convincing than a C interpretation, since the dissociation of the palatal and labial features from the syllable-initial consonant is not an issue in need of resolution.

Still, in spite of these advantages:

1. Significantly, it requires the recognition of CC-initial syllables in the phonology, and there are no other kinds of syllable-initial consonant clusters in the language.

Although neither the second (C^y and C^w) nor the third (Cy and Cw) interpretation of complex onsets is without limitations, both are adequate. Throughout this study, the third interpretation is used as a basis for transcription and discussion.

2.3.3.2 Pharyngeal articulations

Pharyngeal articulations are contrastive in Mambay, and present a major interpretive challenge. In examining the issue, topics which have been invoked range from phonetics, distribution, and syllable structure to the analysis of systematic errors by learners of Mambay as a written language. Even in light of all these issues, none of the analytical alternatives is entirely satisfying.

Interpretive possibilities allow that pharyngeal articulations pattern as one of three structures:

1. an inherent quality of a pharyngeal consonant;
2. an inherent quality of pharyngealized vowels; or
3. a suprasegmental pharyngeal feature which associates with larger units such as syllable rhymes or syllables.

In the analysis that follows, the distribution and phonetic realizations of pharyngeal articulations are reviewed (2.3.3.2.1). Evidence for a consonantal interpretation (2.3.3.2.2) is followed by that which supports a vocalic interpretation (2.3.3.2.3). Drawbacks to each position are assessed (2.3.3.2.4 and 2.3.3.2.5), and a suprasegmental interpretation is briefly considered (2.3.3.2.6). The issue is concluded in 2.3.3.2.7.

2.3.3.2.1 Distribution and phonetic realizations

Pharyngeal articulations are primarily associated with syllable rhymes, although the articulatory effect of pharyngealization sometimes extends to onset consonants (2.1.6.3).

Phonetically, such articulations exhibit both vocalic and consonantal qualities. Because an understanding of the phonetic situation contributes toward an interpretation,

realizations will be described here in each of the three contexts in which they occur: non utterance-final open syllables, utterance-final open syllables, and closed syllables.

In an utterance-final syllable which is otherwise open, the only realization which is attested is a pharyngealized vowel followed by a voiceless pharyngeal fricative component.

f[áçh̥] path

In a non utterance-final syllable which is otherwise open, a pharyngeal articulation is realized with at least a pharyngealized vowel. In some cases, it is realized with an accompanying pharyngeal fricative component, which is itself optionally voiced. In addition, an open transition consisting of a pharyngealized echo vowel optionally follows the fricative component in this position. (Transcriptions are arranged from slow, careful speech to fast, casual speech).

f[áçh̥]là ~ f[áçh̥^{av}]là ~ f[áçʕ]là ~ f[áçʕ^{av}]là ~ f[áç:]là frog sp.

In an unambiguously closed syllable, attested realizations are slightly different. Here, a pharyngealized vowel may be realized without a following pharyngeal fricative component; and when a fricative component is present, it is never accompanied by an echo vowel. In every case, the syllable-final consonant is also pharyngealized.

k[áçh̥]çgá ~ k[áçʕ]çgá ~ k[áç]çgá bitterness

With these phonetic realizations in mind, it is appropriate to evaluate each of the three interpretive possibilities listed above.

2.3.3.2.2 Factors supporting a consonantal interpretation

Four factors support a consonantal interpretation for pharyngealization in Mambay.

First, and most obviously, a consonantal quality is evident in most phonetic realizations of pharyngeal articulations (this is shown in the examples immediately above). According to this line of reasoning, pharyngealization found on vowels (and, in some cases, on other consonants in the same syllable) would be interpreted as a phonetic effect of an adjacent or nearby pharyngeal consonant. In addition, the optional presence of an echo vowel after the point of greatest consonantal closure is in keeping with the articulation of the consonant **g** in coda position (2.1.6.1).

A second factor in favour of a consonantal interpretation is the attractive possibility that pharyngeal articulations reflect the realization of **h** in coda position. This is the conclusion given by Eguchi (1971:147–8).

A third argument is based on morpheme-internal distributional patterns: namely, glottalized consonants never follow pharyngeal articulations (2.3.1.2). This is parallel to

the morpheme-internal prohibition on glottalized consonants following other consonants (2.1.2.6).

A final point in favour of a consonantal interpretation for pharyngealization relates to the acceptance of complex onsets in the language (2.4.2). As is shown in the examples above, a pharyngeal articulation may precede another coda consonant. If complex onsets—and ones in which the C position next to the nucleus is restricted to a subset of the consonant inventory—are permitted in the language, then why not complex codas, which would be a near-mirror image of the onsets?

2.3.3.2.3 Factors supporting a vocalic interpretation

There are also two substantial arguments which support the interpretation of pharyngealization as an inherent quality of a subset of the vowel inventory.

First, and even more decisive than the equivalent argument given for consonants, is the point that whenever it occurs, the phonetic realization of pharyngeal articulations is always found at least on vowels. According to a vocalic interpretation, although pharyngealization is underlyingly vocalic, it may be phonetically realized with an accompanying consonantal quality in some environments (cf. 2.3.3.2.1).

Second, pharyngealization occurs with only three of the five oral vowel positions, and with three nasalized vowels (two of which have a different underlying place of articulation than unmodified vowels) (2.2.1). The fact that pharyngealization is found with specific vowels corresponding to all five of the basic vowel positions, but not with any complete oral or nasalized set of five vowels, suggests that it is an inherent quality of the vowels with which it is found.

2.3.3.2.4 Arguments against a consonantal interpretation

Several arguments of varying significance highlight difficulties with a consonantal interpretation of pharyngealization.

First, if pharyngeal consonants were accepted, two additional syllable shapes would have to be accounted for: CVCC and CCVCC (incidentally, because of the lack of vowel length contrast in pharyngeal articulations (2.2.1), no C(C)VVCC syllables would arise). Still, the existence of CC onsets is itself the result of an interpretation; and, based on ambiguous data, the positing of configurations which necessitate the recognition of additional syllable shapes cannot be done lightly.

C(C)VCC syllables, of which there would be many if one were to follow a consonantal interpretation of pharyngealization, would contain three segments in the syllable rhyme. In this respect, they would be comparable to CVVC syllables, which are superheavy (i.e., three-mora; cf. 2.4.3), since all vowels and coda consonants contribute a unit of weight in Mambay (2.4.3). However, there are very few (only five) unambiguous examples of morphemes containing CVVC syllables (2.4.3). Elsewhere, a constraint against morpheme-internal superheavy syllables holds sway. And although superheavy syllables arise in some complex morphological contexts, they are resisted in others (see, for

example, the plural form of **wàá** ‘hump’ in the following paragraph). The general constraint against superheavy syllables, then, should be considered when positing additional syllables of this type.

If C(C)VCC syllables were, after all, accepted as part of the inventory, one might expect that other glide-like consonants be allowed to fill the first coda position. However, semivowels **y** and **w** are never followed by another consonant in the same coda. Also, in plural constructions, morphemes ending in glides **y** and **w** or other consonants consistently avoid the insertion of **r** or **l** that is obligatory in pharyngeal rhymes without an additional consonant, and that also occurs often with syllables containing long vowels (5.5.2.1), as shown in the following examples:

syllables with pharyngeal rhymes and long vowels:

vâh + **-zV** → **vâhlzà**
 arrow PL arrows

wàá + **-zV** → **wàlzá**
 hump PL humps

cf. syllables ending in semivowels and other consonants:

kăw + **-zV** → **kàwzá** (*kàwlzá)
 frog sp. PL frogs (sp.)

kâŋ + **-zV** → **kâŋzà** (*kâŋlzá)
 bowstring PL bowstrings

A further factor which weakens a consonantal interpretation of pharyngealization is a constraint on the distribution of vowels before the purported pharyngeal consonant. In contrast to the regular gaps in the distribution of vowels before semivowels within syllable rhymes (2.3.1.1.3), restrictions on vowels before a pharyngeal consonant would be odd: while underlying high vowels are absent from the oral inventory, underlying mid vowels are absent from the nasal inventory (cf. 2.2.1). This shows that even if a pharyngealized consonant avoids co-distribution with high vowels, it accepts a high vowel under the pressure of the language-wide constraint against nasalized mid vowels (3.1.1).

A final argument against a consonantal interpretation comes from observations of errors Mambay speakers already literate in French, Fulfulde and in some cases, Mundang, make when learning to write their own language. In the standard Mambay orthography (1.3.3), word-initial **h** is written as **h**, and syllable rhymes with a pharyngeal articulation are written **Vh** (i.e., **eh**, **ah**, **oh**, etc.). Although no systematic errors are made when writing **h** in syllable onsets, it is common that subjects write long (orthographically double) vowels in place of **h** in pharyngealized syllable rhymes (in particular, those with no

additional coda consonant). The number of segment places is still correct, but there is no consonant marked there. If pharyngealization were the realization of **h** in syllable codas, one would not expect this systematic error. This situation may also show that pharyngeal articulations are not perceived as underlyingly consonantal: if a consonantal interpretation of pharyngealization is upheld, it is difficult to account for the systematically erroneous writing of a double vowel rather than the coda consonant symbol used in the standard orthography.

2.3.3.2.5 Arguments against a vocalic interpretation

Although the factors supporting a vocalic interpretation of pharyngeal articulations are less decisive than those supporting a consonantal interpretation, the arguments against a vocalic interpretation are less numerous.

Crucially, following an interpretation of pharyngealization as an inherent quality of some vowels in the inventory, there is no contrast between short and long pharyngealized vowels. In itself, this is not problematic, and evidence could be gathered which would indicate whether pharyngealized vowels are short or long. For example, they occur in nouns comprised of an open syllable, a structure never attested with a short vowel (in other words, there are no CV nouns in the data; see 5.1.1.1):

fâh	path
kăh	placenta
vbăh	large mixing stick

In addition, they are commonly found in closed syllables, an environment where, with the exception of five non-canonical words (2.4.3), long vowels are not found unambiguously. A selection from the numerous words in which pharyngeal vowels are found in closed syllables is as follows:

dĭht	warbler
fêhm	fish sp.
gâhlbó	soldier
kâhlgá	bitterness
kăhm	wool
róhlgóm	joint (body)
rôhŋgá	smoothness, slipperiness

In sum, the interpretation of pharyngealized vowels as either uniformly long or uniformly short is problematic. It is precisely this problem which the consonantal interpretation of pharyngealization given above attempts to resolve by positing additional syllable types.

2.3.3.2.6 A suprasegmental interpretation of pharyngealization

Because of the drawbacks associated with consonantal and vocalic interpretations of pharyngealization, it is instructive to consider a suprasegmental interpretation of the issue.

In one case, pharyngealization could be viewed uniquely as a feature that associates with syllable rhymes or even syllables as a whole. Such an explanation corresponds to facts relating to the wide-ranging realization of pharyngealization within syllables (2.1.6.3, 2.3.3.2.1); however, since these realizations are predictable, it is not necessary to invoke pharyngealization as an independently operating feature. A suprasegmental solution would be preferable if there were evidence of long-distance alignment or spread of pharyngealization among units on the same tier (such as vowels with vowels, or consonants with consonants), but in the data there is no evidence of this.

Alternatively, pharyngealization could be viewed as a feature usually hosted by a contrastive pharyngeal consonant but one which is hosted by a vowel when the syllable is closed. This alleviates a major concern of the consonantal interpretation, namely the positing of complex codas. However, the dual identity (consonant and feature) of pharyngealization is unsettling, especially since there are no demonstrably contrastive pharyngeal consonants in the language, even in syllable onsets. Finally, because of the other concerns mentioned for a consonantal interpretation, this solution is less than ideal.

2.3.3.2.7 Conclusion

In sum, none of the interpretations of pharyngealization is without significant limitations. For the remainder of this study, the interpretation of pharyngealization as an inherent quality of some vowels in the inventory has been employed. In regard to CV structure, pharyngealized vowels in open syllables are treated along with long vowels, and in closed syllables these vowels are treated along with short vowels. The possibilities for phonetic realizations given in 2.3.3.2.1 above suggest, but do not prove, that this reading may be phonologically suitable. Additionally, this convention respects the commonly attested morpheme structures for each word class.

2.3.3.3 Glottal articulations in syllable rhymes

The interpretation of glottal articulations in syllable rhymes presents many of the same possibilities and challenges as the interpretation of pharyngeal articulations (2.3.3.2). While evidence from a variety of areas has been examined, there is no single clear interpretive solution that emerges.

Interpretive possibilities allow that glottalic articulations pattern as one of several structures:

1. an inherent quality of a glottal or preglottalized consonant;
2. an inherent quality of glottalized vowels; or
3. a suprasegmental glottalic feature which associates with larger units such as syllable rhymes or syllables.

Additionally, it should be noted that Bohnhoff (1976:26–9, 1987:15–6), who has tackled a comparable issue with Duru / Yag Dii in north-central Cameroon, posits structurally discrete “double vowels.” However, his conclusion has yet to be successfully integrated into a theory of segment and syllable structure (cf. Segerer 1995:69–75).

In the analysis that follows, the distribution and phonetic realizations of glottalic articulations are described (2.3.3.3.1). Complexities pertaining to the behaviour of glottalic articulations in unambiguously closed syllable rhymes are given special attention (2.3.3.3.1.1). Two consonantal interpretations (0) are contrasted with a vocalic interpretation of the issue (2.3.3.3.3). The issue is concluded in 2.3.3.3.4.

2.3.3.3.1 Distribution and phonetic realizations

In syllable rhymes, glottalic articulations are realized in various ways depending on the environment in which they are found. Three pertinent environments, each with its own characteristic phonetic realizations, are: non-utterance final syllable rhymes which could be interpreted as open; utterance-final syllable rhymes which could be interpreted as open; and syllable rhymes which are unambiguously closed. In each environment, there are striking similarities with the phonetic realizations associated with pharyngealization (2.3.3.2.1).

In a non utterance-final syllable rhyme which is otherwise open, a glottalic articulation is realized with at least a glottalized vowel. In some cases, there is glottal closure. In addition, a glottalized echo vowel optionally follows the glottal closure in this position. (Transcriptions are arranged from slow, careful speech to fast, casual speech).

$k[\text{ù}ʔ]r\grave{a} \sim k[\text{ù}ʔ^{\text{h}}]r\grave{a} \sim k[\text{ù}:]r\grave{a}$ melon

In an utterance-final syllable rhyme which is otherwise open, glottal closure after the glottalized vowel is obligatory, and a glottalized echo vowel is optional in fast speech.

$k[\text{ú}ʔ] \sim k[\text{ú}ʔ^{\text{h}}]$ sand

In an unambiguously closed syllable, there are two types of glottal articulations. In glottal articulations where the syllable-final consonant is glottalized or has a glottalized counterpart, there is always glottalization on a vowel and a coda consonant, and there is an optional glottal closure between the two segments; however, there is no vocalic articulation after the closure (see 2.1.6.2).

$d[\text{è}ʔ\text{m}] \sim d[\text{è}\text{m}]$ comment (v.)

Otherwise, there is variation between a lack of complete glottal closure and an open transition (echo vowel) between the glottal closure and the syllable-final consonant.

$[\text{ʔ}^{\text{h}}\text{á}\text{ʔ}^{\text{h}}\text{r}]v\grave{a} \sim [\text{ʔ}^{\text{h}}\text{á}\text{r}]v\grave{a}$ run (VN) (cf. $\text{ʔ}^{\text{h}}\text{á}$ ‘run (perfective)’; this and similar examples are analyzed in 0)

At this point, it is appropriate to address further complexities regarding glottalic articulations in unambiguously closed syllable rhymes (2.3.3.3.1.1), since these have major implications for the interpretation of glottalic articulations elsewhere.

2.3.3.3.1.1 Description of glottalic articulations in closed syllable rhymes

A detailed account of glottalic articulations in unambiguously closed syllable rhymes is an important step toward their interpretation in general.

Obstruents appear to be absent in rhymes with glottalic articulations. Consonants which are permitted may be divided into two categories. The first category contains consonants which are glottalized or, alternatively, have a non-glottalic counterpart (see the discussion in this section below). These consonants, shown in the context of glottalized syllable rhymes, are as follows:

y, y	t[$\underset{\sim}{\text{a}}\text{y}$] ~ t[$\underset{\sim}{\text{a}}\text{?y}$]	sway rhythmically
w, 'w	n[$\underset{\sim}{\text{a}}\text{w}$] ~ n[$\underset{\sim}{\text{a}}\text{?w}$]	spank
m, 'm	d[$\underset{\sim}{\text{e}}\text{m}$] ~ d[$\underset{\sim}{\text{e}}\text{?m}$]	comment (v.)
n, 'n	g[$\underset{\sim}{\text{u}}\text{n}$] ~ g[$\underset{\sim}{\text{u}}\text{?n}$]	accompany
ŋ, 'ŋ	s[$\underset{\sim}{\text{u}}\text{ŋ}$]gá ~ s[$\underset{\sim}{\text{u}}\text{?ŋ}$]gá	razor
(p/b), ḃ	s[$\underset{\sim}{\text{a}}\text{p}^{\text{̣}}$] ~ s[$\underset{\sim}{\text{a}}\text{?p}^{\text{̣}}$]	vomit
(t, d), ḏ	y[$\underset{\sim}{\text{a}}$] ~ y[$\underset{\sim}{\text{a}}\text{?}$]	feel, rub

Importantly, there is no contrast between glottalic and non-glottalic consonants in syllable rhymes which contain glottalic articulations.

While the symmetry between the first five pairs of non-contrasting consonants is clear, non-glottalic counterparts of **ḃ** and **ḏ** need further explanation. In this context, **p/b** is not an ideal non-glottalic counterpart for **ḃ**, nor is **t** or **d** for **ḏ**, since no obstruents are found unambiguously in this glottalic environment. Interestingly, **l** is a preferable candidate for the non-glottalic counterpart of **ḏ**. There are five reasons for this:

- 1) **l** is not an obstruent, and is therefore (in contrast to **t** and **d**) not barred from glottalic syllable rhymes;
- 2) **ḏ** is realized as **?l** in codas (2.1.6.2);
- 3) **Vḏ** does not contrast with **V'l** in rhymes;
- 4) verbs which appear to contain a historical verbal extension **-l** on a glottalized verb root (7.2) exhibit the same phonetic realization;
- 5) there is no open transition realization of **V'l** in syllable rhymes parallel to that of **V'r** (see the next paragraph as well as the following section).

The second category of consonants is limited to **r**. Glottalized syllable rhymes with **r** differ from those with other consonants in three ways. First, **r** is the only non-glottalic sonorant consonant found in syllable codas that does not have a glottalic counterpart in the phonology. Second, the phonetic realization of **r** in a glottalized rhyme is unique. Unlike other consonants, when glottal closure is employed, it is accompanied by an open transition consisting of a glottalized echo vowel. It is an open question whether

differences in its realization are the product of a contrastive phonological identity or whether they are a phonetic consequence of its rhotic or periodic (exhibiting repeated movement) articulation. Third, unlike other consonants in the same position, it is extremely uncommon; its distribution is restricted to four irregular verbal nouns (see the following section for further discussion).

2.3.3.3.2 Consonantal interpretations of glottalization

Two types of consonantal interpretation are available for glottalic articulations in syllable rhymes. While the first interpretation is relevant for all syllable rhymes, the second interpretation is relevant in particular for glottal articulations in closed syllable rhymes.

The first interpretation is that glottalic articulations in this position are contrastive realizations of an independently occurring glottal stop. This interpretation is, on the whole, acceptable for glottalic articulations in open syllables. It reflects the consonantal quality found in some realizations of such utterances (2.3.3.3.1). Also, as is the case for pharyngeal articulations (2.3.3.2), the optional presence of an echo vowel after the point of greatest consonantal closure is reminiscent of the articulation of the unambiguously consonantal **g** in coda position (2.1.6.1). Notably, an interpretation in which glottalic articulations in syllable rhymes are consonantal also respects the positing of a contrastive glottal stop at morpheme boundaries (2.1.4.1). There are even two situations in which a glottal stop at a morpheme boundary alternates with a glottal articulation in a syllable rhyme²:

sá' -	+	n	→	sàʔán
buy		CAUS		sell
tí-	+	ʔízà	→	tí'zà
AUG		(female name)		(female name, respect form)

One objection to this first consonantal interpretation, that of evidence from writing errors, is parallel to that presented in the discussion on a consonantal interpretation of pharyngealization (2.3.3.2.4). As stated above, observations have been made concerning the errors Mambay speakers already literate in French, Fulfulde and in some cases, Mundang, make when learning to write their own language. In the standard Mambay orthography (1.3.3), the contrastive morpheme-initial glottal stop (2.1.4.1) is not written, and otherwise open syllable rhymes with a glottalic articulation are written Vʔ. When writing an open syllable rhyme with this articulation, it is common that subjects write a long (orthographically double) vowel (VV) rather than a glottalized vowel (Vʔ). This may indicate that glottalic articulations in such syllable rhymes are perceived as vocalic rather than consonantal.

² The first of these alternations is productive and occurs whenever a suffix consisting of a nasal consonant is added to a root ending in a glottalic rhyme (6.1.4.2.1, 7.2.3.1, 7.3.1.2.1, 7.3.1.5.1); the second (5.12.1.1) is idiosyncratic. Also, the first applies in one direction and the other in the opposite direction.

A similar objection to a consonantal interpretation of glottalic articulations originates in an observation on the language style used in Mambay choral music (this style includes both traditional dance music and church music). Importantly, in choral lyrics there is no glottalic quality in open syllable rhymes, even in articulations which in spoken language are glottalic. In other words, open glottalic rhymes are sung as unmodified vocalic rhymes. This differs from morpheme-initial glottal stops and preglottalized consonants, where glottalic articulations are retained in singing.

This first interpretation, where glottalic articulations in this position are contrastive realizations of an independently occurring glottal stop, is faced with a major difficulty in unambiguously closed syllables. As is the case for a consonantal interpretation of pharyngeal articulations, it would lead to the creation of CC codas and, consequently, the recognition of new superheavy syllable types (cf. 2.4.3). For example, the word **d[ɛ̃m]** ~ **d[ɛ̃ʔm]** ‘comment (v.)’ would be interpreted as a CVCC sequence **d-è-ʔ-m** (or **d-è-ʔ-'m**). The positing of such syllables causes the same difficulties as have been discussed in 2.3.3.2.4.

However, a second possibility exists for a consonantal interpretation of glottalic articulations in unambiguously closed syllable rhymes: namely, that glottalization is part of the coda consonant (V-'C). Importantly, this rhyme sequence never contrasts with V²-C or V²-'C rhymes. A review of attested glottalic articulations in such syllables (2.3.3.3.1.1), when compared with the inventory of contrastive glottalized consonants (2.1.1), shows that in the vast majority of cases, a closed glottalic rhyme could be interpreted as an unmodified vowel followed by a preglottalized consonant. Thus, a word like **d[ɛ̃m]** ~ **d[ɛ̃ʔm]** ‘comment (v.)’ would be analyzed as a CVC sequence **d-è-'m**.

The only difficulty facing this interpretation is the presence of four irregular verbal nouns in the data, in which a glottalic articulation accompanies the consonant **r** within a syllable rhyme (there are no other words with this configuration):

[ʔá̃r]và ~ **[ʔá̃ʔ^{á̃}r]và** run (VN) (cf. **ʔá̃'** (perfective))

'm[í̃r]và ~ **'m[í̃ʔ^{í̃}r]và** go down (VN) (cf. **mí̃'** (perfective))

k[í̃r]và ~ **k[í̃ʔ^{í̃}r]và** grow to a gigantic size (VN) (cf. **kí̃'** (perfective))

m[á̃r]và ~ **m[á̃ʔ^{á̃}r]và** make a sound (VN) (cf. **má̃'** (perfective))

These four examples are ambiguous, and it is evident from the consonant inventory presented in 2.1.1 that there are no unambiguous examples of a contrastive preglottalized counterpart '**r**'. Thus, a CVC interpretation is problematic for CV'**r** rhymes, which in addition exhibit phonetic characteristics slightly different than those containing other consonants in the same position (2.3.3.3.1.1). If a CVC analysis is adhered to for all other glottalized articulations in closed rhymes, three possibilities are available to account for CV '**r** sequences:

- 1) even though 'r only occurs ambiguously, it should be classified as part of the consonant inventory;
- 2) the four words with CV'r rhymes should be analyzed as containing exceptional CVCC syllables; or
- 3) the verbal nouns in which CV'r rhymes are found should be analyzed as morphologically complex.

The first explanation is obviously weak, since contrast or another strong argument should be demonstrated for each segment in the consonant inventory. The second explanation exhibits the same weakness in relation to the syllable inventory (note that, if adhered to, it would create additional ambiguity by alleviating the necessity of a CVC interpretation for other unambiguously closed glottalic syllable rhymes).

The third explanation, however, deserves further consideration; and since CV'r rhymes are only found in four words, it is useful to examine these words. One pattern that emerges is that all four words have a nasalized first syllable. While there may be a historical explanation for this, nasality does not appear to provide insight into the preferability of any of the three interpretations. More promising in this regard is the likelihood of morphological complexity. All four words are irregular verbal nouns and, as shown in their presentation above, each may be identified with a source verb stem. However, in the description of verbal nouns (5.9.2), it is stated that fossilized verbal nouns are structured in (almost) the same way as other nouns, including the historical noun suffixes that are found with most of them. Although there are correspondences between irregular verbal nouns and the verbs from which they originate, these correspondences are varied and in many cases idiosyncratic. Consequently, the morphological boundary between verbal noun root and verbal noun suffix is probably better considered a historical boundary.

In the end, the third explanation does not provide a way out of the interpretive difficulties which CV'r sequences pose to a consonantal interpretation of glottalic articulations. It is possible that, as suggested by the second explanation, CVCC syllables have arisen or are arising in the language as a result of morphological reconfigurations driven by historical processes such as that which has generated irregular verbal nouns.

2.3.3.3.3 A vocalic interpretation of glottalic articulations

The most basic argument in support of a vocalic interpretation for glottalic articulations in syllable rhymes is the fact that such articulations are always realized at least on vowels. A vocalic interpretation maintains that although glottalic articulations are underlyingly vocalic, they may be phonetically realized with an accompanying consonantal quality in some environments (cf. 2.3.3.3.1).

Simply put, the only other factors in support of a vocalic interpretation are those which stand in opposition to a consonantal interpretation (0).

One oddity resulting from a uniform vocalic interpretation of glottalic articulations in syllable rhymes is a complete absence of preglottalized consonants in this position. In

cases where preglottalized consonants in syllable onsets are resyllabified as coda consonants due to morphophonological processes (see especially the free/linked alternation of nouns in 5.2.2.2), the glottalic quality of the rhyme would be reassigned to the preceding vowel (recall phonetic realizations and the discussion of the relationship between **ɗ** and **l** specified in 2.3.3.3.1.1):

páɓà milk	+ ʔíí 1SG.POSS	→ *pâ'b ʔíí my milk (cf. preferable form pâɓ ʔíí)
wáɗà <i>boule</i> with sauce	+ ʔíí 1SG.POSS	→ *wâ'l ʔíí my <i>boule</i> with sauce (cf. preferable form wâɗ ʔíí)

This is unfortunate, because it promotes a phonological identity for these coda consonants which is less defensible than one where a glottalized consonant retains its identity even when it has been reassigned to a new syllable position. In addition, it masks the phonetically salient contrast between glottalized vowel / non-glottalic consonant and non-glottalized vowel / preglottalized stop sequences across a syllable boundary (2.3.2).

Also, as is the case for pharyngealized vowels (2.3.3.2), there would be no contrast between short and long glottalized vowels. Further, it would be unclear whether these vowels which do not have a contrast in length were underlyingly short, long, or both. What would be interpreted as glottalized vowels are found in some environments in which short vowels are never found, such as nouns consisting of a single open syllable (5.1.1.1):

fǎ'	mouse sp.
kâ'	medicine, care
nǎ'	side chamber

In contrast, with an across-the-board vocalic interpretation these vowels would be found in closed syllables, an environment where, with the exception of five non-canonical words (2.4.3), long vowels are not found unambiguously. Example words containing syllables which would have to be interpreted as long vowels followed by a consonant have been given in 2.3.3.3.1.1 above.

2.3.3.3.4 Conclusion

In sum, each interpretation of glottalic articulations is significantly limited. While arguments in favour of a consonantal interpretation are stronger than those for a vocalic interpretation, so are objections toward it. Also, as is the case for pharyngealized vowels, a suprasegmental interpretation does not provide additional insight into the issue. Bohnhoff's (1976, 1987) ad hoc positing of structurally discrete "double vowels" is a convenient interpretation, but has yet to be integrated into a theory of segment and syllable structure.

For the remainder of this study, a split interpretation has been followed in regards to length. For syllables which are otherwise open, glottalic articulations have been

interpreted as long glottalized vowels phonologically parallel to pharyngealized vowels (2.3.3.2). In light of the lack of contrast between V'-C, V-'C and V'-'C rhymes, and considering the identical articulation of these syllable rhymes with those containing unambiguous preglottalized stops in syllable onsets which have been resyllabified as codas (2.1.3.2), glottalic articulations in closed syllable rhymes with consonants other than **r** are treated as short unmodified vowels followed by glottalic consonants. Syllable-final V-glottal-**r** sequences, which do pattern neatly with either of these other groupings (0), are treated as short glottalized vowels followed by a non-glottalized consonant.

2.3.3.4 Rhymes ending in high vowels and semivowels

There is no contrast between syllable rhymes ending in high vowels and those ending in semivowels (non-glottalized or glottalized). Rhymes which exhibit a single place of articulation are interpreted as long vowels rather than VC sequences. This interpretation assures that the inventories of long and glottalized vowels (2.2.1) are complete.

ii/iy	sî sîgó	valley, river mosquito larva
uu/uw	kúù kúúra	fields, bushland hunt (n.)
i'/iy'	sí' sí'là	fish (v.), bloat cold (n.)
u'/u'w	kû' kû'rá	sand melon

All attested rhymes in which the vowel's place of articulation differs from the unit which follows it are ambiguous, since they contain a high element which could be semivocalic rather than vocalic. In order to avoid the positing of non-identical vowel sequences based on ambiguous data, these rhymes are interpreted as VC sequences, since VC rhymes occur commonly in the language (2.4.1). Examples of each attested sequence are given below; whenever possible, both morpheme-final and morpheme-internal examples are shown.

ei/ey	wéy nà-lêyrá	virginity grinding, command
ai/ay	făy	fish sp.
eu/ew	nà-gbéhwrà	wild hibiscus sp.
au/aw	kăw gáwrà	frog sp. savannah

ou/ow	támbyòw	billy goat
a'i/ay	kpà̀y	swing the hips
i'u/i'w	kpí'wsí	shallow
e'u/e'w	kpé'wrà	melon
a'u/a'w	nà'w	spank (v.)
	tâ'wgá	rope
o'u/o'w	kyô'w	warthog, pig

Reasons for distributional gaps in attested vowel-semivowel sequences are given in 2.3.1.1.3.

2.4 Syllable structure

A number of syllable shapes are attested in Mambay, and some of them are reasonably complex. In the present section, an inventory of allowable syllable shapes is provided (2.4.1). This is followed by a description of syllable structure (2.4.2) and a discussion of syllable weight (2.4.3).

2.4.1 Inventory of syllable shapes

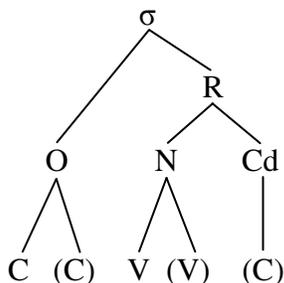
The following syllable shapes are found in Mambay:

CV	gé	get lost	CCV	syè	shine
CVV	dée	chop	CCVV	gyáá	take out, gather up
CVC	dím	faint	CCVC	bwàr	untie
CVVC	faáw	light (weight)			

Words containing examples of attested syllable shapes are found in relevant sections at the beginning of descriptions of each word class (Chapters 6–9).

2.4.2 Syllable structure

Syllables (σ) contain three parts: onset (O), nucleus (N), and coda (Cd). Together, the nucleus and coda constitute the rhyme (R) of the syllable. Possible syllable structures in Mambay are accounted for in the following diagram:



As the diagram shows, all syllables are found with a consonantal onset. Syllable onsets may be simple, consisting of a single C, or complex, in which case they are comprised of a CC sequence (see 2.3.3.1). The lack of V-initial syllable shapes in the inventory is in keeping with the interpretation of the glottal stop as a contrastive unit (2.1.4.1).

A syllable nucleus contains a single vowel. This vowel is either short (V) or long (VV) (2.2.3.1).

Codas are optional syllable constituents. When they occur, they contain a single C. Although the vast majority of codas are found following a V nucleus, a few morphemes exhibit syllables containing codas after a VV nucleus (2.4.3 below).

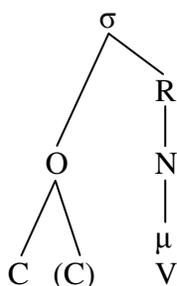
The maximal potential syllable CCVVC, which contains a complex onset, a long vowel and a coda, is not attested in the data.

2.4.3 Syllable weight

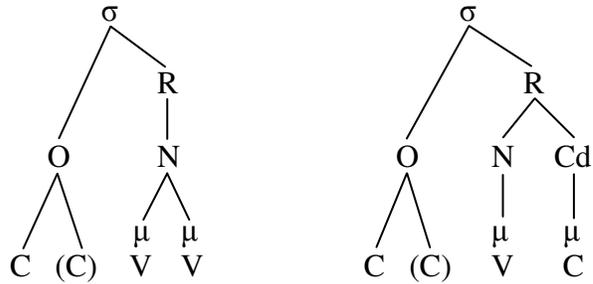
In Mambay, syllables may be light, heavy or superheavy.

In Mambay, each segment in a syllable rhyme contains a single unit of weight, called a mora (μ) (cf. Broselow 1995). A light syllable contains a single mora, and a heavy syllable contains two. Superheavy syllables, which are uncommon, contain three morae (see Broselow 1995:202 for other descriptions which appeal to more than two morae; see also the Mambay example in this section below). These structures may be schematized with reference to syllable weight as follows:

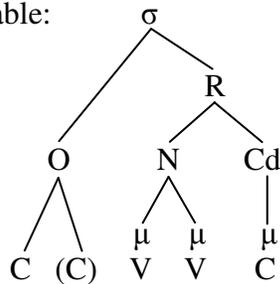
light syllable:



heavy syllables:



superheavy syllable:



While light and heavy syllables are common, five non-canonical (cf. 1.3.1) morphemes in the data contain a superheavy syllable:

fááw̃	light (weight)
fííí	(sound of fingers wiping a plate clean)
nà-táállá	ant sp.
rùùgè	cylindrical shape
tí-tòòntî	lark (bird sp.)

However, superheavy syllables also arise when stems take suffixes comprised of a consonant:

fàà	+	-m̃	→	fààm̃	your (sg.) back, skin (inal.) (cf. 6.1.4.2)
back:LF		2SG.POSS.INAL			
làà	+	-ń	→	lààn	feed (i.e., cause to eat; cf. 7.2.3.1)
eat:PFV		CAUS			

The defining of syllable weight is useful for two reasons. First, distribution of syllables in words is constrained by the weight of the syllables (see the distribution sections in each chapter). Second, syllable weight is central to an understanding of the tone system, since tones associate with the morae which are made available by segments in syllable rhymes (4.1.2.1). While a light (one-mora) syllable may bear only one tonal unit, two tonal units may be associated with a heavy syllable, and up to three with a superheavy syllable. An instance of the mapping of three tonal units on a superheavy syllable is as follows:

	HLH
	μ μ μ

yáà-m̃
 move.away:PERF-2SG.REFL

in: m̃yáà-m̃ ‘you have moved away’

2.5 Word structure

Many word structures are attested in Mambay. The diversity in allowable forms is in keeping with a rich syllable inventory (2.4.1), the fact that morphemes of more than one syllable are allowed in the language (see following paragraph), and inflectional and derivational morphology. Word structure, for which association of a single tonal melody is the primary defining criterion in this study (cf. 4.1.2, especially 4.1.2.3), varies according to morphological class and is therefore addressed in the relevant sections in chapters on each word class.

Minimally, a phonological word is comprised of a single morpheme. Morphemes range in shape from a single light syllable to several syllables. While verbs and some minor word classes exhibit some monomorphemic words comprised of a light syllable, nouns are minimally comprised of a heavy syllable (5.1.1.1). Monomorphemic nouns in particular may contain three syllables, more than one of which may be heavy.

For a number of word classes, derivational morphology results in the formation of complex stems. This is achieved through affixation (nouns and verbs), compounding (nouns), and the application of morphological templates (modifiers).

Inflectional morphology, which is found on nouns and verbs, allows further complexity in the structure of phonological words. Usually, but not always, nasality and tone function within composite phonological words in the same way they function within morphemes (3.4.3, 4.1.2.3).

Nasality in Mambay is a feature of vowels as well as consonants. It cannot be described with reference to only one or the other; there are numerous examples of words in which nasality is only found on consonants, or only on vowels (see 3.4.1).

Nasality is found with short as well as long vowels (3.1), and may co-occur with pharyngealization and glottalization. However, restrictions on nasalized mid vowels result in the limitation of nasality to a subset of the vowel inventory (3.1.1).

Consonants may be split into the basic categories of obstruents, which cannot bear nasality, and sonorants, which can (3.2). In particular, sonorants are divided into several types based on their behaviour in reference to nasality.

Two issues relate to nasality on vowels as well as consonants: degrees of phonetic nasalization, and effects of vocalic nasality on oral consonants (3.3).

Nasality exhibits consistent distributional patterns. The domains in which nasality is found are described within syllables, within morphemes and across morpheme boundaries (3.4).

In the phonological orthography used throughout this study (1.3.3), a cedilla³ is used to mark nasalization on vowels. In the phonetic transcriptions in this chapter, phonetic detail is limited to issues pertaining to nasality; otherwise, the phonological orthography is used.

3.1 Vocalic nasality

Several sets of contrastively nasalized vowels are found in Mambay (2.2.1). Both short and long nasalized vowels are found. Also, nasalization on vowels may co-exist with pharyngealization and glottalization. In the latter situations, however, there is no contrastive distinction for length (cf. 2.2.1, 2.3.3.2, 2.3.3.3). Contrast between oral and nasalized vowels as well as contrast among nasalized vowels is established in 2.2.1 and 2.2.3. As shown earlier (2.2.1), the four sets of nasalized vowels are:

³ The use of the cedilla to mark nasalization is in keeping with the conventions established in Tadadjeu and Sadembouo's (1984) *Alphabet générale des langues camerounaises* as well as that which is used for the standard Mambay orthography (1.3.3). For this reason, and due to limitations in available fonts at the time of research, other conventions such as the typographically similar Polish hook (also known as the ogonek), the tilde and the under-tilde (cf. Pullum and Ladusaw 1996:254–5, 261) have not been adopted.

short nasalized vowels:

ĩ **ụ**
ɔ̣

vowels with nasalization
and glottalization:

ĩʔ **uʔ**
ɔʔ

long nasalized vowels:

ĩĩ **ụụ**
ɔ̣ɔ̣

vowels with nasalization and
pharyngealization:

ĩh **uh**
ɔh

The vowel **ɔ** also appears in two morphemes in the data (see 3.1.2).

3.1.1 Restrictions on nasalized mid vowels

The most prominent restriction on the inventory of nasalized vowels is a near-absence of nasalized mid vowels in morphologically simple items; with only two exceptions (3.1.2), no mid vowels are nasalized—either contrastively or non-contrastively. Even pharyngealized vowels, which in oral contexts are phonologically mid (2.2.4), are high when associated with nasality.

An indicator that nasalized mid vowels are also disfavoured in morphologically complex contexts is found with the linked forms of nouns in noun phrases (5.2.2). For nouns ending in a **Cy-** or **Cw-**plus-low vowel sequence, the sequence in the corresponding linked form is usually levelled to **C-plus-mid** vowel. However, sequences in nouns ending in **Cyɔ̣** or **Cwɔ̣** are changed to high vowels rather than mid vowels (see 5.2.2.2.2).

	kyạ́	+	?ĩĩ	→	kĩĩ ?ĩĩ
	container		1SG.POSS		my container
cf.	tyạ́	+	?ĩĩ	→	téè ?ĩĩ
	fish sp.		1SG.POSS		my fish sp.
	kwạ́	+	?ĩĩ	→	kúỵ ?ĩĩ
	fly		1SG.POSS		my fly
cf.	kwạ́	+	?ĩĩ	→	kóò ?ĩĩ
	grass		1SG.POSS		my grass

In addition to conforming to the language’s patterns of the distribution of nasality (3.4), the following borrowings show the same intolerance for mid vowels in a nasal environment:

tí-ríírì onion (cf. Fulf. *tinyeere*)
tí-búúnújè date (fruit) (cf. Fulf. *dibinooje* (pl.))

3.1.2 Exceptional nasalized mid vowels

A phonologically peripheral nasalized vowel **ɔ̃** is found in a morphologically simple context in two items in the data:

nògtí knead
tì-gó'mì wrinkle (n.)

Since **ɔ̃** is in each case found beside a nasal consonant, it is possible to attribute its nasality to the presence of the nasal consonant rather than to inherent nasality in the vowel. In any case, both interpretations highlight an inconsistency in the phonological system, since no other examples of a mid vowel are found in a morphologically simple environment where nasalization is obligatory (3.4.1, 3.4.2).

Nasalized mid vowels also arise in one morphologically complex environment: when the second person singular reflexive suffix is attached to a stem ending in a consonant or a short vowel, the second person reflexive suffix **-m̃** is realized as **-nṼm** (where V is a vowel which echoes the final vowel of the stem) (7.3.1.2.1).

mù b̃àr-ñám you got better
 2SG get.better:PFV-2SG.REFL

mù ñú-ñúm you had slept
 2SG sleep:PLUPERF-2SG.REFL

This process applies equally to mid vowels, which are restricted from bearing nasality in almost all other contexts (3.1.1). Taking this into consideration, the mid quality of the vowel and/or its nasality may better be viewed as an effect of its phonetic context rather than an underlying trait.

mù ʔèr-ñém you got up
 2SG get.up:PFV-2SG.REFL

mù r̃òv-ñóm you scalded yourself
 2SG scald:PFV-2SG.REFL

3.2 Consonantal nasality

Consonantal nasality functions as part of a complex system; consonants may be classified based on their behaviour in reference to nasality. A basic phonological division may be made between (oral) obstruents, which are not nasalizable, and sonorants, which are (cf. Le Saout 1973, Bole-Richard 1985, Kaye 1981, Creissels 1994:107 and Clements 2000:132).

If a complete analysis of contrast has not been done for consonants, it may appear at first that there is full complementarity between nasal sonorants and a corresponding set of oral sonorants, depending on the oral or nasal specification of adjacent vowels. Such analyses have been presented for other Niger-Congo languages (Le Saout 1973; Kutsch Lojenga 1976, 1985:3–4; Bole-Richard 1985:6; cf. Schadeberg 1982a). The possibility of an equivalent situation in Mambay is taken into consideration by the presentation of sonorants in the following chart (cf. the consonant chart in 2.1.1; non-contrastive phonetic realizations are included in square brackets):

manner \ place	labial	alveolar	retroflex alveolar	palatal	(labial-) velar
nasal glottalic series	'm	'n		['ɲ]	'ŋ
oral glottalic series	ɸ	ɗ		y	'w
nasals	m	n	[ɳ]	[ɲ]	ŋ
oral approximants		l	r [ɽ]	y	w

In actual fact, the situation is more complex than this. Five groups of consonants must be distinguished based on their behaviour in regard to nasality:

1. obstruents, which are inherently oral (3.2.1);
2. Type 1 sonorants, which are inherently nasal (3.2.2);
3. Type 2 sonorants, which are oral but which alternate with contrastive nasal counterparts (3.2.3);
4. Type 3 sonorants, which alternate non-contrastively for nasality (3.2.4); and
5. remaining consonants, for which there is insufficient evidence for placement in one of the other groups (3.2.5).

Contrast among consonants has been established in 2.1.2 and 2.1.3, but patterns of contrast and complementarity will be addressed in the following discussion. The distribution of these groups of consonants in syllables and larger units is discussed in detail separately in 3.4.

3.2.1 Obstruents

At one end of the spectrum, obstruents are inherently and necessarily oral. These consonants cannot be nasalized by the presence of an adjacent nasalized vowel or nasal sonorant.

b p t d k g kp gb f v s z

Examples of words with obstruents are as follows:

mààbá	tail hair, mane, trap
páàgá	dirtiness, black filth
vbààzá	fish sp.

3.2.2 Type 1 sonorants

Type 1 sonorants are at the other end of the nasality spectrum: they are inherently nasal. These consonants are as follows:

m n ŋ 'm 'n 'ŋ

Examples of words with Type 1 sonorants are as follows:

kpònrá	tibia (of animal)
ná-dó'mnà	anus
nàmá	meat, animal

Type 1 sonorants may not occur in the onset of a syllable with an oral vowel. However, they may be found in the coda of a syllable with an oral vowel, where they contrast with Type 2 sonorants, which are contrastively oral (3.2.3).

Interpretation and realizations of preglottalized nasals in particular have been addressed in 2.1.4.2 and 2.1.4.3.

3.2.3 Type 2 sonorants

Another group of contrastively oral sonorants, labelled Type 2, is as follows:

l ɓ ɗ

Examples of words with Type 2 sonorants are as follows:

ɓàrá	(female proper name)
ɗáá	find, succeed, have
làà	eat

Type 2 sonorants **l ɓ ɗ** contrast with Type 1 sonorants (i.e., nasals) in syllable codas (2.1.2.3). Contrast between the two groups is, however, neutralized in syllables which contain a nasalized vowel, since realizations are necessarily those of the nasal counterparts (**n 'm** and **'n** respectively; see 3.3.2.1) in this position.

3.2.4 Type 3 sonorants

A third group of sonorants alternates for nasality, but nasal vs. oral counterparts are never contrastive. These sonorants are nasalized in the presence of an adjacent nasalized vowel or contrastively nasal consonant (i.e., Type 1 sonorant), and only then. Type 3 sonorants are as follows:

r y y' w 'w

Examples of words with these sonorants are as follows:

mààrà	[mããǎǎ]	gift
'mâyá	['mãỹǎ]	fast (adv.)
nwǎh	[nũǎh]	wound

Type 3 sonorants exhibit an array of realizations based on nasality and position within a syllable. Oral realizations of this group of sonorants are presented in greater detail in 2.1.6, and nasal realizations are presented in 3.3.2.1 and 3.3.2.2. A summary is as follows:

Group 3 consonant	realization in oral onset	realization in oral coda	realization in initial nasal onset	realization in medial nasal onset	realization in nasal coda
r	[r]	[r]	[ǎ]	[ǎ]	[ř]
y	[y]	[y]	[ɲ]	[ỹ]	[ỹ]
y'	[ʔy]	[ʔy]	[ʔɲ]	[ʔỹ]	[ʔỹ]
w	[w]	[w]	[ŋ ^w]	[ũ]	[ũ]
'w	[ʔw]	[ʔw]	[ʔŋ ^w]	[ʔũ]	[ʔũ]

3.2.5 Remaining consonants

There is not adequate evidence to place the remaining Mambay consonants **h ʔ** and **vb** in any of the other categories with confidence. This is because (with the exception of **h** in one ideophonic noun: **bàhàà** ‘ibis sp.’) the three consonants are not found in nasalized word-medial environments where their distribution in relation to the minimal domain of nasality (in particular, two light syllables separated by Type 1 or Type 3 sonorants; see 3.4.2) may be observed. Phonetic evidence is ambivalent, since the voicelessness of the laryngeals **h ʔ** and the brief articulation of **vb** (cf. 2.1.8) makes a nasal value difficult to determine. Given that laryngeals such as **h** and **ʔ** are often considered to be unspecified for nasality (Kenstowicz 1994:146), they would likely behave as Type 3 (non-contrastively alternating) sonorants (3.2.4). There is no evidence in the language or (to the author’s knowledge) in accounts of other languages which could be confidently used to predict the potential behaviour of **vb**.

Similarly, the phonological identity of the peripheral borrowed consonants **j m b n d ŋ g** does not fall neatly into any of the above categories. As stated earlier (2.1.1), the words in which they are found in the data are all borrowed from Fulfulde. Since Fulfulde (and thus material of Fulfulde origin in the data) does not have nasalized vowels, it is not possible to confirm the behaviour of the borrowed consonants when they are adjacent to a nasalized vowel. The restriction of these consonants to positions in front of oral vowels

is therefore better considered a case of limited distribution. In sum, because the consonants **j** **m** **b** **d** **ŋ** **g** do not observably participate in the system of nasality, they will not be included into the present discussion.

3.3 Issues relating to vowels and consonants

Two topics in nasality which must be discussed in reference to vowels as well as consonants are degrees of phonetic nasality (3.3.1) and effects of nasality on oral consonants (3.3.2).

3.3.1 Degrees of phonetic nasality

Similar to what has been described in some related languages (Bentinck 1975:10–4, Ruelland 1992:26, Elders 2000:65), the researcher's impressions suggest that there are several degrees of phonetic nasality in Mambay.

Obviously, nasality is phonetically strongest on nasal and nasalized sonorants; there, it is always strongly articulated, even when the nasality originates from adjacent vowels rather than from the consonants themselves. This is especially evident in the nasalized realizations shown in 3.3.2.1.

On vowels, phonetic nasality is strongest on nasalized vowels which follow an oral obstruent.

In addition to being perceptually less salient, nasality seems to be more weakly articulated on vowels which follow a nasal or nasalized sonorant. It is weakest on short vowels which follow a nasal(-ized) sonorant, but it is also weak on long vowels in the same position. Along with articulatory factors, the weakness with which nasality is realized on these vowels could be attributable to the fact that nasality is automatic rather than contrastive in this context (3.4.1).

A final environment in which weak nasality appears is on phonologically oral vowels which precede a contrastively nasal sonorant. The conclusion that such vowels are not contrastively nasalized is supported by the occurrence of mid vowels, which resist nasalization (3.1.1).

3.3.2 Effects of nasality on sonorants

Nasality influences sonorants in different ways. Sonorants which are not inherently nasal (i.e., those which are not Type 1) are influenced by nasality in syllable onsets (3.3.2.1) as well as codas (3.3.2.2). Obstruents, on the other hand, are typically impervious to the effects of nasality (3.3.2.3).

3.3.2.1 Sonorants in syllable onsets

Sonorants which are not inherently nasal (i.e., those which are not Type 1) are influenced by nasality in syllable onsets. This is due to a constraint whereby the nasal value of a sonorant must be the same as that of the vowel which follows it (3.4.1). Although the phonetic consequences of this constraint are equivalent for Type 2 and Type 3 sonorants, their distributional status in this position falls into two groups.

For Type 2 sonorants **l b d** (3.2.3), there is contrast with Type 1 nasal counterparts **n 'm 'n** in codas but complementarity in syllable onsets. Contrast in codas is shown by the following data (see also 2.1.2.3):

Type 2 sonorants	Type 1 counterparts
l sèl dispute (v.)	n sìn pick up tiny things
b sàb vomit (v.)	'm dè'm comment (v.)
d gbùd germinate	'n bé'n first

Complementary distribution in onsets is reflected by the following data:

l làà eat	n náá touch
b bàrá (female proper name)	'm 'márá friend
d dáá find, succeed, have	'n 'náá stretch

There are no examples of Type 2 sonorants followed by a nasalized vowel, nor of their contrastive nasal counterparts followed by an oral vowel (see also 3.4.1).

l *làá	n *náá
b *bàrá	'm *'márá
d *dáá	'n *'náá

There is clear morphophonological evidence that **l** alternates with **n** when it comes under the influence of nasality across a morpheme boundary (3.4.3.3). Evidence from similar contexts shows that **b** alternates with **'m** (3.4.3.8.1) and **d** with **'n** (3.4.3.2). This suggests that in respect to nasality **l b** and **d** pattern sonorants rather than with obstruents.

For Type 3 sonorants **r y ʏ w 'w** (3.2.4), nasality spreads from an adjacent nasal(-ized) segment onto the onset sonorant. The attribution of underlying nasality to somewhere other than the sonorant is possible because nasalized realizations of the sonorant are only ever found in the immediate environment of another contrastively nasal consonant or nasalized vowel.

This application of nasality to the second set of sonorants generates a series of striking realizations a) in utterance-initial position and b) whenever the onset follows an oral segment over a syllable boundary. In these two contexts, all of these sonorants are articulated with oral closure:

r [r̥]	w [w̥]
y [ɲ]	'w [ʔw̥]
ʏ [ʔɲ]	

Example realizations of these sonorants in utterance-initial onsets, both oral and nasalized, are as follows:

consonant	oral environment	nasal environment
r	ráá spread out (v.)	ráá [r̥áá] blind (v.)
y	yáh take	yáh [ɲáh] stalk (n.)
y'	yáh press	yáh [ʔɲáh] call, invite
w	wáá fig, fig tree	wáá [ɲ ^w áá] nose, chief
'w	'wáá split	'wíh'wíh [ʔ ^w íhʔwíh] achy and restless (for the realization of the second instance of 'w in this word, see the next paragraphs)

In syllable onsets which are preceded by a nasal or nasalized segment, all of the Type 3 sonorants are nasalized; here, only **r** exhibits an oral closure.

r	[r̥]	w	[w̃]
y	[ỹ]	'w	[ʔw̃]
y'	[ỹ]		

Example realizations of these sonorants in onsets preceded by a nasal(-ized) segment are as follows:

consonant	example
r	mààŕ [mààŕ̥] gift
y	sáà yáh [sáà ỹáh] inside the stalk (cf. sáà 'inside,' yáh 'stalk')
y'	'mààý ['mààỹ́] fast
w	sáà wáà [sáà w̃áà] inside the nose (cf. sáà 'inside,' wáà 'nose')
'w	'wíh'wíh [ʔ ^w íhʔwíh] achy and restless (for the realization of the first instance of 'w in this word, see the previous paragraphs)

The phonetic effect of nasality on the semivowel portion of complex onsets **Cy** and **Cw** is the same as on those which are in onsets preceded by a nasal(-ized) segment (as shown in the previous paragraph).

Cy	kyáà	[kỹáà]	container
Cw	kwáà	[k̃wáà]	fly (n.)

3.3.2.2 Sonorants in syllable codas

The phonetic effect of nasality on sonorants in codas is similar to that observed in onsets (3.3.2.1), with the exception that Type 1 (inherently nasal) sonorants may follow oral vowels. This is caused by a partial independence of coda nasality from that of the nucleus (3.4.1).

After an oral vowel, there is contrast among all sonorants—both nasal (3.2.1) and oral (3.2.1). After a nasalized vowel, nasality will necessarily spread to sonorants. Because of this oral sonorants **l b d** (Type 2, which have contrastive nasal counterparts; see 3.2.1) are absent; only nasal sonorants and nasalizable oral sonorants **r y y' w 'w** (Type 3) are found (see 3.4.1).

As is the case before a nasalized vowel, Type 3 sonorants are nasalized after a nasalized vowel. Except for **r**, their realization is the same as when they are found in an onset after a nasal or nasalized segment in the preceding syllable (3.3.2.1). In a nasalized coda, **r** is realized as a nasalized trill [**ř**] (cf. [**r**], which is the oral realization of **r** in codas; see 2.1.6.4).

Example realizations of these sonorants in codas affected by a preceding nasalized vowel are as follows:

consonant	example		
r	kúrgún	[kúřgun]	oval
y	fây	[fãỹ]	twist up one's mouth
y'	kpà'y'	[kpãỹ']	swing the hips
w	kàvbâw	[kàvbãw̃]	the end (of a story)
'w	nà'w	[nã'w̃]	spank (v.)

3.3.2.3 Obstruents

Typically, obstruents are impervious to the effects of nasality (3.2.1, 3.4.2). None of the obstruents can be phonologically nasalized, and they inhibit the spread of nasality within words.

It should be noted that the labial-velar **kp**, which employs a secondary velaric airstream mechanism (Ladefoged 1968:9–13, 2.1.7.2), exhibits a phonetically nasal release before nasalized vowels (cf. Elders 2000:64):

kpáávirá [kp^{nm}áávirá] plant sp. with bulb
 cf. **kpáhlà** [kpáhlà] stool, chair

This obvious nasal release does not surface with the voiced labial-velar **gb**, however:

gb̩̀gú	[gb̩̀gú]	game bird sp.
gb̩̀gú	[gb̩̀gú]	goat milk

3.4 Distribution and spread

The feature of nasality is associated with individual vowels and consonants (3.1, 3.2); however, it is also limited to specific phonological domains within syllables (3.4.1) and morphemes (3.4.2), and it spreads across morpheme boundaries (3.4.3).

3.4.1 Distribution within syllables

Within syllables, there are clear limitations on the distribution of the feature of nasality depending on the types of consonants in the syllable.

In the distribution table on the next page, the following symbols are used (symbols refer to the types of consonants described in 3.2):

N	Type 1 sonorant (i.e., inherently nasal consonant)
L	Type 2 sonorant (i.e., oral with contrastive nasal counterpart)
R	Type 3 sonorant (i.e., alternates non-contrastively for nasality)
H	laryngeal
O	obstruent
V	oral vowel
Ṽ	nasalized vowel

Distribution of nasality within syllables

onset	rhyme											
	V	Ṽ	VV	ṼṼ	VN	ṼN	VR	ṼR	VL	ṼL	VO	ṼO
N	—	nạmạ animal	—	nự defecate	—	nạn touch	—	nạr drive	—	—	—	nụng sleep (tr.)
L	lágà mud shelter	—	làà eat	—	lòm prepare drink	—	làr rinse	—	lòl crunch	—	lèg suck	—
R	wágà skin	wạrạ mosquito	wàá hump	wạá diminish	wạᅇ gossip	yạn spread out	wàr leave	(accid. gap?)	wàl bring up	—	ràg straddle	(accid. gap?)
H	húgò bone	hụmụ kapok fruit	hàà surround	hạá squeeze	húm crush	hụm swell	hàr hurry	hạr tear	hàᅇ cough	—	hàg break (VN)	hịg give (VN)
O	dágà mouth	gựrạ crane	zàà cross	zạá pull	zám weave	—	zàr tread	zịr gnaw	zàl explain	—	góg jump	—

A number of clear patterns are visible in this table. First, there is complementarity in the first two rows, since oral vowels never follow a nasal (N = Type 1 sonorant) onset, and nasalized vowels never follow Type 2 sonorants **l b d** (i.e., L = oral sonorants with nasal counterparts). In other words, where nasality can be shared by onset and nucleus, it must.

The distribution of Type 2 sonorants **l b d** in codas mirrors distribution in onsets: these consonants are never found after a nasalized vowel in the same syllable. However, in contrast to the absence of oral vowels after nasal (N) onsets mentioned in the first paragraph above, oral vowels may be found before a nasal coda. This situation allows for contrast between nasal (Type 1) and Type 2 sonorants **l b d** in the coda following an oral vowel (2.1.2.3). The oral identity of some vowels before a nasal coda is confirmed by three factors: frequent distribution of mid vowels (which resist nasality; see 3.1.1) in this position (ex. **vbòm** ‘divide’); the presence of Type 2 sonorants in onsets preceding the vowels (ex. **lám** ‘prepare drink’), keeping in mind that Type 2 sonorants always share the nasal value of the following vowel; and, surprisingly, contrast between oral and nasalized vowels before a nasal coda consonant in word pairs like **húm** ‘crush’ vs. **húm** ‘swell.’

Obstruents (O) and Type 3 sonorants **r y y' w 'w** (i.e., R = those which alternate non-contrastively for nasality) may precede or follow oral as well as nasalized vowels within a syllable. In both positions, Type 3 sonorants alternate for nasality in keeping with the nasal value of the adjacent nucleus vowel; however, this alternation is never contrastive in itself. The same pattern of non-contrastive alternation appears to hold for laryngeals (i.e., H, cf. 3.2.5), which are only found in onsets.

Since specification for nasality is always shared between a sonorant onset (nasal or oral) and the nucleus but, as stated above, may differ between the nucleus and a sonorant coda, it seems in Mambay that—at least in terms of nasality—the nucleus is more intimately linked with the onset than it is with the coda.

An additional group of patterns involve constraints on nasality on short vowels in closed syllables, especially those that begin with an obstruent. Most importantly, as indicated by the dashed line in the table, there are no examples of oral/nasal contrast on short vowels between an obstruent and a nasal (N) coda. The example (**zám** ‘weave’) has been placed in the oral vowel column because, as noted above, the oral identity of some or all vowels in this position is confirmed by frequent occurrence of mid vowels (ex. **vbòm** ‘divide’). Contrast exists between oral and nasal vowels for closed syllables beginning with laryngeal (H) consonants, but there are very few examples (ex. **hàr** ‘hurry’ vs. **hàr** ‘tear’; **hâg** ‘break (verbal noun)’ vs. **hîg** ‘give (verbal noun)’). A parallel contrast with Type 3 sonorants, while to be expected if these sonorants function like laryngeals (cf. the paragraph on Type 3 sonorants above and 3.2.5), is absent from the data; all examples of this structure are found with oral vowels (ex. **wàr** ‘leave,’ **râg** ‘straddle’). Finally, short nasalized vowels are conspicuously absent from syllables with both obstruent onset and obstruent coda. Taken together, these facts show that, whether historically or synchronically, contrast in nasality for short nasalized vowels is disfavoured in closed syllables.

In the five instances of morpheme-internal superheavy syllables within a morpheme (2.4.3), two patterns should be noted. First, as is the case for short oral vowels, long oral vowels are allowed before a nasal coda (**tí-tòòntî** ‘lark (bird sp.)’). Second, in contradiction to restrictions on nasality for short vowels in a syllable with obstruents in both onset and coda, nasality is allowed for long vowels in this context (**fíít** ‘(sound of fingers wiping a plate clean)’).

3.4.2 Distribution within morphemes

In morphemes, as in syllables (3.4.1), there are coherent patterns in the distribution of nasality; these are consistent across all word classes. The following patterns hold for the vast majority of data:

If nasality is found in a morpheme with no obstruents (cf. 3.2.1) and no mid vowels (cf. 3.1.1), it is found throughout the morpheme.

'màýá	fast
níínà	lower millstone, mill
rámà	blindness, blind person
wárá	mosquito

If there is nasality in a morpheme with an obstruent, it does not associate with or through the obstruent.

kpáávirá	plant sp. with bulb
páàgá	dirtiness, black filth
súúbà	urine
vbààzá	fish sp.

Similarly, if there is nasality in a morpheme with a mid vowel, it does not associate with or through the mid vowel.

dǒǒnì	wealth
kpòǒrǎ	tibia (of animal)
lómǒnà	sourness, acidity
pémǒnǎ	ant sp.

In six Mambay items in the data, the distribution of nasality is irregular: it is incomplete within the morpheme even where it is not blocked by an obstruent or a mid vowel.

dàrmí	clay
hùùnǔ	thigh (cf. historical body part suffix -nǔ ; see 5.1.3.2)
límà	lameness, lame person
lwàhnǎ	edible plant sp.
màlà	art, craft
sùùnǎ	in-law

Minimal domain of association

Nasality requires a specific minimal domain in order to associate. Minimal domains are as follows (the first four of these five domains have already been delineated in 3.4.1):

- a nasal coda (ex. **vbòm** ‘divide’);
- a long vowel (ex. **zǎǎ** ‘pull’);
- a nasal(-ized) onset plus a nasal(-ized) nucleus (ex. **núg** ‘sleep (tr.)’);
- a nasal(-ized) nucleus plus a nasal(-ized) coda (ex. **zìr** ‘gnaw’); or
- two short vowels separated by a nasal(-ized) sonorant (ex. **gùrá** ‘crane’).

Thus, within a morpheme, nasality may be limited to a single nasal consonant if that consonant is in syllable-final position (3.4.1; see also 3.4.2 immediately above).

dǎngà	ground squirrel
fáyǎŋ	light (weight), agile
lám	prepare hot peanut drink
vbóm	divide, spread, ruin

Otherwise, there must at least two adjacent nasalizable vowel or consonant units in the morpheme (a long vowel being two units), as is the case for the following examples, some of which are repeated from above:

gùrá	crane
hàr	tear
kúmù	herder
má	with, and
núg	sleep (tr.)
pǎǎgá	dirtiness, black filth
zǎǎ	pull
zìr	gnaw

The first and third items given in the list above express an additional constraint on the minimal domain of nasality in morphemes with more than one syllable: a nasalized short vowel in an open syllable is only found when there is another nasalized vowel in the morpheme, and the two vowels are separated by a nasal(-ized) sonorant. A single divergence from this pattern is the allowing of short nasalized vowels in the first syllable after a nasal consonant if an obstruent begins the second syllable. Thus, plausible morphemes of the following types are absent (C here refers to any type of consonant):

1. *CVCṼ;
2. *C̃VCV (except for ÑVOV, which is permitted).

The only items in the data which do not conform to this pattern are the following two words (both of which also exhibit non-canonical obstruent voicing suggestive of morphological complexity; cf. 2.1.3.2):

ràfá'	brownness
wátùtáà	salt, sugar

3.4.3 Spread across morpheme boundaries

There are six cases in which nasality spreads across morpheme boundaries:

1. between inalienable pronominal suffixes and nouns (3.4.3.1);
2. between reflexive verb suffixes and verb stems (3.4.3.2);
3. between nouns and plural affixes (3.4.3.3);
4. between verb stems and a perfect affix (3.4.3.4);
5. between Optative verb stems and an appended vowel (3.4.3.5); and
6. between a phrase-final constituent and a negation clitic (3.4.3.6).

The first case of spread involves the leftward incorporation of a suffix's nasality into a stem vowel. In the second case, the leftward direction of spread is even clearer. The other four cases of spread are rightward. Of these, two are from stem to affix, and the last one is from any preceding verb phrase constituent onto a clitic.

The extent and limitations of the spread of nasality are considered in 3.4.3.7. Contexts in which the nasal feature is lost are discussed in 3.4.3.8.

3.4.3.1 Inalienable pronominal suffix to noun

In all six cases where a noun ending in a long oral vowel takes the 1SG inalienable possessive pronominal suffix **-í** (cf. 6.1.4.2 and Appendix 1), the nasality of the suffix appears in the syllable into which the suffix is incorporated.

páà man	-í 1SG.POSS.INAL	→	páy my father (inal.)
páà-vàà husband	-í 1SG.POSS.INAL	→	páà-váy my husband (inal.)
túù mother	-í 1SG.POSS.INAL	→	túí my mother (inal.)
kwàá neck	-í 1SG.POSS.INAL	→	kwùí my neck (inal.)
syâh hand	-í 1SG.POSS.INAL	→	síh my hand (inal.)

dwǎ'	-í	→	dwǐ'
belly	1SG.POSS.INAL		my belly (inal.)

None of the stems with which the 1SG inalienable possessive pronominal suffix is found end with a nasalizable oral consonant, so the possible effect of nasality in this exact context cannot be determined; however, the behaviour of nasal-initial reflexive suffixes (3.4.3.2) suggests that leftward spread could occur.

3.4.3.2 Nasal-initial reflexive suffix to verb stem

When nasal-initial reflexive suffixes follow a stem-final Type 2 sonorant **l b** or **ɗ**, the nasality of the pronoun assimilates to the left and the stem-final oral sonorant is realized as the respective nasal counterpart **n 'm** or **'n** (cf. 3.2.3, 7.3.1.2.3).

nà	zòl	+	-nǎ	→	nà zònnǎ	we (you (sg.) and I) left
1&2	leave:PFV		-1&2SG.REFL			
mì	sàb	+	-nǐ	→	mì sà'mnǐ	I vomited
1SG	vomit:PFV		-1SG.REFL			
mù	zàɗ	+	-nǎm	→	mù zà'nnám	you trembled
2SG	tremble:PFV		-2SG.REFL			

3.4.3.3 Noun to plural affix

Various strategies are used to pluralize nouns (5.5.2). In one type of construction, when the plural template **-lzV** is applied to a noun in which the last syllable contains a nasalized vowel, the nasality of the noun spreads rightward onto it.

kwǎà	-lzV	→	kwánzà
fly	PL		flies
cf. kwáà	-lzV	→	kwálzà
grass	PL		grasses
gǎh	-lzV	→	gàhnzá
beard	PL		beards
cf. nà-kpyǎh	-lzV	→	nà-kpyàhlzá
francolin (bird sp.)	PL		francolins

In the above examples, the transcription appears to suggest that the nasalized vowel is actually denasalized when its nasality spreads onto the adjacent **l**. However, this is simply a consequence of the non-marking of nasality in syllables with an obstruent onset and a nasal coda, since nasality is never contrastive in this position (3.4.1).

3.4.3.4 Verb stem to Perfect affix -rì

When the Perfect affix **-rì** is attached to a verb stem ending in a nasalized vowel or a nasal consonant, the nasality of the verb stem spreads rightward onto it (7.3.1.3). In the pairs of examples below, the first example shows the spread of nasality onto **-rì**, and the second example shows a similar context in which there is no spread of nasality.

	m̀	kùú		-rì	→	m̀ kùúrì
	1SG	grab:PERF		PERF		I have grabbed
cf.	m̀	kùù		-rì	→	m̀ kùùrì
	1SG	gather.firewood:PERF		PERF		I have gathered firewood
	m̀	yáh		-rì	→	m̀ yáhrì
	1SG	call:PERF		PERF		I have called
cf.	m̀	yáh		-rì	→	m̀ yáhrì
	1SG	press:PERF		PERF		I have pressed
	m̀	dúŋ		-rì	→	m̀ dúŋrì
	1SG	bend.down: PERF		PERF		I have bent down
cf.	nà	dúŋ	-zí	-rì	→	nà dúŋzìrì
	1&2	bend.down:PERF	PL	PERF		we (incl.) have bent down

3.4.3.5 Optative verb stem to appended vowel -í

When there is no explicit object with an Optative and the verb is phrase-final, an additional vowel **-í** is appended after some consonants (7.4.2.1). If **-í** follows a stem-final nasal consonant, nasality spreads from the consonant onto it.

m̀ **kàn-í** [you (sg.)] pass (something)!

2SG:OPT pass:OPT-V

m̀ **zò'm-í** [you (sg.)] fix (something)!

2SG:OPT fix:OPT-V

cf. the oral vowel **-í** after stems ending in an oral consonant:

m̀ **lòl-í** [you (sg.)] crunch (something)!

2SG:OPT crunch:OPT-V

m̀ **sàb-í** [you (sg.)] vomit (something)!

2SG:OPT vomit:OPT-V

3.4.3.6 Negation particle yá

The particle **yá** is used in negation (10.1.2.3). In terms of nasality, it functions as a clitic: whenever it follows any morpheme ending in a nasalized vowel or nasal consonant, nasality spreads from that morpheme onto the clitic.

mǐ	kúú	= yá	→	mǐ kúú = yá	
1SG:PFV.NEG	grab:PFV	NEG		I did not grab	
cf. mǐ	kùù	= yá	→	mǐ kùù = yá	
1SG:PFV.NEG	gather.firewood:PFV	NEG		I did not gather firewood	
mǐ	làà	nəmá	= yá	→	mǐ làà nəmá = yá
1SG:PFV.NEG	eat:PFV	meat	NEG		I did not eat meat
cf. mǐ	làà	vúù	= yá	→	mǐ làà vúù = yá
1SG:PFV.NEG	eat:PFV	goat	NEG		I did not eat the goat

3.4.3.7 Extent and limitations of spread

Nasality spreads across morpheme boundaries only in the six contexts described above (3.4.3.1–3.4.3.6). Even within phonological words, the spread of nasality is sensitive to morphological boundaries (cf. 2.5.1, 4.1.2.2). For example, nasality does not spread across prefix-noun or other noun-internal boundaries:

prefix-noun boundary (5.1.2.2):

ná-ʔáà	bean leaves
nà-rúvò	phlegm, moist object
tí-náúnì	dragonfly
tí-kà-rəhgú	large heron sp.

boundary between a regular verbal noun and a dummy object (5.9.1.1):

làà	-nə	→	làánə
eat:VN	-OBJ		eating (something)
gîr	-nə	→	gîrnə
insult:VN	-OBJ		insulting (something)

other noun-internal boundaries (5.4.2):

lèŋ-lèŋ-gérmù	kingfisher sp. (cf. gérmù ‘women’)
tâw-nîŋ-gáhlàŋ	fish sp. (cf. tâw ‘(male proper name),’ nîŋù ‘eye,’ gáhlàŋ ‘faceted’)
tôr-nə-múùrú	maize (cf. tóra ‘seed,’ nə-múùrú ‘jinn’)

Conversely, while nasality spreads across the boundary to the negation clitic **yá** from the word that precedes it (3.4.3.6), tonal boundaries remain intact in this context. This is evident in the following example:

mùùrǎ = yá
silt = NEG

(in: **mùù kó mùùrǎ = yá** you did not see the silt)

If there were no tonal boundary between the two morphemes, the sequence would constitute a single tonal word **mùùrǎyá** with a HLH melody, like other HLH words of the same shape (4.1.2.2). However, this is not the case.

3.4.3.8 Loss of the nasal feature

There are four contexts in which a nasal feature is lost. In the first case, it is lost from a consonant (3.4.3.8.1), and in the other cases it is lost from a vowel (3.4.3.8.2–3.4.3.8.4).

3.4.3.8.1 The ideophone plural template

In the plural template used with ideophones (8.5.1), the nasal feature is lost from a consonant. In this context, the consonant **'m** is copied to a position immediately before an oral vowel **û**; as a result, its nasality evaporates and it is realized as **ɓ**.

source ideophone	derived ideophone
'mǐ'n-'mǐ'n very thin	ɓû-'mǐ'n very thin (pl.)

The data contain no examples of the derivation of ideophones beginning with other nasal consonants.

3.4.3.8.2 Plural marking on nouns

When a plural template containing **z** (5.5.2) applies to a noun ending in a light syllable with a nasalized vowel, the nasal feature is lost from that syllable. This happens because when it is preceded by the obstruent **z**, the short nasalized vowel is deprived of the minimal domain required for the hosting of nasality (3.4.2).

singular		plural
bùrǐ wild manioc sp.	→	bùrzí wild maniocs (sp.)
rámà blind person	→	rámzà blind people

ná'rà → **ná'nzà**
sauce sauces

núúrú → **núrzó**
breast breasts

3.4.3.8.3 The 1SG inalienable possessive suffix -í

It appears that when the 1SG inalienable possessive suffix -í (6.1.4.2) attaches to one of three obligatorily possessed nouns (5.3.3.2), its nasal feature is lost. As is the case with plural marking on nouns (3.4.3.8.2), a constraint against a short nasalized vowel after an obstruent (cf. 3.4.2) is active here.

ʔázi´ + **-í** → **ʔázi** my member of
member.of. 1SG.POSS.INAL member.of.**ʔàzgàrà**: **ʔàzgàrà** (inal.)
ʔàzgàrà:LF 1SG.POSS.INAL (see Glossary)

fàḷzi + **-í** → **fàḷzi** my member of
member.of. 1SG.POSS.INAL member.of.**fàḷzàrà**: **fàḷzàrà** (inal.)
fàḷzàrà:LF 1SG.POSS.INAL (see Glossary)

fàhzi + **-í** → **fàhzi** my member of
member.of. 1SG.POSS.INAL member.of.**fàhzàrà**: **fàhzàrà** (inal.)
fàhzàrà:LF 1SG.POSS.INAL (see Glossary)

The underlying forms of these three nouns have been established with reference to their shapes throughout the inalienable possession paradigms (see Appendix 1). They may be historically composed (note the consistent **-zi** ending). Still, whatever morphological complexities may be present, the loss of the suffix's nasal feature is clear.

An alternative explanation, and one which is *ad hoc* but admissible, is that the 1SG inalienable possessive suffix is a floating H tone without segmental support (the deletion of the excess H tone in **ʔázi´** is discussed in 4.3.1.4).

In the two other examples of nouns ending in an obstruent-V syllable which are found with inalienable pronominal possession, the suffix -í retains its nasality.

súgò + **-í** → **súgí**
ear 1SG.POSS.INAL my ear (inal.)

sábà + **-í** → **sabí**
tail 1SG.POSS.INAL my tail (inal.)

The reasons for this difference in nasal value of -í in comparable environments (**z** vs. **g** and **b**) are unclear, but it is worth noting that neither of the final examples is obligatorily possessed, and that both refer to body parts rather than social relations.

3.4.3.8.4 Irregular verbal nouns

Long nasalized vowels found before an obstruent in the context of irregular verbal nouns (5.9.1.2) alternate with **Vŋ**. In these cases, the nasal value of the vowel evaporates.

súŋgà	lie down (VN)
súŋzírà	lie down (VN:PL)
cf. sùù	lie down
yáŋgà	sit, be, stay (VN)
yáŋzírà	sit, be, stay (VN:PL)
cf. yàà	sit, be, stay

The difference in vocalic nasality is confirmed by the realization of the **y**, which is strongly nasalized (as described in 3.3.2.1) in **yàà**.

TONE AND INTONATION

Like the vast majority of Niger-Congo languages, Mambay is tonal. All syllables in all utterances are affected by tone, and its behaviour in the language is systematic.

In the context of a rich inventory of consonants, vowels, syllable and word shapes, and contrastive nasality (Chapters 2 and 3), the functional load of tone in distinguishing lexical items within word classes is moderate, and minimal tone pairs within classes are surprisingly uncommon. However, its role in the language is much broader than this. Among other things, tone is an important means of distinguishing among word classes (4.1.2.4). In addition, tone plays a central role in the verbal system, where it is used as a basic means of TAM (tense/aspect/mode) marking (7.3.2.2). Further, tone is sensitive to boundaries of phonological phrases (4.3); the resulting limitation of tonal processes in phrase-final position helps provide pragmatic coherence and contrast in discourse.

Two contrastive tone levels are found in Mambay: H (high) and L (low). Tones from these two levels are organized into contrastive tone melodies and associated with morphemes or, in some cases, phonological words (4.1).

Additional structural aspects of the tone system include floating tones, replacive tone melodies, and interaction between tone and other phonological structures (4.2).

Four major processes affect the tone system. While tone deletion is a lexical process, postlexical processes consist of downstep, H tone spread and L tone spread (4.3).

In addition to a complete tonal system, two important intonational phenomena are attested in Mambay: tone register shift (which is different than downstep) and an expectation marker. Both interact closely with the tone system (4.4).

Terminology and transcription

Whenever phonologically contrastive tonal elements are under discussion, the terms “tone” and “tone melody” are used. In contrast, the term “pitch” is limited to phonetic descriptions of tonal realizations.

Regarding the transcription of tone, several comments are in order. For typographical reasons, the phonological orthography used in this study consistently limits tone marking to orthographic vowels; the tone marked on vowels is thus applicable to the whole

syllable. This convention is pertinent for syllables with a VC coda, which have two tone-bearing units (2.4.3). In cases where the tonal value of the coda C is different than that of the preceding V, it is transcribed on the V as follows:

underlying phonological form	simplified phonological orthography	example
/káŋ/	kâŋ	bowstring, drum snare
/kùm/	kũm	baobab

This convention also applies to pharyngealized and glottalized vowels (whether phonologically long or short; see 2.2.1, 2.3.3.2–3), which are represented with **Vh** and **V'** in the phonological orthography.

/fáh/	fâh	path
/fá'/	fă'	mouse sp.

Exceptionally, in superheavy syllables (2.4.3), tone is marked on all the tone-bearing units.

fááw	light (weight)
nà-táállá	ant sp.
yáà-m	(in: mù yáàm 'you have moved away')
	move.away:PERF-2SG.REFL

In the present chapter, the phonetic detail provided in the transcriptions between square brackets is limited to pitch. Otherwise, the transcription is phonological. Phonetic phenomena relating to structures other than tone are addressed in the sections on consonants (2.1), vowels (2.2), and nasality (Chapter 3).

4.1 Tone inventory

The following sections provide an inventory of the tone levels in Mambay (4.1.1), and the melodies which are produced by combining these two levels (4.1.2).

4.1.1 Tone levels

Two underlying tone levels are found in Mambay: H (high) and L (low).

ká	(attributive copula)
kà	when, and then
hâh	gather
hâh	prevent

yáá move away
yâà finish

The phonetic interval between H and a following L is twice as great as the interval between L and a following H; this difference is attributable to the effect of downstep (see pitch traces in 4.3.2).

In addition to the level pitches at which H and L are often realized, contour pitches are also found. A phrase-final light syllable may host a falling pitch, and heavy syllables (cf. 2.4.3) may be realized with falling or rising pitch. However, according to the present analysis, contour pitches are not in and of themselves contrastive. Rather, they may be attributed to contrastive tone melodies (4.1.2) associated with words as well as postlexical processes which affect the realization of these melodies (4.3).

A mid pitch, halfway between H and L, is also attested in restricted contexts (4.3.3.1.2). However, as is the case for contour pitches, it can be explained with reference to postlexical processes.

4.1.2 Tone melodies

H and L tones combine to produce various underlying tone melodies. Seven melodies have been observed in morphologically simple words in Mambay:

H	L
HL	LH
HLH	LHL
HLHL	

The following discussion describes the association of these tone melodies with tone-bearing units (TBUs) (4.1.2.1), and shows that the melodies which may be associated with a word are limited by the number of TBUs in that word (4.1.2.2). The formation of tone melodies in composite phonological words is then examined (4.1.2.3). In addition, it is pointed out that each word class exhibits its own inventory of tone melodies, and that frequencies of attested melodies vary greatly from one class to another (4.1.2.4). Contrasts between melodies are demonstrated (4.1.2.5) and examples, including phonetic realizations, are given for each of the attested combinations of CV shape and tone melody in the data (4.1.2.6).

4.1.2.1 Tone-bearing units (TBUs)

The most important limitation on the melodies which can be found with a word is the word's quantity of tone-bearing units (TBUs). In Mambay, the pertinent TBU is the mora (μ). A mora is acknowledged for each V or C found in a syllable's nucleus or coda (see 2.4 for discussion of the mora). Each mora is associated with a single underlying H or L tonal value. Thus, words comprised of a single light (one- μ) syllable may only host the melodies H or L.

H
 |
 μ
ká (attributive copula)

L
 |
 μ
kà when, and then

In contrast, words with two morae—and this may be represented by either a single heavy (two-μ) syllable or two light syllables—may host melodies with up to two tonal values, namely: H, L, HL and LH.

H
 ^
 μμ
yáá move away

L
 ^
 μμ
yàà finish

HL
 ||
 μμ
láà gourd

LH
 ||
 μμ
làá haunch

H L
 | |
 μ μ
lágà mud shelter, scaffolding

H L
 | |
 μ μ
làgá lie, Mundang

Likewise, three- and four-mora words may be found with up to three and four alternating (between H and L) tonal values respectively. This pattern of tone-melody distribution, which is almost completely consistent throughout the data, may be summarized as follows:

tone melody	1-μ word	2-μ word	3-μ word	4+-μ word
H	x	x	x	x
L	x	x	x	x
HL	—	x	x	x
LH	—	x	x	x
HLH	—	—	x	x
LHL	—	—	x	x
HLHL	—	—	—	x

Two morphologically simple exceptions to this pattern have been observed in the data; both of these are two-mora kinship terms with a three-unit (HLH) melody of which the third unit floats on the right edge of the morpheme:

H L H μ μ nánà ' maternal uncle	H L H μ μ ʔázi ' member of ʔàzgàrà (see Glossary)
---	---

At the end of a phrase, the final H tone is not realized on such words (4.3.1.4); however, in the context of possessive constructions (5.3), its effects are evident (4.3.3.3).

In addition, the verbal noun dummy object suffix **-nà** exhibits polar behaviour which may be related to the presence of more tones than tone-bearing units in verbal nouns; see the extended discussion in 5.9.1.1.1.

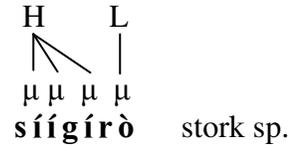
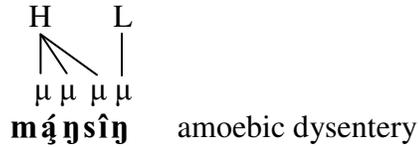
gír insult:VN	-nà -OBJ	→	gírná insulting (something)
kòg see:VN	-nà -OBJ	→	kǒgnà seeing (something)

4.1.2.2 Association of tones with TBUs

It is generally acknowledged that initial association of tones with TBUs proceeds on a one-to-one basis from the left edge of the word to the right (Yip 2002:93). Still, at the point when postlexical processes apply in Mambay (cf. 4.3), tones appear to be associated in reference to the right edge of the word. This configuration shows up when the number of available TBUs is greater than the number of tones, since the associated tone furthest to the left is associated with the remaining TBUs all the way to the left edge of the word.

This situation suggests that, after initial left-to-right association, there is a subsequent lexical shift of all tonal units as far to the right as possible, with a one-to-one tone-to-TBU re-association taking place. Thus, for example, a HL melody will associate at the lexical level with various CV shapes as follows (an exhaustive table of association with attested CV shapes is found in 4.1.2.6):

H L μ μ láà	gourd	H L μ μ kâŋ	bowstring, drum snare
H L μ μ lágà	mud shelter, scaffolding	H L \ μ μ μ léérà	poultry flea, louse

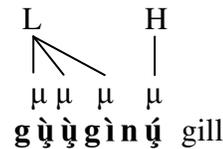
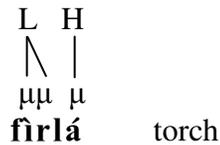
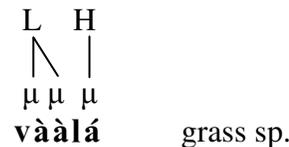
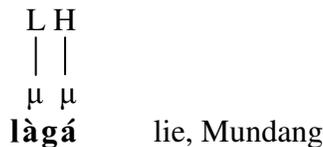
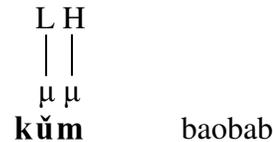
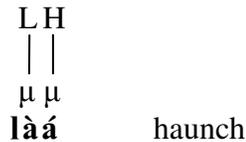


For words which (like the three examples in the right column) contain more TBUs than tonal units, a hypothetical lexical association pattern other than that which is given here is not possible.

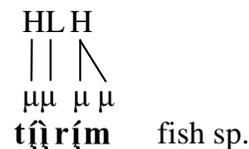
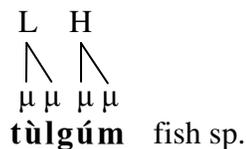


Thus, tone melodies associate according to a subset of possible tone sequence possibilities.

In the same way, a LH melody will associate at the lexical level with various CV shapes as shown in the following examples (an exhaustive table of association configurations is found in 4.1.2.6):



There are two restricted exceptions to this language-wide pattern of lexical association. First, there is an intolerance for the association of LH (i.e., a rising contour) on a heavy syllable if a mora to the left is available to host the L tone (cf. the monosyllabic LH examples immediately above, where there is no available mora to the left).



Second, in the two nouns in the data with more tones than tone-bearing units, the rightmost tone is underlyingly floating on the right edge of the morpheme (cf. 4.1.2.1); it only makes itself known non phrase-finally, in the context of possessive constructions (4.3.3.3):

H L H μ μ nánà'	maternal uncle	H L H μ μ ?ázi'	member of ?àzgàrà (see Glossary)
-------------------------------------	----------------	-------------------------------------	---

The fact that the floating tone is on the right rather than the left edge of these words supports the idea of an initial left-to-right association, whereby the excess tone is left floating on the right. However, since there are only two such examples in the data, conclusions about their implications for the tone system as a whole should be held lightly.

4.1.2.3 Phonological word melodies

The melody of a phonological word (2.5.1) is usually the sum of the melodies of its constituent morphemes.

fàà back:LF	+	-ró 2PL.POSS.INAL	→	fààró your (pl.) back, skin (inal.) (cf. 5.3.4.2.4)		
hèè climb:PFV	+	-zí PL	+	-n̄ to.here	→	hèèzín they climbed to here (cf. 7.3.2.2.3)

When adjacent morphemes in a phonological word exhibit identical tones, these tones are usually merged in accordance with the Obligatory Contour Principle (OCP; cf. Leben 1973, Snider 1999:32, Yip 2002:84).

káà head:LF	+	-rú 3SG.POSS.INAL	→	káàrú his/her/its head (inal.) (cf. 5.3.4.2.4)		
hèè climb:PERF	+	-zí PL	+	-ré 3PL.REFL	→	hèèzìré they climbed to here (cf. 7.3.2.2.3)

However, simple addition and merging of the tone melodies does not always take place within a phonological word. In some cases, the melody of a phonological word is simpler than that of the melodies of its constituents.

káà head:LF	+	-í 1SG.POSS.INAL	→	káání my head (inal.) (cf. 5.3.4.2.4)
-----------------------	---	----------------------------	---	--

Additional instances of simplification are examined in the section on lexical tone deletion below (4.3.1).

In other cases, the mismatch between the melody of the phonological word and those of its constituents cannot be explained as simplification. This is the case for replacive tone melodies (see 4.2.2).

yaa + **-zí** + **-ré** → **yààzìrè** they have finished (intr.)
 finish:PERF PL 3PL.REFL

Finally, there are two cases where merging of tones within a phonological word does not take place. First, the tone melody of noun prefixes is tonally separate from that of the nouns to which they are attached (5.1.2.2).

tì-kúrgú dwelling, main room (cf. hypothetical single tonal word ***tìkùrgú**)
nà-dígzìlè algae (cf. hypothetical single tonal word ***nàdìgzìlè**)

Second, each of the nouns that makes up a compound usually retains its distinctive tone melody (5.4).

ná-rím-byàá cormorant, darter (bird sp.)
 1&2:OPT-dip:OPT-water

tòò-n̄n-gáhlàṅ fish sp.
 Taw:LF-eye:LF-faceted

4.1.2.4 Tone melodies and word classes

Possibilities for tone melodies associated with words are limited not only by the quantity of available TBUs (4.1.2.1), but are also restricted by the word class to which a word belongs. For example, although most verb roots are comprised of a single heavy syllable (2.4.3), in their basic (Perfective) form they make use of only two of four possible melodies (H and L but not HL and LH) (7.3.2.2.1). The vast majority of nouns, in contrast, are associated with complex tone melodies (especially HL, LH and HLH), and the simple melodies H and L are associated with non-canonical nouns (5.1.1.2).

An inventory of tone melodies associated with attested CV shapes of members of each word class is found at the beginning of the relevant sections in the following chapters.

4.1.2.5 Contrasts between tone melodies

Each of the seven underlying tone melodies is contrastive. Word pairs are given in a table on the following page to demonstrate these contrasts, and a minimal distinction between the words in the same word class (here: nouns or verbs) is provided whenever possible (an exhaustive list of each of the melodies associated with all attested shapes is given in 4.1.2.6).

Contrast between tone melodies

H	L	HL	LH	HLH	
yáá ‘move away’ yàà ‘finish’					L
kpúŋ ‘hill’ kāŋ ‘bowstring’	màrvà ‘regret’ màrnà ‘older sibling’				HL
fém ‘stupidity’ kǔm ‘baobab’	kpàŋ ‘different’ kpǎŋ ‘salty’	sùmù ‘night’ sùmú ‘potter’s kiln’			LH
nùúrú ‘breast’ mùúrú ‘silt’	wàrbà ‘strength’ bêgá ‘sweetness’	gyáálà ‘medicine’ gyáàlá ‘nanny’	ḃòòzá ‘seam’ ḃóòzá ‘clod’		HLH
nùúrú ‘breast’ màájù ‘mother (al.)’	wàŋgà ‘hardness’ dǒŋŋ ‘wealth’	gbúŋŋ ‘shack’ dǒŋŋ ‘wealth’	dàmná ‘thatch’ dǒŋŋ ‘wealth’	séègá ‘red-brownness’ lèégè ‘nightjar’	LHL

Because its CV shape lacks a close equivalent with other morphemes, there are no solid illustrative pairs for tonal contrasts with the single HLHL morpheme in the data; the existence of HLHL as a distinct tone melody has instead been established with reference to principles of tone association (4.1.2.1) in order to account for the idiosyncratic phonetic form of the HLHL example in the data (4.1.2.6).

4.1.2.6 Examples of tone melodies associated with attested CV shapes

Each of the seven attested tone melodies is shown here with all of the CV shapes with which it is found in the morphologically simple data.

Where postlexical processes (4.3) cause the tone melody of a morpheme to be realized differently than might be inferred from the orthographic representation of its underlying form (see the introduction to this chapter), underlying forms as well as surface realizations are provided.

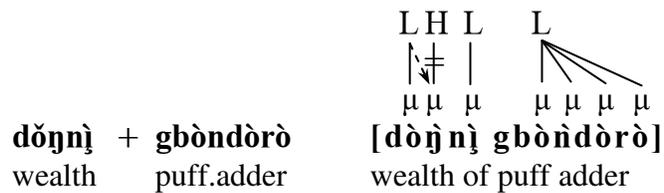
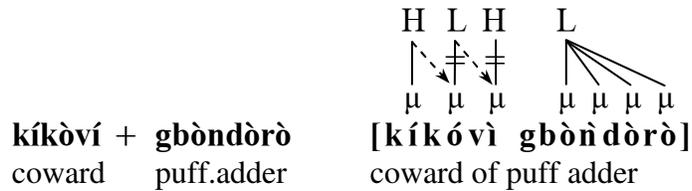
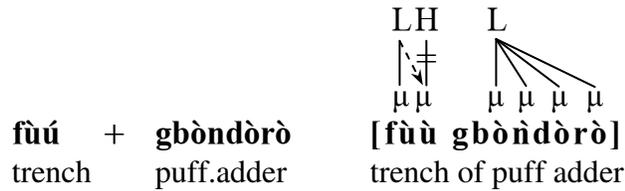
The exclusion of lexical prefixes from the CV shape and from the tone melody of nouns is discussed in 4.1.2.3 and 5.1.2.2.

tone melody	CV shape	example	surface realization	gloss
H	CV	ká		(attributive copula)
	CVV	nájá		this, these
	CVC	kpún		hill
	CVVC	fíít		(sound of fingers wiping a plate clean)
	CV.CV	ḃóró		deep, far away
	CV.CVV	(náj-)dídá'		summit
	CV.CVC	kókól		small drum
	CVV.CV	núúrú		breast
	CVC.CV	kpángú		early
	CVC.CVC	ḃúndún		dwarf, withered
	CV.CV.CV	ḃúnúnú		pursed (lips)
	CVV.CV.CV	béhlégí		few
	CVC.CV.CV	májdírí		tree sp.
	CVC.CV.CVC	káḃkárán		dried out and hard
L ⁴	CV	kà		when, and then
	CVV	bèè		without
	CVC	gàl		baldness, receding hairline
	CVVC	rùùgè		cylindrical shape
	CV.CV	màlà		art, craft

⁴ Note that in contrast to most other Niger-Congo languages (Snider 1999:46), the pitch of L does not fall in phrase-final position in Mambay.

	CV.CVC	gàrà̀m		hippo-hide whip
	CVV.CV	gbò̀dò̀rò̀		bald, bare
	CVV.CVC	zù̀rù̀m		fish sp.
	CVC.CV	mà̀rvà̀		regret
	CVC.CVC	dè̀glè̀m		insect sp.
	CV.CV.CV	gà̀zè̀rè̀		short
	CV.CVC.CV	(nà̀-) gbò̀gò̀ngà̀		waterlily bulb
	CVV.CV.CV	wà̀agù̀nà̀		large basket
	CVV.CV.CVC	bà̀à̀bù̀rù̀m		main room
	CVC.CV.CV	gbò̀ndò̀rò̀		puff adder
	CVC.CV.CVC	kù̀ṅkù̀rù̀ṅ		hunched
	CVC.CVC.CV	sì̀nzà̀hwlà̀		porcupine
HL	CVV	sî̀	[sî̀]	valley, river
	CVC	kầṅ	[ká̀ṅ]	bowstring, drum snare
	CVVC	fá̀á̀w	[fá̀á̀w]	light (weight)
	CV.CV	bá̀dầ	[bá̀dầ]	tamarind
	CV.CVV	(nà̀-) wí̀wầh	[nà̀wí̀wầh]	belt made of bells
	CV.CVC	zò̀dò̀m	[zò̀dò̀m]	ten
	CVV.CV	tí̀lò̀	[tí̀lò̀]	eagle sp.
	CVV.CVC	(tí̀-) fú̀yú̀gù̀m	[tí̀fú̀yú̀gù̀m]	edible wild plant sp.
	CVC.CV	bú̀glì̀	[bú̀glì̀]	hat
	CVC.CVC	má̀ṅsî̀ṅ	[má̀ṅsî̀ṅ]	amoebic dysentery
	CV.CVV.CVC	(nà̀-) bí̀bá̀hrầm	[nà̀bí̀bá̀hrầm]	bedbug
	CV.CVC.CV	dí̀dò̀hṅgì̀	[dí̀dò̀hṅgì̀]	bent
	CV.CVC.CVV	(nà̀-) kú̀rú̀mbá̀à̀	[nà̀kú̀rú̀mbá̀à̀]	fish sp.
	CVV.CV.CV	sí̀gí̀rò̀	[sí̀gí̀rò̀]	stork sp.
	CVC.CV.CV	(nà̀-) dí̀gzí̀lè̀	[nà̀dí̀gzí̀lè̀]	algae
	CVC.CV.CVC	(tì̀-) kò̀ṅkò̀ró̀ṅ	[tì̀kò̀ṅkò̀ró̀ṅ]	red ant sp.
	CVC.CVV.CV	tá̀mbú̀úrà	[tá̀mbú̀úrà]	pigeon, dove
LH	CVV	fù̀		trench
	CVC	kù̀m	[kù̀m]	baobab
	CV.CV	gù̀rá̀		fish trap
	CV.CVV	rà̀fá̀'		brownness
	CV.CVC	bù̀vbú̀ṅ		net sp.
	CC.CC	nè̀mhm		yes
	CVV.CV	vbà̀à̀lá̀		testicle
	CVC.CV	fí̀rlá̀		torch
	CVC.CVC	tù̀lgù̀m		fish sp.
	CV.CVV.CV	pì̀pù̀yè̀rì̀		horn (instrument)
	CVV.CV.CV	gù̀yè̀gì̀nù̀		gill
	CVC.CV.CV	(nà̀-) gì̀zgì̀ró̀		antelope sp.

nouns with LH and LHL melodies pattern as L; and the final H on linked forms of nouns with an HLH melody is not realized (5.2.2.1).



Idiosyncratically, the linked form of the single HLHL noun in the data (**wátùtáà** ‘salt, sugar’) retains the full tone melody of its free form (5.2.2.1).

4.3.1.2 HL nouns in inalienable possessive constructions

When they are found with inalienable possessive pronouns (6.1.4.2), HL nouns undergo, in addition to segmental reduction (5.3.4.2.1), the deletion of their L tone (5.3.4.2.4).



This tone deletion does not take place in alienable possessive constructions.



4.3.1.3 Idiosyncratic linked forms of HL nouns

There are a handful of idiosyncratic HL nouns which, in addition to segmental reduction (5.3.4.2.1), lose their L tone when they are found as linked nouns in a possessive construction (5.2.2.1).



This contrasts with the normal realization of HL nouns in the same context, where the retention of the L tone is signalled by downstep (4.3.2) on subsequent H tones.

bígà + **'màrà** → **bíg 'màrà** [**bíg 'màrà**]
 child friend child of friend

4.3.1.4 Floating H tones in phrase-final position

There are two nouns in the data with floating H tones on their right edge (4.1.2.2).

H L H μ μ nánà' maternal uncle	H L H μ μ ʔázi' member of ʔàzgàrà (see Glossary)
--	--

Only **nánà'** may occur phrase-finally, because **ʔázi'** is obligatorily possessed (5.3.3.2) and therefore only found in the initial position of possessive constructions. At the end of a phrase, the final H tone does not surface on **nánà'**, which is realized tonally like other two-mora CVCV nouns: [**nánà**]. For evidence of the floating tone on underlying form of this word, see 4.3.3.3.

4.3.2 Downstep

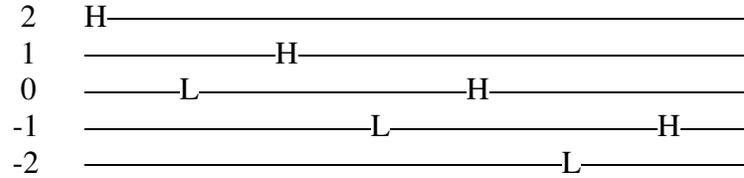
Downstep is a central feature of the Mambay tone system, and with few exceptions, applies throughout the language. Downstep in Mambay refers to the phonetic lowering of the tone register (4.3.2.1).

In Mambay, both automatic downstep (also called downdrift) (4.3.2.2) and non-automatic downstep (also simply called downstep) (4.3.2.3) are found, and are treated as two aspects of the same phenomenon: automatic downstep takes place when a L tone is non-floating, and non-automatic downstep takes place when a L tone is floating. The terminology used here follows that of Stewart (1983) and Snider (1999). Environments in which downstep appears not to apply are treated in 4.3.2.4.

In the phonetic transcriptions, the symbol [⁺] is used to mark non-automatic downstep; in contrast, automatic downstep is assumed whenever the necessary conditions are met (4.3.2.2). Supplementary pitch transcriptions (where [[—]] represents a high pitch and [_—] a low pitch) are, however, provided where they are helpful in clarifying the phonetic effects of automatic downstep.

4.3.2.1 Phonetic effect and placement of downstep

For descriptive purposes, the phonetic interval between H and a following L may be described as the spanning of two equal levels. If the number 2 represents an utterance-initial H tone, and the number 0 represents an adjacent L tone, the phonetic effect of downstep may be schematized as follows:



As the diagram shows, H tones are lowered to one level below that of the previous H whenever they follow a L tone. This lowering effect is iterative; it takes place with each HLH sequence. In Mambay, it is not clear whether the tonal register is lowered between L and H, or between H and L. Regarding other languages, this topic has been considered elsewhere (Snider 1999:21ff.).

In recordings of texts elicited from Oussoumanou Bouba, the principal collaborator, the effect of downstep is clear. The interval between H and a following L tends to be about 40 Hertz (Hz; 150–110 Hz), and the interval between L and a following H tends to be about half that (20 Hz; 110–130 Hz). The interval between two H tones separated by a L tone appears to be the same (20 Hz) whether or not the L is realized on the surface; in other words, the effect of automatic downstep appears to be the same as that of non-automatic downstep.

In the following sections, these claims are supported by pitch traces of utterances exhibiting both types of downstep (4.3.2.2 and 4.3.2.3). However, it should be noted that recordings are excerpted from longer texts and are therefore not controlled for the effects of tone register shift (4.4.1) and utterance length.

4.3.2.2 Automatic downstep

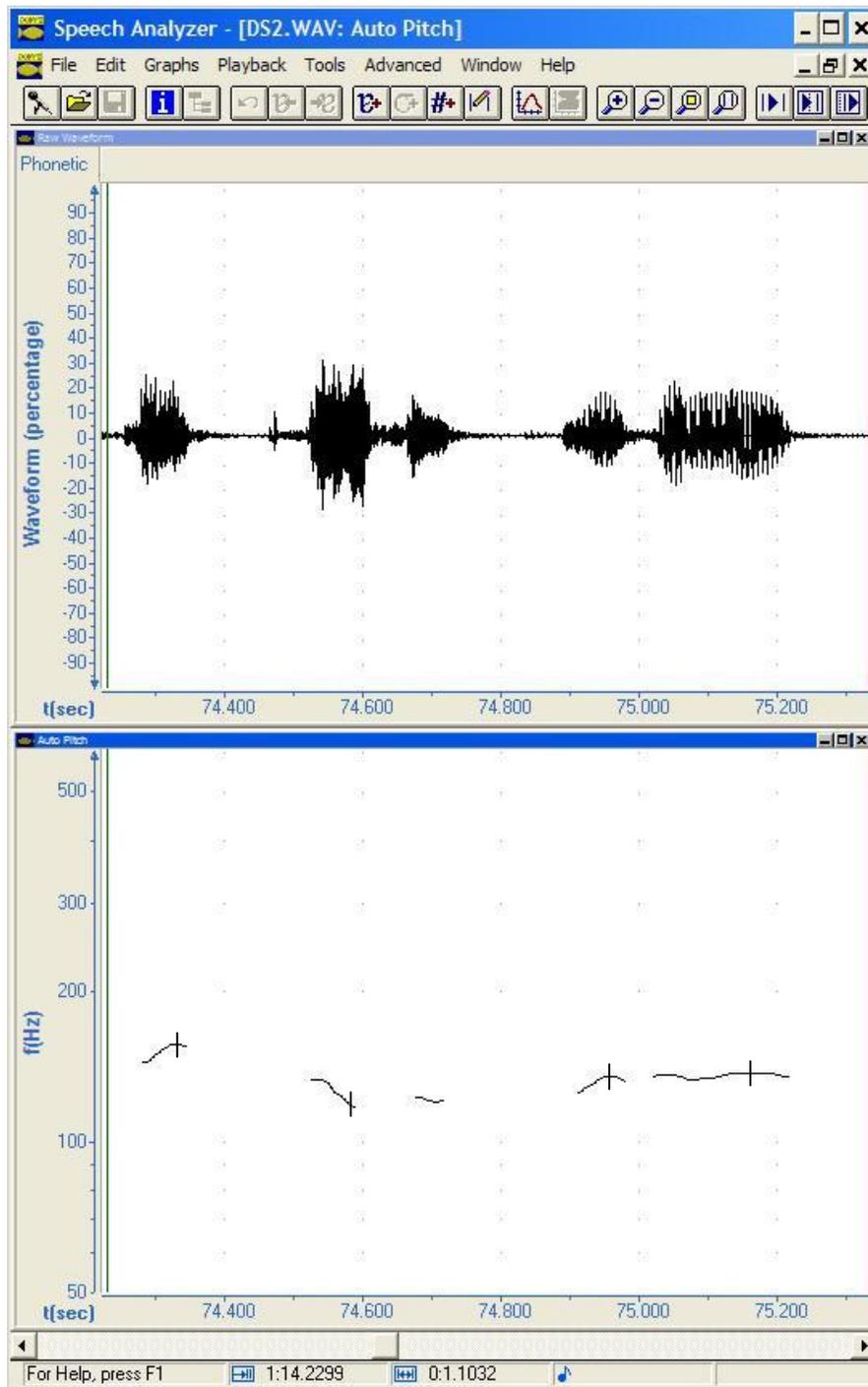
Automatic downstep refers to the lowering of a H tone after a HL sequence in which the L is realized on the surface.

<p>sî nàmá → valley animal</p>	<p>[— _ —] [sí nàmá] valley of animal</p>
<p>búgì bègé → hat slave</p>	<p>[— — _ —] [búgí bègé] hat of slave</p>
<p>?îg kyàg dígní → thing:LF hurt:VN liver:1SG.POSS.INAL</p>	<p>[— — — —] [?íg kyàg dígní] thing that hurts my liver</p>

High tone spread (4.3.3), which has applied to the first word in each of these examples, has no effect on the phonetic realization of downstep here or elsewhere.

A pitch trace of the third example, **?îg kyàg dígní** ‘thing that hurts my liver,’ is provided on the following page. This pitch trace confirms the operation of automatic downstep.

Pitch trace⁵ showing automatic downstep (see 4.3.2.2)



[? í g k y à g è à dí g í n í]
 F_0 (Hz): 156.7 117.9 135.5 137.9

⁵ In this pitch trace as well as the one on the following page, the pitch (i.e., F_0 = fundamental frequency) of each tone-bearing unit is given in Hertz (Hz). A short vertical stroke is used to mark the point at which the pitch has been measured; this point has been selected according to the principles set out in Snider (1998:97–8). The occurrence of echo vowels after **g** in this example is accounted for in 2.1.6.1.

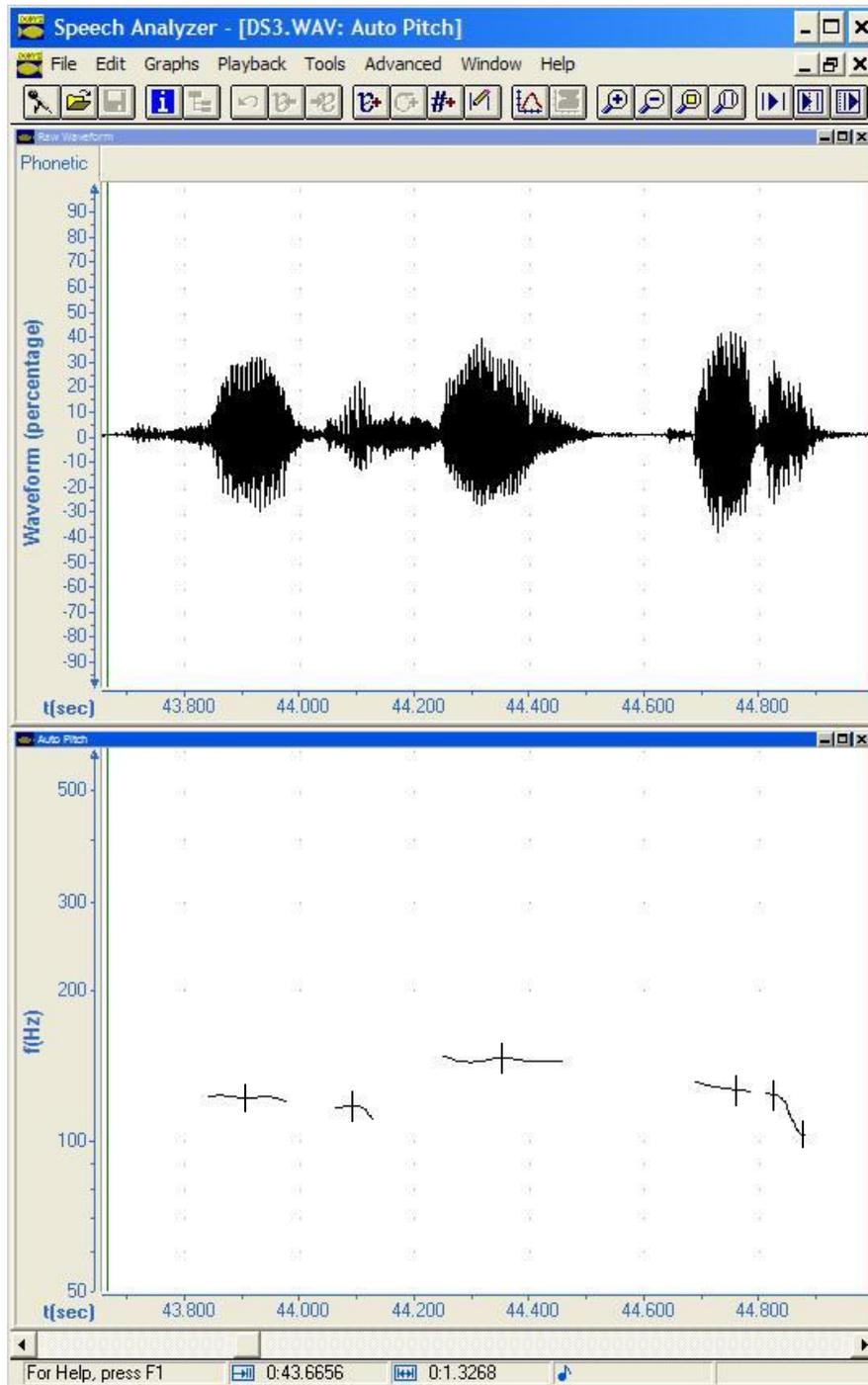
4.3.2.3 Non-automatic downstep

Non-automatic downstep refers to the lowering of a H tone after a HL sequence in which the L tone is floating (i.e., not realized on the surface). The floating L tone comes about as a result of HTS (4.3.3) both within words and across word boundaries.

bêrgá	sweetness	$\begin{array}{c} \text{HL} \quad \text{H} \\ \downarrow \neq \quad \\ \mu \mu \quad \mu \end{array}$
		[b é r'gá]
kíkòvì	coward	$\begin{array}{c} \text{H} \quad \text{L} \quad \text{H} \\ \downarrow \neq \quad \\ \mu \quad \mu \quad \mu \end{array}$
		[k í k ó'vì]
sî kpúŋ	valley hill	$\begin{array}{c} \text{HL} \quad \text{H} \\ \downarrow \neq \quad \diagdown \\ \mu \mu \quad \mu \mu \end{array}$
		[sî' +kpúŋ] valley of hill
búgì kpúŋ	hat hill	$\begin{array}{c} \text{H} \quad \text{L} \quad \text{H} \\ \diagdown \neq \quad \diagdown \\ \mu \mu \quad \mu \quad \mu \mu \end{array}$
		[búgì' +kpúŋ] hat of hill
zòògì sáà kwéré	bird:LF inside fence	$\begin{array}{c} \text{L} \quad \text{HL} \quad \text{HL} \\ \diagdown \quad \downarrow \neq \quad \diagdown \\ \mu \mu \quad \mu \quad \mu \mu \quad \mu \mu \end{array}$
		[zòògì sáá'kwéré] bird inside the fence

A pitch trace of the final example, **zòògì sáà kwéré** 'bird inside the fence,' is provided on the following page. This pitch trace confirms the operation of non-automatic downstep.

Pitch trace⁶ showing non-automatic downstep (see 4.3.2.3)



[z ò ò g ì s á á 'k w é r ê]
 F₀ (Hz): 122.0 118.0 146.8 127.5 124.5–103.0

⁶ See note 5 in the previous section.

4.3.2.4 Non-application of downstep

There are two restricted contexts in which downstep does not (or appears not to) apply: in nouns (either simple or compound) with a HLHL melody, and in sections of text for which tone register shift (4.4.1) has counterbalanced the effect of downstep.

The non-application of downstep in nouns (both morphologically simple and complex) with a HLHL melody is shown in the following examples:

wátùtáà	[$\bar{\quad} _ \searrow$] [wátùtáà]	salt, sugar
ná-kándédê	[$\bar{\quad} \searrow \bar{\quad} \searrow$] [nákándédê]	clitoris
máà-dùùgàrè	[$\bar{\quad} _ \bar{\quad} \searrow$] [máàdùùgàrè]	stork sp.

This appears to be a result of local raising of H tones before L tones, a phenomenon which has been reported in other languages (for example, see Snider 1990:456, 1998). However, the environment in which local raising takes place in Mambay is more specific than what is described in these accounts.

Apparent suspension of downstep is also one of several ways in which tone register shift may affect words or phrases in a discourse. The function and phonetic consequences of this phenomenon are discussed in 4.4.1, and an example text in which tone register shift has counterbalanced the effect of downstep is also provided.

4.3.3 High tone spread (HTS)

HL sequences in the language consistently provoke High tone spread (HTS), a pervasive postlexical process in which H tone spreads rightward onto an adjacent L-toned mora. The application of this process differs based on whether or not the HL sequence is phrase-final (4.3.3.1, 4.3.3.2). The case of HTS non-application with two-mora HLH nouns is given special attention (4.3.3.3).

4.3.3.1 Typical application of HTS

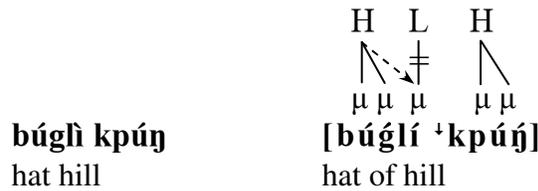
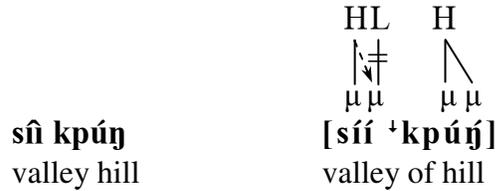
For most HL sequences—both word-internally and across word boundaries—the application of HTS involves a rightward spreading of a H tone onto an adjacent L-toned mora, and a delinking of the L tone from that mora. This is the most common application of HTS and is valid for non phrase-final HL sequences in particular (a variation is described in 4.3.3.1.2).

4.3.3.1.1 Word-internally

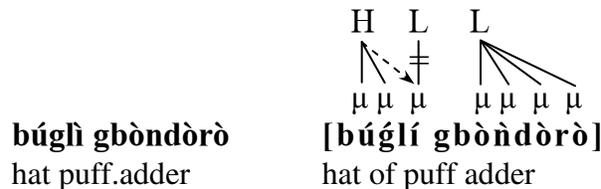
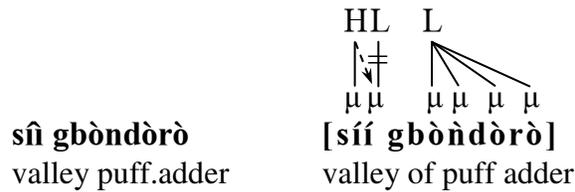
Word-internally, four of the seven tone melodies (4.1.2) contain HL sequences: HL, HLH, LHL and HLHL. Except for the first HL sequence in HLHL words and two-mora words with a HLH melody (4.3.3.3), the HL sequences in all of these melodies undergo HTS.

HL

Within HL words in non phrase-final position, HTS invariably applies. When a following word begins in a H tone, the presence of the floating L tone is signalled by downstep on that word.

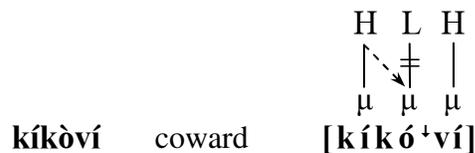


When a HL word is followed by a word beginning with a L tone, the H tone of the first word spreads onto its final mora, and the L tone of the first word detaches and is not realized on that mora.



HLH

Within HLH words, HTS also applies to a full extent. Since the HL sequence within a HLH melody is necessarily non phrase-final, HTS applies to HLH words in both phrase-final and non phrase-final position. This is evident in the following example:



Even when it does not surface, the persistent presence of the floating L tone in the first example is signalled by a downstep in the pitch the following subsequent H tones.

In addition to HTS, non phrase-final examples also undergo LTS (4.3.3.3).

	H L H L
	\ / \ /
	μ μ μ μ

kíkòví sùù
coward yesterday

in: **ḍáá kíkòví sùù** he/she/it found a coward yesterday

LHL

The HL sequence in word-internal LHL melodies also undergoes HTS (in addition, LTS must take place; cf. 4.3.3.3).

	L H L H L
	\ / \ / \ /
	μ μ μ μ μ

dǒḡnì sùù
wealth yesterday

in: **ḍáá dǒḡnì sùù** he/she/it found wealth yesterday

Because the LHL melody is levelled to L in possessive constructions (4.3.1.1), the structural conditions which trigger HTS are removed in that particular context.

HLHL

In the single HLHL morpheme in the data, the final HL sequence melody undergoes HTS in the same way as occurs in HL words. However, the first sequence does not.

	H L HL
	\ /
	μ μ μ μ

wátùtáâ salt, sugar **[wátùtáâ]**

Note also that downstep does not apply in this context (as described in 4.3.2.4).

4.3.3.1.2 Across word boundaries

HTS applies whenever a HL sequence is found across word boundaries. As is the case for word-internal HL sequences, it typically involves a rightward spreading of a H tone onto an adjacent L-toned mora, and a delinking of the L tone from that mora. This is shown in the following examples:

tí- + gbòndòrò	[tígòndòrò]
AUG puff.adder	large puff adder

kpúj gbòndòrò	[kpúj gbòndòrò]
hill puff.adder	hill of puff adder

kpúj bègé	[kpújé'gé]
hill slave	hill of slave

However, when the L tone of the second word is associated with an initial first syllable and at least one additional mora, the L is not delinked when H tone spreads onto the mora with which the L is associated. Instead, the H and L cohabit the initial light syllable of the second word; the underlying tonal contour is simplified and realized with a mid pitch.

tí- + gāràm	[tígāràm]
AUG hippo-hide.whip	large hippo-hide whip

kpúj gāràm	[kpújāràm]
hill hippo-hide.whip	hill of hippo-hide whip

4.3.3.2 Application of HTS phrase-finally

When an underlying HL sequence is found phrase-finally (i.e., on the last two morae), HTS applies. However, its effect is limited by an obligatory realization of utterance-final L tones. Consequently, when the H tone spreads onto the last mora, the L associated with this mora is not deleted, and the final mora is realized with a falling (high-low) contour pitch. This is the case whether the HL sequence is found within a word or across a word boundary.

sî	valley	$\begin{array}{c} \text{HL} \\ \downarrow \\ \mu \mu \\ \text{[sî]} \end{array}$
búgì	hat	$\begin{array}{c} \text{H L} \\ \swarrow \downarrow \\ \mu \mu \mu \\ \text{[búgì]} \end{array}$
kpúj rẹ̀ hill TOPIC	hill...	$\begin{array}{c} \text{H L} \\ \swarrow \downarrow \\ \mu \mu \mu \\ \text{[kpúj rẹ̀]} \end{array}$

4.3.3.3 The case of HTS non-application with two-mora HLH nouns

As stated above, there are two examples of a HLH melody on two-mora nouns (4.1.2.2): **nánà** ‘maternal uncle’ and **ʔázi** ‘member of ʔàzgàrà’ (see Glossary). The second H tone of these nouns floats on their right edge. Phrase-finally, it has no realization or other effect; such nouns sound like HL nouns in this context (4.1.2.6).

HL (phrase-final):	nínù	[nínù]	eye, face, life
HLH (phrase-final):	nánà	[nánà]	maternal uncle

However, when two-mora HLH nouns are found as linked forms (5.2.2) in the head position of possessive constructions (5.3), they behave differently than HL nouns: HTS is prevented from applying to the first H of two-mora HLH nouns because of the presence of the floating H on the right edge, which itself prevents the L tone from being delinked (for a description of segmental alternations that accompany the linked form, see 5.2.2.2).

	$\begin{array}{c} \text{HLH L H} \\ \downarrow \downarrow \downarrow \downarrow \\ \mu \mu \mu \mu \end{array}$
nán + dùgú	[nán dùgú]
maternal.uncle:LF 3PL.POSS	their maternal uncle

cf. HL nouns, where HTS applies in the same context:

	$\begin{array}{c} \text{HL L H} \\ \downarrow \downarrow \downarrow \downarrow \\ \mu \mu \mu \mu \end{array}$
nín + dùgú	[nín dùgú]
eye:LF 3PL.POSS	their eye

It is interesting that the presence of the floating H tone in **nàń** ´ **dùgù** is allowed to persist on the surface (in the form of perturbation in the realization of other tones), since other LH contours in linked nouns are consistently simplified to L (4.3.1.1):

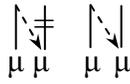
kíkòví + **gbòndòrò** → **kíkòvì gbòndòrò** (***kíkòví gbòndòrò**)
 coward puff.adder coward:LF puff.adder

This brings into question the very existence of a floating H tone in **nàńà** ´ and **?ázi** ´, since a process which affects some H tones could affect them all in the same way (i.e., non-realization). Still, it is a reasonable conjecture that a floating H might behave differently than one which is associated (cf. Yip 1989:151). Since no other workable account has been ascertained, the idea of a floating H tone on the right edge of **nàńà** ´ and **?ázi** ´ has been maintained throughout the discussion.

4.3.4 Low tone spread (LTS)

Low tone spread (LTS), a second pervasive postlexical process, involves the rightward spread of L tone onto an adjacent H-toned mora. In this way, it shows a strong resemblance to HTS (4.3.3). However, there is an imbalance between the two processes: LTS differs in that its application is limited to non phrase-final words. (Since H tone deletion applies to LH sequences in linked nouns in possessive constructions (4.3.1) and thus eliminates the environment in which LTS would otherwise apply, this construction is not used in the examples).

Examples of LTS are as follows:

	LH HL	
		
fùù sùù	[fùù sùù]	
trench yesterday		
in: ḁáá fùù sùù	he/she/it found a trench yesterday	

	LH L H	
		
fùù fààlé	[fùù fá à lé]	
trench back:3SG.C/I.POSS.INAL		
in: ḁáá fùù fààlé	he/she/it found a trench behind it	

L H HL

 μ μ μ μ μ
dàrmì sùù
 [dà̀r̀m̀ì sù̀ù]

clay yesterday

in: **ḍáá dàrmì sùù** he/she/it found clay yesterday

L H L H

 μ μ μ μ μ μ
dàrmì fààlé
 [dà̀r̀m̀ì fá à lé]

clay back:3SG.C/I.POSS.INAL

in: **ḍáá dàrmì fààlé** he/she/it found clay behind it

H L H HL

 μ μ μ μ μ
kíkòvì sùù
 [kík óvì sù̀ù]

coward yesterday

in: **ḍáá kíkòvì sùù** he/she/it found a coward yesterday

H L H L H

 μ μ μ μ μ μ
kíkòvì fààlé
 [kík óvì fá à lé]

coward back:3C/I.SG.POSS.INAL

in: **ḍáá kíkòvì fààlé** he/she/it found a coward behind it

L H L HL

 μ μ μ μ μ
dǒḡnì sùù
 [dò̀ḡ̀ǹì 'sù̀ù]

wealth yesterday

in: **ḍáá dǒḡnì sùù** he/she/it found wealth yesterday

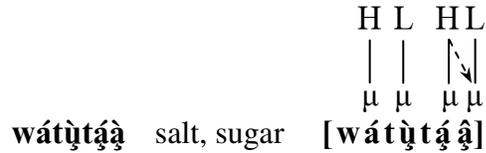
	L H L L H
	$\begin{array}{c} \downarrow \downarrow \downarrow \downarrow \downarrow \\ \mu \mu \mu \mu \mu \end{array}$
dǒŋ̀n̩ fààlé	[dòŋ̀n̩í fà à lé]
wealth back:3C/I.SG.POSS.INAL	

in: **dáá dǒŋ̀n̩ fààlé** he/she/it found wealth behind it

LTS does not apply to word-internal LH sequences in two cases: when the word that hosts the melody is phrase-final, and within HLHL morphemes. This is because in these contexts, there is no available mora onto which the L of the LH sequence can spread: the H tone, having no place onto which it can fully spread, is unable to delink and thereby free up its own mora for the L; and a LH sequence on a single mora is not permitted here (nor is it attested anywhere else in the language). The following examples show that LTS does not apply in phrase-final words (cf. the preceding set of non phrase-final examples):

fùú	trench	$\begin{array}{c} L H \\ \\ \mu \mu \\ \text{[fùú]} \end{array}$
bègé	slave	$\begin{array}{c} L H \\ \\ \mu \mu \\ \text{[bègé]} \end{array}$
dàrmí	clay	$\begin{array}{c} L H \\ \diagdown \\ \mu \mu \mu \\ \text{[dàrmí]} \end{array}$
kíkòvì	coward	$\begin{array}{c} H L H \\ \downarrow \downarrow \\ \mu \mu \mu \\ \text{[kíkó'vì]} \end{array}$
dǒŋ̀n̩	wealth	$\begin{array}{c} L H L \\ \downarrow \\ \mu \mu \mu \\ \text{[dòŋ̀n̩]} \end{array}$

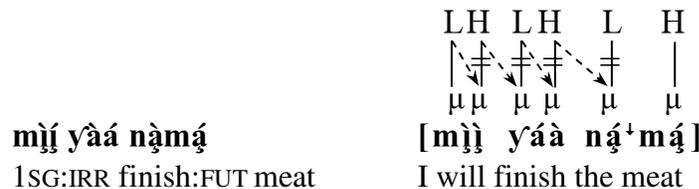
The absence of LTS is also evident for the LH sequence within the single HLHL morpheme in the data:



Note also that downstep does not apply in this context (as demonstrated in 4.3.2.4).

4.3.5 Adjacent operation of postlexical processes

Both HTS (4.3.3) and LTS (4.3.3.3) spread one mora, and to the right. Consequently, they never interfere with one another. However, they often operate in adjacent positions. Because of this, and because of the application of downstep (4.3.2), the underlying tonal structure of an utterance may be quite different than the surface realization initially seems to indicate. In addition to the examples in the previous section, the following example from the data illustrates this situation:



4.4 Intonational phenomena

Although most pitch-related configurations in Mambay can be explained by reference to the tone system, there are two frequently-occurring phenomena which appear to be intonational rather than tonal: tone register shift (TRS) (4.4.1) and the expectation marker (4.4.2). Both use intonation to signal pragmatic functions and thus interact closely with the tone system: while TRS controls the pitch register upon which tone is realized, expectation marking applies in reference to this register as well as to the tones related to it (for a detailed definition of intonation and a discussion of the interaction between tone and intonation, see Ladd 1996:7–8).

Declination, an intonational phenomenon whereby the tone register goes down gradually over the course of an utterance (Yip 2002:12, Snider 1990:453–4), has not been observed in Mambay. Instead, the effect of physiological constraints usually resulting in declination is overshadowed by downstep, which allows tonal register to drop according to phonologically determined intervals (cf. Yip 2002:12).

4.4.1 Tone register shift (TRS)

Tone register shift (TRS) is pervasive in discourse, and involves the raising and lowering of the register at which tones are realized. The pragmatic prominence of a given portion of text determines the degree to which its tone register is raised.

In keeping with features typical of a tonal system, TRS involves the vertical shifting of a pitch register at specific junctures rather than the gradual rise or fall of pitch over the course of an utterance.

However, one key feature of TRS suggests that its behaviour is more closely aligned with an intonational system than a tonal system: it arises as a result of stimuli in the pragmatic realm rather than structures in the phonological context. Two factors are related to this. First of all, TRS acts across syntactically unified portions of an utterance rather than individual morae. Secondly, the tone register may shift either up or down, and the degree to which a register shifts is not limited to incremental values, but is relative to the degree of pragmatic pressure in a given discourse.

In this study, the symbols [↗] and [↘] are used to indicate the direction of register shift (up or down); the number of times each one is used provides a relative indication of the vertical magnitude of the shift.

TRS applies in the following examples from the data:

	ʔà	kòg	↗	mí	he/she/it sees <i>me</i>						
	3:IMPFV	see:VN	TRS	1SG.OBJ							
cf.	ʔà	kòg		mí	he/she/it sees <i>me</i>						
	3:IMPFV	see:VN		1SG.OBJ							
	ʔà	ká	↗	pàrà	it is <i>good</i>						
	3:IMPFV	ATTRIB	TRS	goodness							
cf.	ʔà	ká		pàrà	it is <i>good</i>						
	3:IMPFV	ATTRIB		goodness							
	gyâh mûn	↗↗	lùgù	“,	↘	tǒg	↗↗	héérà	tǒg	héérà	
	sun	then	TRS	go.out:VN	EXPECT	TRS	be	TRS	climb:VN	be	climb:VN
	↗	tǒg	sóórà	↗	tǒg	sóórà	↗↗	tǒg	sóórà		
	TRS	be	get.hot:VN	TRS	be	get.hot:VN	TRS	be	get.hot:VN		

then the sun comes out, it is rising, it is rising, it is getting hot, it is getting hot, it is getting hot!

In the final example, TRS marked with a single rising arrow (↗) is realized as a neutralization of downstep (4.3.2) on the following text. Where two rising arrows are shown, the register is raised phonetically (a recording of this text is available from the online posting of Anonby 2006:231).

The present description provides only a general overview of TRS, and a number of aspects of the phenomenon deserve further investigation. These include: TRS and pitch range variation; relationship between syntactic constituents and the application of TRS;

differences in the extent to which TRS is used in various oral genres; and differences in the extent to which TRS is employed by various speakers of the language.

4.4.2 The expectation marker “

The expectation marker (here symbolized as “) is a non-segmental morpheme which raises the pitch of a phrase-final mora. Although its phonological identity may initially seem unclear, evidence suggests that like TRS (4.4.1), it is intonational rather than tonal (4.4.2.2). It has three important roles in the cohesion of text, all of which broadly relate to expectancy in a discourse: topicalization, the signalling of an incomplete utterance, and rhetorical question marking (4.4.2.3).

4.4.2.1 Phonetic realizations

The expectation marker has the consistent effect of raising the register of a phrase-final mora. When it links to a L-toned mora, this mora is realized with a high pitch equivalent to that of an (actual or hypothetical) preceding H-toned mora; and when it links to a H-toned mora, the mora is realized with a super-high pitch several intervals (4.1.1) above the baseline realization of the H-toned mora.

kúù bushland	“ EXPECT	→	[kúú] bushland, ...	(cf. 4.4.2.3)
nàmzá animal:PL	“ EXPECT	→	[nàm̩ / zá] animal, ...	(cf. 4.4.2.3)

4.4.2.2 Phonological identity

Phonologically, the expectation marker displays behaviour characteristic of both tone and intonation. Its confinement to a single mora as well as its phonetically consistent effect on pitch (4.4.2.1) are occurrences one might expect of a tonal element.

However, there is evidence that the expectation marker is essentially intonational. As the examples in the preceding section show, the expectation marker may attach to and be realized in words for which each TBU is already associated with a tone.

Because it does not require its own mora to be realized, it is necessary to address the possibility that the expectation marker might be a replacive tone. However, the mora to which it links continues to reflect the relative pitch of the underlying tone (the pitch of raised L is still a consistent interval lower than raised H; see the examples immediately above and 4.3.2.1). In this respect, the expectation marker functions intonationally rather than tonally.

4.4.2.3 Pragmatic functions

The expectation marker has three important roles in the cohesion of text, all of which broadly relate to expectancy in a discourse: topicalization (cf. 10.1.2.4), floor-holding (cf. 10.1.2.4), and rhetorical question marking (cf. 10.1.2.1). An example of each role is as follows:

topicalization:

nà mzá “ **gàh** **ʔéré** **má** **nà pùgpùgá**
animal:PL EXPECT midst 3PL.POSS with humankind

the animals, their dwelling was with humankind

floor-holding (cf. Payne 1997:358):

nà hzí **kááré** **vòró** **kùù** “,
take.out:PFV head:3PL.POSS.INAL to.there bushland EXPECT

mùn **tìzì** **nà mzí** **kùù**
then become:PFV animal:PL:LF bushland

they departed for the bush [...], and became wild animals

marking of rhetorical questions:

mù **húm** **nà kógrà** “
2SG come look(n.) EXPECT

you came to look, didn't you?

Interestingly, the first two of these three roles overlap with those of the topicalization particle **rè** (10.1.2.4), and the two morphemes may be used together, as shown by the following example:

mì **rè** “, **mì** **yáá** **kâ'** as for *me*, I stayed here
1SG TOPIC EXPECT 1SG stay:PFV here

5 NOUNS

This chapter is a description of nouns in Mambay. The first major section (5.1) outlines the morphological structure of nouns. In particular, noun roots are presented in reference to attested root shapes and allowable tone melodies. Prefixation is then analyzed as a morphologically salient process involving a mixture of compounding and derivation. Suffixation, in contrast, is referred to as a primarily derivational process which, although it has significantly impacted noun structure, is synchronically unproductive and morphologically indistinct. Reduplication, a minor phenomenon in regard to nouns, is mentioned briefly.

A second major section (5.2) deals with a basic morphological distinction between free (unmarked) and linked noun forms. Linked forms, which are subject to various morphological templates depending on the structure of their free form, are used for head nouns in most noun phrase constructions. Following this, a section on possessive constructions (5.3) complements the discussion, since both free and linked forms are used in this context. The description of possessive constructions, which are the most important type of noun phrase construction in the language, revolves around three axes. First of all, a continuum between spontaneous and fixed possession is established. The issue of optional vs. obligatory possession is then considered. The greatest part of the discussion, however, deals with the distributional and structural characteristics of alienable vs. inalienable possession. A section on compound nouns (5.4) follows naturally on that of possessive constructions, since most compound nouns are structured in the same way. Formal and behavioural particularities of compound nouns are also accounted for.

Plural formation, which comprises an additional topic (5.5), is achieved by means of a loosely defined morphological template. In this section, the scope of pluralization is delimited, and a range of possible structural alternations is recognized. Collective constructions, which constitute an alternative plural-like strategy for some nouns, are also considered (5.6).

In subsequent sections, four derivational topics are considered: participant noun constructions (5.7), diminutives and augmentatives (5.8), verbal nouns (5.9) and the promotion of modifiers to independent noun status (5.10). A mixture of derivational strategies, including but not limited to affixation, is common to all four phenomena. For verbal nouns in particular, complications in determining the direction of derivation are

acknowledged. Ordinal numerals, which constitute a closed category of nouns derived from numerals, are dealt with in the presentation on numerals (9.1.3).

In later sections, ideophonic nouns (5.11) and proper names (5.12) are given special attention, and the locative function of nouns is delineated in 5.13. In the final section, an overview of noun phrase constructions is provided (5.14).

5.1 Morphological structure

The relatively large syllable shape inventory of Mambay (2.4.1) allows for an array of noun root shapes (5.1.1.1) accompanied by a variety of tone melodies (5.1.1.2). These roots vary from between one and four syllables.

Affixation plays a basic role in Mambay noun structure. Nouns may take prefixes (5.1.2) as well as suffixes (5.1.3). Noun prefixes in Mambay do not appear to be related to the systems of noun classification prevalent elsewhere in Niger-Congo (5.1.2, Anonby 2008:3; contra Greenberg 1963:9, 11). Mambay noun prefixes, which are associated with derivation (for example, noun-to-noun and verb-to-noun), do not operate in conjunction with any system of noun class concord or singular/plural alternation. Although most or all of the prefixes are reflexes of simplified linked nouns (see 5.3.3.3.1), the compound-like nature of many of the prefixes is no longer semantically transparent. In addition, the process of prefixation itself is no longer productive for many of the prefixes, which are obligatorily found with specific nouns in the lexicon.

Apart from pronouns in inalienable possessive constructions (5.1.3.1), productive noun suffixation is lacking in Mambay. Although some suffixes carry a definable semantic value, most are phonologically fused to the roots they accompany. Evidence for historical suffixation is reviewed in 5.1.3.2.

In addition to affixation, the noun system exhibits reduplication of noun roots. The forms and possible functions of this process are discussed in 5.1.4.

Compound nouns and verbal nouns, which are well-represented in the lexicon, are described in later sections (5.4 and 5.9 respectively).

5.1.1 Noun root structure

Noun roots show considerable diversity in their structure. There is a wide variety of attested root shapes (5.1.1.1), and noun roots are found with all of the seven contrastive tone melodies found in the language (5.1.1.2).

5.1.1.1 Attested root shapes

The large inventory of noun root shapes in Mambay is in keeping with the large syllable inventory (2.4.1) and the allowing of noun roots with more than one syllable. In total, 30 distinct noun root shapes are attested in words of Mambay origin, and an additional 14 shapes are found in borrowed words.

While the minimal noun root consists of a single heavy syllable, roots with more than one syllable are numerous. In fact, disyllabic noun roots are by far the most common type in the lexicon. On the contrary, trisyllabic roots are uncommon, and the distinction between a noun root and an opaque compound noun is often difficult to make in such cases (see 5.4.3). Noun roots with four syllables are limited to borrowed words.

Below is an inventory of all the attested CV shapes of non-borrowed, simple noun roots in the data (i.e., those that are not verbal nouns or compounds), of which there are a total of 707. The number of occurrences of each root shape is given, and each shape is illustrated with an example. Examples with no or little phonological ambiguity (cf. 2.1.4, 2.2.4, 2.3.3) are given when possible. This inventory is followed by a list of root shapes found only in borrowed words, along with an example of each shape.

As explained in 5.1.2.2, obligatory noun prefixes (e.g. **nǎ-**, **ti-**, etc.) are not included as part of the noun root shape. The length of pharyngealized vowels (**Vh**) in the examples below follows the convention established in 2.3.3.2.7.

root shape	# of occurrences	example	
monosyllabic roots: 5 shapes			
CVV	(66)	báà	cane rat
CVC	(31)	zûm	seam, hem, divide
CCVV	(66)	kwàá	neck, voice
CCVC	(2)	swâhy	elder, old man
CVVC	(1)	rùùgè	cylindrical shape
disyllabic roots: 13 shapes			
CV.CV	(120)	sírò	grave
CV.CVV	(1)	bàhǎà	ibis sp.
CV.CVC	(16)	kùrùm	ground hornbill
CCV.CV	(1)	kwéré	fence
CCV.CVC	(1)	nǎ-dwárǎŋ	sore, pimple
CVV.CV	(209)	kéélà	arrow shaft
CVV.CVC	(6)	zùùrùm	fish sp.
CVC.CV	(119)	pìrlá	torch, flashlight
CVC.CVC	(9)	mǎŋsîŋ	amoebic dysentery
CCVV.CV	(19)	fwǎǎnǎ	snail, shell
CCVC.CV	(5)	gyáglè	flute
CVVC.CV	(1)	nǎ-táállá	ant sp.
CVVC.CVV	(1)	tí-tòontî	lark (bird sp.)
trisyllabic roots: 12 shapes			
CV.CV.CV	(7)	kíkòví	coward
CV.CV.CVV	(1)	wátùtǎà	salt, sugar

CV.CVV.CV	(3)	pìpùùrí	horn (instrument)
CV.CVV.CVC	(1)	nà-bíbáhrâm	bedbug
CV.CVC.CVV	(1)	nà-kúrúmbáà	fish sp.
CV.CVC.CV	(4)	lágàngá	water turtle sp.
CCV.CV.CV	(1)	kwèzágà	red millet
CVV.CV.CV	(5)	wààgùnà	large basket
CVV.CV.CVC	(1)	bààbùrùm	main room
CCVV.CV.CV	(1)	vwàhgíle	intrusion
CVC.CV.CV	(5)	nà-dígzilè	algae
CVC.CV.CVC	(1)	tí-kóṅkórôṅ	red ant sp.
CVC.CVC.CV	(2)	sìnzàhwlà	porcupine

root shapes found only in borrowed words: 14 shapes

CVVCC	táábì	table (French borr.)
CV.CCVC ⁷	mìsyôṅ	mission (French borr.)
CVV.CVV	wàhsòò	gift (Fulf. borr.)
CVC.CVV	làmpòò	tax (French borr.)
CV.CV.CVV	?ávókáà	avocado (French borr.)
CV.CV.CVC	?ánánâz	pineapple (French borr.)
CV.CVC.CCV	sólóṅzyì	green monkey (Fulf. borr.)
CV.CCVV.CV	mùswáári	sorghum (Fulf. borr. via Mundang)
CVV.CVV.CV	géélóóbà	camel (Fulf. borr.)
CVV.CVC.CV	fúúnàngè	north (Fulf. borr.)
CVC.CVC.CCV	tándáwzyè	taro (coarse variety) (Fulf. borr.)
CVC.CCVV.CV	mùzkwáàrè	sorghum (Fulf. borr.)
CV.CV.CVV.CV	málapáárè	hat sp. (Fulf. borr.)
CV.CVC.CV.CV	?àlàṅgétà	flute (Fulf. borr.)

As is evident from the numbers given in the table above, the most common noun shapes are a single heavy syllable, two light syllables, and a heavy syllable followed by a light one. These shapes may be considered canonical, and are compatible with the linked noun (5.3.3.3.1) and plural templates (5.5); other, less-attested shapes tend to exhibit packages of non-canonical features and resist morphological templates (see, for example 5.2.2.3 and 5.5.1.1).

5.1.1.2 Allowable tone melodies

All seven tone melodies (H, L, HL, LH, HLH, LHL, HLHL; see 4.1.2) are found with noun roots. Contrast between these melodies is demonstrated in 4.1.2.5. Selected examples of each of the tone melodies associated with noun roots of various shapes are

⁷ This interpretation has been chosen for this item because semivowels are never found in the second position of a morpheme-internal consonant sequence in the Mambay data (2.1.2.6). Whenever Cy occurs word-internally, it is the onset of a morpheme-initial syllable within a morphologically complex word (5.1.2.2).

reviewed here. The number of simple noun roots with which each tone melody occurs is also given.

H (22 occurrences):

kpúŋ	hill
ná-dídá'	summit
kókól	small drum
núúrú	breast
máŋdírí	tree sp.

L (38 occurrences):

yèb	peace, wholeness
màlà	art, craft
gàràŋ	hippo-hide whip
dèglèm	insect sp.
wààgùnà	large basket

HL (321 occurrences):

sî	valley, river
bádà	tamarind
tíílò	eagle sp.
búglì	hat
síígíró	stork sp.

LH (241 occurrences):

fùú	trench
gùrá	fish trap
vbààlá	testicle
tùlgúm	fish sp.
pìpùùrí	horn (instrument)

HLH (61 occurrences):

háàvá	snake sp.
tùrím	fish sp.
bérgá	sweetness
kíkòví	coward
híjvìlá	slimy mud

LHL (23 occurrences):

bàhàà	ibis sp.
bàvbâw	fish sp.
lèégè	nightjar
dǒŋnì	wealth
vwàhgìlè	intrusion

HLHL (1 occurrence):

wátùtáà	salt, sugar
----------------	-------------

As is evident from the numbers of occurrences in the list above, the tone melodies HL and LH are far more commonly found on noun roots than other melodies. In contrast, other melodies are uncommon, and the roots with which they are found tend to be non-canonical (1.3.1).

5.1.2 Prefixation

The Mambay language, like its close relatives Mundang and Tupuri (Elders 2000:125–47, Ruelland 1992:144–6), is characterized by recurrent noun prefixes. In Mambay, there is a series of twelve derivational prefixes:

dà-	kì-	si-
fà-	mà-	ta-
fí-	nà-	ti-
ka-	pa-	?ì-

While some of the prefixes are used synchronically as a productive means of derivation, others are an obligatory component of specific nouns (over 200 of 707 simple roots, as well as many compound and verbal nouns; see also 5.1.2.1 and 5.9.2.1). It is likely that all of the prefixes originated as typical possessed (head) nouns but have been reduced to a CV shape through frequent usage. Proposed etymologies, which are defended in the discussions on each prefix (5.1.2.4), are as follows:

dà-	from	dàá	papa
fà-	from	fààlá	back, skin, place
fí-	from	fíílò	house
ka-	from	káálà	head, reason
kì-	from	kyă'	place, time, atmosphere
mạ-	from	mạ́ạ̀nị	mother (al.)
nạ-	from	nạ́mạ	animal, meat
pá-	from	páà	man, father
si-	from (?)	sî	valley, river; or
	from (?)	sị̀rạ	year
ti-	from	tîrạ / túù	mother (al.), matron / mother (inal.)
?ì-	from (?)	?ígà	thing

The prefix **ta-** has not been identified with a possible source noun in Mambay.

Some of the prefixes are semantically transparent, but the synchronic semantic contribution of others is in many cases variable. The prefixes **fí-**, **kì-**, **tí-** (when used as a female participant prefix or in an augmentative capacity; see 5.7.2 and 5.8.2) and **?ì-** are completely productive and, unsurprisingly, their semantic contribution is consistent; in contrast, the other prefixes, all of which are confined to use as part of specific lexical items, supply an unpredictable and at times negligible semantic value. These prefixes do not operate in conjunction with any system of noun class concord or singular/plural alternation (Anonby 2008).

In the subsections that follow, the structure and distribution of noun prefixes are described (5.1.2.1), and reasons for positing the morphological distinctness of these prefixes are provided (5.1.2.2). After a demonstration of their derivational nature (5.1.2.3), each of the prefixes is presented along with examples which illustrate its distribution and clarify its semantic contribution (5.1.2.4).

5.1.2.1 Structure and distribution

Each prefix is comprised of a single light (CV) syllable. This contrasts with noun roots, which are minimally comprised of a heavy syllable (5.1.1.1).

Prefixes bear a simple H or L tone. The tone found on a given prefix is not synchronically correlated with the tone melody of the accompanying noun root; both H and L prefixes are attached to nouns representing H-initial and L-initial tone melodies.

ká-síblè	termite sp.
ká-kààlá	cocoon
kà-ḃá'rè	fish sp.
kà-kàhlé	throw-knife

In addition to showing the tonal independence of prefixes, such examples illustrate the dual tonal identity of some of the prefixes. In particular, **tí-/tì-**, **ná-/nà-** and **ká-/kà-** are sometimes found in the lexicon with H tone, and sometimes with L tone; however, the tone of a prefix which is an obligatory component of a given prefixed lexical item is invariable with that item. With the exception of the three synchronically productive derivational prefixes (5.1.2.4.3, 5.1.2.4.5, 5.1.2.4.11), there is no consistent semantic or tonal explanation for the appearance of some prefixes with either H tone or L tone.

Nasality does not spread across the prefix-noun boundary.

nà-rúvò	phlegm, moist object
ná-yágrá	ululation
tí-náǎnì	dragonfly
tí-kà-ràhgú	large heron sp.

It is possible for a sequence of two prefixes to be part of a single lexical item. The combinations **ná-sí-**, **pá-tá-**, **tí-ka-** and **tí-nà-** are attested, as shown by the following examples:

ná-sí-swǎh	leech
pá-tá-kpáhbrù	cuckoo
tí-ká-ḃǔ'	aquatic plant sp.
tí-kà-ràhgú	large heron sp.
tì-kà-zú'	fish sp.
tí-nà-bùùzà	Orion's belt
tí-nà-dáázá	spider
tì-nà-mùùrǎ	jinn, totem, vision

Prefixes may attach to simple noun roots (as shown in the examples above) or morphologically complex stems. Examples of prefixes used with compound nouns (5.4) and reduplicated nouns (5.1.4) are as follows:

compound nouns:

tí-nàm-kùù-dù'gá	giraffe
PFX-animal:LF-neck:LF-length	
tì-kùm-tí-sùú	sorcery sp.
PFX-protect:VN:LF-PFX-fabric	

reduplicated nouns:

tí-dúú-dùù	owl sp.
tì-gbùl-gbùl	large air bubble in water

5.1.2.2 Morphological distinctness of prefixes

For productive as well as lexically determined prefixes, there are a number of indicators of the morphological distinctness of prefixes from the nouns with which they are associated.

To begin with, prefixes are found recurrently in the lexicon. The prefix **nǎ-**, for example, is an obligatory component of 171 non-compound noun roots in the data (5.1.2.4.7).

Prefixes are all comprised of a single light CV syllable; noun roots, on the other hand, are minimally comprised of a heavy syllable (5.1.1). In this regard, prefixation is morphosyntactically distinct from noun + noun compounding in Mambay, which links two morphologically satisfactory nouns (5.4.2).

Further, the inventory of CV shapes attested among non-prefixed noun roots is equivalent to the inventory of CV shapes found on the root portion of obligatorily prefixed nouns. If prefixes were to be included as part of noun roots, it would compromise the regularity of the inventory of CV shapes: most of the existing root shapes would have to be duplicated in the inventory with an initial CV syllable; and the only four-syllable nouns of Mambay origin would be those with a prefix.

Segmental distribution also strengthens the idea that prefixes are not part of the noun root: C-semivowel consonant clusters (2.1.2.5) and specific consonants (**d**, **kp**, **gb** and **ʔ**; cf. 2.1.2), which are elsewhere found only in morpheme-initial position, are found after prefixes.

nǎ-syàá	fire, gun
tí-gwáá-vààrí	ancestral spirit sp.
pá-dálà	oribi (antelope sp.)
tí-kpéhwè	goose sp.
nǎ-gbáhrà	peace
nǎ-ʔáà	bean leaves

Moreover, prefixes do not form part of the lexical tone word; the tone of the prefix is associated independently from the highly constrained tone melody sequence on the accompanying root. If the prefix were part of the tonal word, it would associate in the same way as equivalent CV structures where there is no prefix (4.1.2.2).

tì-kúrgú	dwelling, main room (hypothetical single tonal word: *tìkùrgú)
nǎ-dígzilè	algae (hypothetical single tonal word: *nǎdígzilè)

The fact that nasality does not spread across the prefix-noun boundary (3.4.3.7) is an additional phonological argument for the morphological distinctness of prefixes and the nouns with which they are associated.

nà-rúvò	phlegm, moist object
tí-náánì	dragonfly

Since, elsewhere in the language, nasality regularly associates throughout morphemes unless blocked by obstruents or mid vowels (3.4.2), it is evident that prefixes—even those which are lexically determined—have not been phonologically incorporated into noun roots.

Finally, perhaps the strongest argument for morphological distinctness is the alternation of prefixes in noun-to-noun and verb-to-noun derivation. This is explored in the following section.

5.1.2.3 Derivation with prefixes

Prefixation is a mechanism by which nouns are derived from nouns (5.1.2.3.1), verbs (5.1.2.3.2) and other parts of speech (5.1.2.3.3). In noun-to-noun derivation, some prefixes are synchronically productive (see 5.1.2.1). In other cases, however, prefixes are obligatory components of specific nouns; in such instances, prefixation must be treated as a historical inheritance rather than a synchronic process.

5.1.2.3.1 Noun-to-noun derivation

Prefixes are used to derive nouns from other nouns. In the case of the prefixes **fí-**, **kì-** and **tí-** (when used as an augmentative; see 5.8.2), this derivational mechanism is synchronically productive (see examples of each prefix in 5.1.2.4).

fí-gòorá	kitchen (i.e. room of preparation)	cf. gòorá	preparation
fí-súngà	bedroom (i.e. room of lying down)	cf. súngà	lying down

In other cases, a prefix's distribution is lexically determined; however, the historical role of derivation is often discernible. The following list presents obligatorily prefixed nouns where a semantically related source noun is independently attested in the language.

dà-zwâ'	grandfather	cf. zwâ'	ancestry
fà-dágà	crumbs after a meal	cf. dágà	mouth, edge
fà-syâh	handprint, writings	cf. syâh	hand
nà-?áà	bean leaves	cf. ?áà	bean
nà-fâh	doorway	cf. fâh	path
nà-kwàá	necklace	cf. kwàá	neck, voice
nà-pùgá	person	cf. pùgá	blackness, darkness
sí-kètí	God	cf. kètí	sky, above
tí-sígò	fetish against thievery	cf. sígò	crocodile
tí-níínà	molar	cf. níínà	lower millstone, mill

tí-vúù antelope sp.; ibis sp. cf. **vúù** sheep, goat

As the above examples show, there are many cases where a semantic relationship between a derived noun and its source is apparent. In a few instances, there is little or no semantic difference between the two:

nà-núúrú	breast	cf. núúrú	breast, human milk
nà-nìnnú	bum	cf. nìnnú	bottom, meaning
tí-zà'rá	dance sp.	cf. zà'rá	dance
tì-nà-mùùrú = nà-mùùrú			jinn, totem, vision
tí-síblè ~ ká-síblè ~ tí-ká-síblè = síblè			termite sp.

In numerous cases, however, the semantic relationship between a derived noun and its apparent source is unclear.

nà-vbyâ'	treachery	cf. vbyâ'	marsh
ká-kààlá	cocoon	cf. kààlá	axe
tì-nà-mùùrú	jinn, totem, vision	cf. mùùrú	silt
tí-nà-dágà	Pleiades	cf. dágà	mouth, edge

In a number of cases, a sort of historical noun-to-noun derivation has applied in which borrowed nouns are reinterpreted as having noun prefixes. There appear to be two reasons for this. First, the interpretation of existing word-initial syllables helps borrowed nouns to conform to common root shapes (cf. 5.1.1.1).

má-swàrì	sorghum (Chad dialect)	(cf. Fulf. <i>muskuwaari</i>)
tí-búúnúyè	date (fruit)	(cf. Fulf. <i>dibinooje</i> (pl.))
tí-kúúzè	papaya	(cf. Fulf. <i>dukuuje</i> (pl.))
tì-páà	tobacco	(cf. Fr. <i>tabac</i>)
tí-ríírì	onion	(cf. Fulf. <i>tinyeere</i>)

Second, prefixation may underline the non-canonical status of some borrowed words (cf. 1.3.1).

nà-búndúgáá	rifle	(cf. Arabic <i>bunduqīyah/bundugīyah</i>)
nà-lígtíríg	electric fish	(cf. English <i>electric</i> via Hausa; Fr. <i>électrique</i>)
tí-kéérééwà	giraffe	(cf. Fulf. <i>kireewa</i>)

5.1.2.3.2 Verb-to-noun derivation

Prefixes also appear on irregular verbal nouns, where they reflect a historical verb-to-noun derivation.

nà-sèl	dispute (n.)	cf. sèl	dispute (v.)
nà-tú'	proverb	cf. tú'	show, teach

tì-ryâh ululation cf. **ryâh** cry (v.)

Other characteristics of verb-to-noun derivation are discussed in 5.9, where numerous examples are also provided.

5.1.2.3.3 Derivation of nouns from other parts of speech

The prefix **?ì-** (5.1.2.4.12) is productively used to derive modifiers from a number of word classes by promoting them to the status of independent noun (5.10).

bàhlàm	thick, fat	?ì-bàhlàm	that which is thick, fat
gúrúru	deep	?ì-gúrúru	that which is deep
kètí	above	?ì-kètí	that which is above
náá	this, these	?ì-náá	this (n.), these (n.)
zódôm	ten	?ì-zódôm	the ten [of them]

5.1.2.4 Inventory of prefixes

In the present section, each of the noun prefixes is presented in alphabetical order along with comments on productivity, frequency in the lexicon, historical origins, and semantic value, as well as examples.

5.1.2.4.1 dà-

The prefix **dà-** is lexically determined, and is attested with two nouns in the data:

dà-ván	minnow sp.	
dà-zwâ'	grandfather	(cf. zwâ' 'ancestry')

Considering the meaning of **zwâ'** in **dà-zwâ'**, it is possible to posit the origin of **dà-** in **dàá** 'papa' (compare also Mundang *dàbì / dà-* 'man, person'; see Elders 2000:125, 138–40).

That the word **dà-ván** 'minnow sp.' is a prefixed CVC root rather than a CVCVC noun is confirmed by the fact that high tone of the root does not flatten to L in the context of the possessive construction, as is the case with LH nouns (cf. 5.2.2.1):

dà-ván	dà-ván ?íí	minnow sp. / my minnow sp.
cf. tùlgúm	tùlgúm ?íí	fish sp. / my fish sp.

5.1.2.4.2 fâ-

The prefix **fâ-** is lexically determined, and is attested with four nouns in the data:

fâ-gbàhŋ	outside (n.)	
fâ-'màhná	footprint	(cf. 'màhná 'foot')
fâ-pààrá	ground readied for cultivation	(cf. pààrá 'field, farm')
fâ-syâh	handprint	(cf. syâh 'hand')

It is likely that **fà-** originates in the noun **fààlá** (linked form: **fàà**; cf. 5.2.2.2.6.1) ‘back, skin, place,’ and this semantic value is appropriate given the nouns in the data. It should also be noted, however, that Mundang has a prefix *fâ-* derived from *fânì* ‘thing’ (Elders 2000:125, 136–7).

For three of the four terms above, whose root is also independently attested, there is a structural as well as semantic difference between nouns with **fà-** as an obligatory prefix and those with **fàà** as a possessed noun.

fà-'màhná footprint
(cf. **fàà 'màhná** ‘top of the foot, area behind the foot, place of the foot’)

fà-pààrá ground readied for cultivation
(cf. **fàà pààrá** ‘back of the field, area behind the field, place of the field’)

fà-syâh handprint
(cf. **fàà syâh** ‘back of the hand, area behind the hand, place of the foot’)

In dialects north of the Mayo Kebbi, the prefix **fà-** is synchronically productive rather than lexically determined, and consistently carries the meaning of **fààlá / fàà** ‘back, skin, place.’ Because of this, there is no distinction in these varieties between the noun pairs directly above.

5.1.2.4.3 **fí-**

The prefix **fí-** is synchronically productive and exhibits the same range of meaning as its historical source **fíílò**: ‘house, room, chamber, concession, dwelling, context.’ Since there is no commonly used alternative linked form for **fíílò** (see 5.2.2.2.6), the prefix-noun constructions in which it is found function semantically like compounds and/or possessive constructions. Prefix-noun constructions in which it is attested in the lexicon include the following words:

fí-gòòrá	kitchen	(cf. gòòrá ‘preparation’)
fí-kòòlá	womb	(cf. kòòlá ‘birth’)
fí-nù-mírà	outhouse	(cf. nù ‘defecate,’ mírà ‘excrement’)
fí-súúbà	bladder	(cf. súúbà ‘urine’)
fí-súngà	bedroom	(cf. súngà ‘lying down’)
fí-tí-nà-dáázá	spider’s web	(cf. tí-nà-dáázá ‘spider’)
fí-zòògá	bird’s nest	(cf. zòògá ‘bird’)

5.1.2.4.4 **ka-**

The prefix **ka-** is lexically determined, and it has two tonal forms (**ká-/kà-**) which are also lexically determined; the reason for the appearance of two forms is unknown. It is attested with twelve nouns in the data:

kà-bá'rè	fish sp.	
kà-fèè	coffee	(cf. Fr. <i>café</i>)
kà-kàhlé	throwing knife	
kà-ràhbá	blueness	
tí-kà-kàà	goose sp.	
tí-kà-ràhgù	large heron sp.	
tì-kà-zù'	fish sp.	
ká-síblè ~		
tí-ká-síblè	termite sp.	
ká-táрко	bridge	(cf. Fulf. <i>katarko</i>)
ká-kààlá	cocoon	(cf. kààlá 'axe')
tí-ká-vbù'gá	plant sp.	

There does not seem to be any consistent semantic difference between nouns of each tonal form. It is possible that **ka-** originates in the common Mambay word **káálà** 'head.' Mundang also has a tonally ambivalent prefix *ka-* and Tupuri has *kV-*; for both of these, the historical origin is undetermined (Elders 2000:125, 146; Ruelland 1992:145).

5.1.2.4.5 **kì-**

The prefix **kì-** is synchronically productive and exhibits the same range of meaning as **kyǎ'** 'place, time, state, atmosphere, condition,' from which it is historically derived. As is the case for **fí-**, the prefix-noun constructions in which it found function semantically like compounds and/or possessive constructions. Prefix-noun constructions in which it is attested in the lexicon include the following words:

kì-gòhṛòṅ	bend (n.)	(cf. gòhṛòṅ 'bent')
kì-pǔ'	light, clarity	(cf. pǔ' 'whiteness, innocence')
kì-rí'rò	entryway	(cf. rí'rò 'entering')
kì-róhlgòm	joint (body)	(cf. róhlgòm 'joint (body)')
kì-sòògá	dry season, galaxy	(cf. sòògá 'hotness, smithy')
kì-vìrìm	thin darkness	(cf. vìrìm 'thinly dark')
kì-zàà-byàá	ford	(cf. zàà 'cross,' byàá 'water')

kì- is also used productively in verbal noun constructions involving place or intent (cf. 7.6.3).

vè-lé kì-kòg zǎh he/she/it went to see the ox
 go:PFV-3SG.REFL place:PFX-see:VN ox

5.1.2.4.6 **mạ-**

The prefix **mạ-** is lexically determined and is attested with four nouns in the data:

má-nâ'	man's mother-in-law	
má-ràrírà	oily substance	
má-swàrì	sorghum (Chad dialect)	(cf. Fulf. <i>muskuwaari</i>)
má-zwâ'	grandmother	(cf. zwâ' 'ancestry')

The occurrence of **má-** in **má-zwâ'** 'grandmother' is parallel to its appearance in **dà-zwâ'** 'grandfather' (cf. 5.1.2.4.1). It may be historically derived from **màḿḿḿ** 'mother (al.)'. That the H-toned form is indeed a prefix is underlined by the tone melody of **má-swàrì** 'sorghum,' which does not exhibit a standard tonal association of HL starting on the right edge of the word (cf. 4.1.2.2). Its appearance with H tone in Mambay could be the result of borrowing or pressure from Mundang, which has a *má-* noun prefix originating in *māḿḿ* 'mother' (Elders 2000:125, 132–6).

5.1.2.4.7 nâ-

The prefix **nâ-** is lexically determined, and it has two tonal forms (**nâ-/nâ-**) which are also lexically determined; the reason for the appearance of two forms is unknown. Of the obligatorily attached prefixes, **nâ-** is the most common: there are 25 occurrences of **nâ-** and 146 occurrences of **nâ-** as obligatory components of non-compound noun roots. Examples of words exhibiting both tonal forms are as follows:

nâ-gbògòngà	waterlily bulb
nâ-lèhgá	bat
nâ-sâh	request
nâ-sènrá	toothache
nâ-vàhlá	minnow
nâ-gáhgù	crow
nâ-gbóglà	toad, frog
nâ-kpìrvìlè	dust devil
nâ-rìmnú	tongue, bud
nâ-tárgì	seasonal river

The largest group of nouns with which **nâ-** is found are species names and other natural phenomena, and there are also quite a few verbal nouns (see 5.9.2.1). The high proportion of species names accords well with the positing of the historical origin of **nâ-** in **nâḿá** (linked form: **nâḿ**; cf. 5.2.2.2.3) 'animal, meat.' In Mundang a parallel prefix *nâ-* is found, but no source noun has been identified for it (Elders 2000:125, 146).

5.1.2.4.8 pá-

The prefix **pá-** is lexically determined and is attested with four nouns in the data:

pá-dálà	oribi (antelope sp.)	
pá-dâg-vâh	fish sp.	(cf. dágà 'mouth,' vâh 'arrow')
pá-tá-kpáhbrù	cuckoo	

pá-wâdf-njì-gyàh whydah (bird sp.) (cf. **wâdf-njìnú** ‘buttocks,’ **gyàh** ‘long-tailed’)

It appears to be historically derived from **páà** ‘man, father,’ and resembles the Mundang prefix *pá-* which originates in *páni* ‘father’ (Elders 2000:125, 127–31).

5.1.2.4.9 si-

The prefix **si-** is lexically determined and is attested with six nouns in the data:

dâg-sì-sí’	spots on skin	(cf. dágà ‘mouth, edge’)
ná-sí-swǎh	leech	
sí-gâ’	ring	(cf. gâ ‘fulfillment of needs’)
sí-kètí	God	(cf. kètí ‘sky, life’)
sí-nùú	the day(s) before yesterday	(cf. nùú ‘that (dem.)’)
sí-sî	waxbill (bird sp.)	

While five of the six occurrences of **si-** are H-toned, one is L-toned. The reason for the appearance of two tonal forms is unknown. The origin of **si-** is, according to a popular etymology cited by the principal informant, the noun **sî** ‘valley, river.’ A similar Mundang suffix *-sá* has been attributed to the Mundang word *sî* ‘year’ (Elders 2000:125, 141), for which the cognate in Mambay is **sîrǎ** ‘year.’

5.1.2.4.10 ta-

The prefix **ta-** is lexically determined and is attested with four nouns in the data:

pá-tá-kpáhbrù	cuckoo	
tà-tàhrgú	rock pile	
tà-dúgrì	weakness (Chad dialect)	(= tî-dúgrì ‘weakness’)
tà-vbêr	(village name)	

While three of the four occurrences of **ta-** are H-toned, one is L-toned. The reason for the appearance of two tonal forms is unknown. No convincing historical source noun has been identified for **ta-**, but in Mundang the similar prefix *tà-* (for which, similarly, no source noun has been identified) is found (Elders 2000:125, 146).

5.1.2.4.11 ti-

The prefix **ti-** is represented by a synchronically productive augmentative/female form **tí-** as well as the ambivalent form **tí-/tî-**, whose tonal value and distribution is lexically determined.

The productive form **tí-** carries augmentative and/or female connotations, which suggests that **tî-** (or at least the form **tí-**) may be historically derived from **túù** ‘mother’ and/or **tîrǎ** ‘matron’ (also compare Mundang *tə-* and Tupuri *tV-*; see Elders 2000:125, 141–4

and Ruelland 1992:146). Examples of this prefix, which is discussed in further detail in 5.7.2 and 5.8.2, are as follows:

tí-byàá	large water-body	(cf. byàá ‘water’)
tí-kpèègá	large tree	(cf. kpèègá ‘tree’)
tí-dìgì	female neighbour	(cf. dìgì ‘neighbourship’)
tí-bùù sédǵà	female potter	(cf. bùú ‘build,’ sedǵà clay cooking pot’)

A productive prefix **tì-** is used as a collective marker for human nouns (see 5.6.1). Examples in which this prefix appears are:

tì-màmbày	the Mambay people	(cf. màmbày ‘(ethnic name)’)
tì-nǵ-syàá	white people	(cf. nǵ-syàá ‘fire, gun’)

There is not, however, any semantic evidence for a relation between the collective prefix **tì-** and the obligatory noun prefix of the same shape.

As is the case with **ka-** and **nǵ-**, when **ti-** is an obligatory component of specific lexical items, it has two tonal forms (**tí-/tì-**) which are lexically determined; the reason for the appearance of two forms is unknown. There does not seem to be any consistent semantic difference between nouns of each tonal form. The largest group of nouns with which **ti-** is found are species names, and there are also a number of reduplicated nouns (5.11.2). While an augmentative and/or female semantic value is not incompatible with the nouns of which it is a part, neither is it transparent.

ti- is well-represented in the lexicon: there are 65 occurrences of **tí-** and 13 occurrences of **tì-** as an obligatory component of non-compound noun roots. Examples of words exhibiting both tonal forms of the prefix **ti-** are as follows:

tí-syá’rì	millet stalk missed during harvesting
tí-fúúgúm	edible wild plant sp.
tí-kǵí-kǵì	whooping cough
tí-sì’bá	honour
tí-zǵr	rafter
tì-dúgrì	weakness
tì-góhm	tree and fruit sp.
tì-kóólè	pipe
tì-tèvbíre	flute sp.
tì-ryán-ryàn	edible gourd sp.

5.1.2.4.12 ʔì-

The prefix ʔì- is productively used to promote modifiers from a number of word classes to the status of independent noun (5.10).

example modifier		modifier promoted to independent noun status
bàhlàm thick, fat		ʔì-bàhlàm that which is thick, fat
gúrúru deep		ʔì-gúrúru that which is deep
kètí above		ʔì-kètí that which is above
nájá this, these		ʔì-nájá this (n.), these (n.)
zódôm ten		ʔì-zódôm the ten [of them]

Because of its segmental and grammatical value (especially as regards nominalization), it is tempting to posit ʔígà ‘thing’ as the historical source of ʔì-; the implications of its tonal value for this interpretation are inconclusive.

5.1.3 Suffixation

Noun suffixation in Mambay functions synchronically to a limited degree (5.1.3.1), but there is evidence that it has functioned pervasively in the history of the language (5.1.3.2).

5.1.3.1 Synchronically productive suffixation

Synchronically productive noun suffixation in Mambay is limited to inalienable possessive constructions (5.3.4).

linked form	+	inalienable assoc. pn.	→	inalienable assoc. construction
káà head:LF		-m 2SG.POSS.INAL		káám head:2SG.POSS.INAL
				your (sg.) head (inal.)

While some nouns in some plural constructions and some noun phrase types (5.5.2 and 5.14) appear to employ suffixation, they have been described in reference to morphological templates rather than suffixes. Plural alternations include:

bîŋ	forest	pl. bíŋzò
yèrí	clothing	pl. yèrzí
ḡóólì	lion	pl. ḡóolzì
bùmgó	ribcage	pl. bùmzó

Linked forms (5.2.2) of nouns in some noun phrase constructions include:

free form	linked form	
kpèègá	kpèègì ʔíí	tree / my tree
pígìlò	pígìlì ʔíí	bile / my bile

5.1.3.2 Evidence of historical suffixation

There are several indicators that, in addition to having a synchronically limited contribution, suffixation is a pervasive historical reality. In an article on the subject, Anonby (2008) outlines three synchronic arguments for the existence of vestigial suffixes in Mambay. First, there is a segmental imbalance in the noun lexicon. On CV-final nouns, which make up most of the simple noun lexicon, over three-quarters of endings contain one of the consonants **r l g n** and almost exactly two-thirds of endings contain the vowel **a**; most remaining vowel endings assimilate to the value of preceding root vowel (pp. 4–6). Examples of nouns which exhibit these recurrent sequences include:

túra	millet	kpèègá	tree
zìrì	fish sp.	wágà	skin
káálà	head, reason	tùnná	bush sp.
pìrlá	torch, flashlight	gèmná	entrance hut

Second, there are many irregular verb-to-noun alternations marked by the historical addition of a suffix (pp. 6–8; see also 5.9.2.1).

gà'rá	nail (n.)	sì'lá	fishing
cf. gà'	nail (v.), stay fixed	cf. sí'	fish (v.), bloat
páhnà	mud, clay	vbô'gá	stirred-up waters
cf. pàh	wet (v.)	cf. vbó'	mix, get caught up in a dispute

Third, there is a definable semantic value associated with a few of the historical noun suffixes, in particular a body part suffix **-nú**, non-count suffixes with labial consonants, and a generic or collective suffix **-(g)VrV** (pp. 8–11). An exhaustive list of non-compound nouns containing the suffix **-nú**, which is found almost exclusively with body parts, is as follows:

dígnù	liver	nà-gbíínù	(village name)
fínù	forehead	nà-rígnù	underarm
gìhgìnú	wing, fin	ná-rìmnù	tongue
gì'nù	small of back	nà-vínù	co-wife
gùùgìnú	gill	ná-nìnnù	bum
hùùnù	thigh	nìnnù	bottom
ʔínù	body, self	nínù	eye, face, life
kìhnù	waist, hip	sínnù	horn, antenna

tè'nú	side (of body)	zínù	tooth, tusk
tịnú	front, genitals		

Non-count nouns, which account for a clear majority of nouns with labial consonants in a final CV syllable, include the following:

-bV:	bùùbá	white hair	-bV:	lúbò	sesame
	gííbò	alcoholic drink		pábà	milk
	hì'bá	hunger		tábà	flour
	màhbá	adultery		túbò	blood
-mV:	dìmá	beauty	-vV:	kpádvà	leprosy
	nàmá	animal, meat		kúdvò	smoke
	sámá	pregnancy		núvà	fat, oil
	tàrmá	fog, haze		màrvà	regret

Nouns containing the generic or collective suffix **-(g)VrV** often alternate with other verbs and nouns in the lexicon. A complete list of these nouns, which are either generic stative nouns or collective terms (cf. 5.6.2), is as follows:

?àzgàrà	reciprocal social unit (see Glossary)	cf. ?ázi ' member of ?àzgàrà
fàzàrà	reciprocal social unit (see Glossary)	cf. fàzì member of fàzàrà
fàhzàrà	reciprocal social unit (see Glossary)	cf. fàhzi member of fàhzàrà
màngàrà	age-group	cf. màn age-mate
nàngàrà	maternal uncles	cf. nànà ' maternal uncle
bààgàrà	hardness	cf. bàà be hard, bààgá hardness
bòògàrà	bonus	cf. bóó hit
fimgòrò	heaviness	cf. fim be heavy, fimgó weight
fùhgàrà	spreading of a smell	cf. fùh smell (v.); fùhgá smell (n.), stink
ná-vyàngàrà	jealousy, ambition, polygamy	
rà'gàrà	rot (n.)	cf. rà' rot (v.), rà'gá rot (n.), stink
rè'gàrà	fruit, fruit production	cf. rè'rà bear, produce fruit, clump
sòngòrò	aging	cf. sòngí age (v.), sòngó old age
sòògàrà	heat	cf. sòò get hot, boil; sòògá hotness, smithy
syàhgàrà	coolness, dampness	cf. syàh get cold, syàhgá chill

A comparison of numerous noun roots with reflexes in other Kebi-Benue languages confirms the historical contribution of suffixation in Mambay (pp. 11–20). Most of the suffixes in Mambay and closely related languages cannot be traced to a historical system of noun classification; rather, they are the product of an unevenly applied reconfiguration of noun structure in the languages of the language family (pp. 20–1).

Because the historical noun-suffix boundary is in many cases difficult to determine, and because historically-suffixed nouns function synchronically as a morphologically simple phonological word with respect to voicing (cf. 2.1.3.2), nasality (3.4) and tone (4.1.2.2), such nouns are treated as roots in the present study.

5.1.4 Reduplication

Reduplication is not a synchronically productive means of deriving nouns. Rather, it appears to serve an ideophonic function. Some instances of reduplication are appropriately described as a type of compounding (5.4.2.6). Examples of reduplicated nouns are:

dèlèŋ-déléŋ	bell	tí-kíí-kíí	whooping cough
lèhrù-lèhrù	large-eared person	tì-kpád-kpád	malaria
wàh-wàh	hubbub	tì-gbùl-gbùl	large air bubble in water

Reduplication is discussed in greater detail in the section on ideophonic nouns (5.11.2).

5.2 Free and linked forms

In Mambay, nouns are found as one of two basic forms: free and linked. In the following sections, the distribution of free and linked nouns is contrasted (5.2.1), and intricacies in the structures exhibited by linked forms are catalogued (5.2.2).

5.2.1 Distribution

When a noun is found without any of its own syntactically dependent elements in a noun phrase, its free (unmarked) form is used. The free form exhibits the noun's full phonological identity. This is evident with the example nouns **húgò** 'bone' and **zòògá** 'bird':

húgò		bone	
dâg	húgò	skeleton (lit. mouth of bone)	
mouth:LF	bone		
nìì	dâg	húgò	bottom of skeleton
bottom:LF	mouth:LF	bone	
zòògá		bird	
dâg	zòògá	beak (lit. mouth of bird)	
mouth:LF	bird		
nìì	dâg	zòògá	bottom of beak
bottom:LF	mouth:LF	bird	

When a noun is found with a syntactically dependent element other than a numeral, its linked form (LF) is used. A noun's linked form is the result of morphological templates which, in many cases, diminish or otherwise alter the phonological identity of the free form (5.2.2). Linked forms of the nouns **hùgò** 'bone' and **zòògá** 'bird' are used in the following example constructions:

hùg	kágà	bone of chicken	
bone:LF	chicken		
dâg	hùg	kágà	skeleton (lit. mouth of bone) of chicken
mouth:LF	bone:LF	chicken	
hùg	ʔíí	my bone	
bone:LF	1SG.POSS		
hùg	ḃìtìḃ	dirty bone	
bone:LF	dirty		
zòògì	kpèègá	tree bird (lit. bird of tree)	
bird:LF	tree		
dâg	zòògì	kpèègá	tree bird's beak (lit. mouth of bird of tree)
mouth:LF	bird:LF	tree	
zòògì	ʔíí	my bird	
bone:LF	1SG.POSS		
zòògì	ḃéḃéḃ	intelligent bird	
bird:LF	intelligent		

Nouns in typical count constructions (5.14.3) exhibit a free rather than a linked form. This provides evidence that the use of linked forms is sensitive to grammatical relation as well as a noun's position within a phrase.

wáà	ḃàtì	two noses / two chiefs
nose/chief	two	
cf. hùù	ḃàtì	the two noses / the two chiefs (restricted usage; see 5.14.3, 9.1.1)
nose/chief:LF	two	

Nouns in apposition, including nouns followed by a dependent element promoted to the status of independent noun by the prefix **ʔi-** (5.10), also exhibit a free rather than a linked form. This underlines the fact that each of the components in such constructions constitutes a separate noun phrase.

nouns in apposition:

wáà	káďá	the chief Kada / Kada, the chief
nose/chief	Kada	
cf. hùù	káďá	Kada's nose / Kada's chief
nose/chief:LF	Kada	

noun + dependent element prefixed with **ʔi-**:

và'zá	ʔi-báďá	the <i>tamarind</i> leaf
leaf	HEAD-tamarind	
cf. và'zì	báďá	tamarind leaf
leaf:LF	tamarind	

Comparable free vs. linked oppositions are found in a number of other Kebi-Benue languages (Elders 2006). In Mundang, for example, linked forms are attested for nouns and some nominals (noun-like words including verbal nouns, adjectives, numerals and possessive pronouns; see Elders 2000:102). However, the distribution of linked forms in Mundang is more tightly based on occurrence in non phrase-final position.

Several of the basic numerals in Mambay exhibit linked forms in non phrase-final position (9.1.2.1.1). This pattern is, like that of Mundang, defined by syntactic position rather than grammatical relations.

5.2.2 Linked form structure

Nouns' linked forms are based on their unmarked free forms. This is true as concerns tone melody, where correspondences between free and linked forms are regular (5.2.2.1). Segmental alternations are more complex. For most nouns with canonical shapes (5.2.2.2), significant segmental alternations accompany the appearance of linked forms; these are most fittingly described not in terms of affixation, but rather morphological templates. Non-canonical nouns, in contrast, do not typically exhibit segmental alternation (5.2.2.3). Linked forms of morphologically complex nouns are discussed in 5.2.2.4.

The following subsections show that in cases where there is alternation, the linked form contains a reduced subset of the free form's phonological information. For example, linked forms of nouns whose free forms have L, LH and LHL tone melodies are all realized with a L melody (5.2.2.1).

		free form	linked form
L:	regret	màrvà	màrvì
LH:	bird	zòògá	zòògì
LHL:	mouse sp.	zùúrà	zùùrì

In addition, the linked form of certain CV shapes is associated with the loss of a free form's final vowel (5.2.2.2.3).

	free form	linked form
bone	hùgò	hûg
clothing	yèrí	yèr
tamarind	bádà	bâd

Further examples reveal that the linked form does not retain contrast for some segmental sequences in the free form (5.2.2.2.2):

	free form	linked form
large hole-digger	tí-tyàá	tí-tèè
bush sp.	tí-tèé	tí-tèè
roan antelope	bwáà	bóò
boasting	póò	póò

The morphological templates which produce linked forms may also add phonological information, but it is predictable. For example, in linked forms of nouns with certain CV shapes, the noun's final vowel is replaced with a uniform vowel **i** (5.2.2.2.4, 5.2.2.2.5).

	free form	linked form
drum	vbíílò	vbííh
lion	bóóh	bóóh
white hair	bùùbá	bùùbí

Linked forms of nouns which are found in the context of inalienable possessive constructions are highly irregular. These forms are addressed in the discussion on inalienable possession (5.3.4.2, 6.1.4.2).

Linked forms are always produced with a subsequent noun phrase element (5.2.1). Because of this, most of the examples below are given in this context. While there are many possible items with which linked forms may be found, the first singular possessive pronoun **ʔíí** 'my (al.)' has been used throughout for the sake of simplicity and uniformity.

5.2.2.1 Tone melody

Tonally, the melody of the linked form is often the same as that of the free form, although it may associate differently depending on the availability of tone-bearing units (4.1.2.2). This is the case for linked forms corresponding to nouns whose free forms are associated with H, L and HL tone melodies. (As noted in the previous paragraph, the pronoun **ʔíí** 'my (al.)' has been used throughout to provide a natural context for example linked forms).

	free form	linked form	
H:	só'lé kókól	só'lí ?íí kókól ?íí	greatness / my greatness small drum / my small drum
L:	màrvà dìgì	màrvì ?íí dìgì ?íí	regret / my regret neighbourship / my neighbourship
HL:	húgò zyáà	hûg ?íí zêe ?íí	bone / my bone net / my net

However, LH tone contours are not permitted on linked forms of nouns with LH, LHL and HLH melodies. Because of this, linked forms of nouns with LH and LHL melodies pattern as L; and the final H on linked forms of nouns with an HLH melody is not realized (4.3.1.3). (The special case of HLH on two-mora nouns is treated in 4.3.3.3).

	free form	linked form	
LH:	zòògá gùrá	zòògì ?íí gùr ?íí	bird / my bird fish trap / my fish trap
LHL:	zùúra dòṅnì	zùurì ?íí dòṅnì ?íí	mouse sp. / my mouse sp. wealth / my wealth
HLH:	ḡóòzá kíkòvì	ḡóòzì ?íí kíkòvì ?íí	clod / my clod coward / my coward

The linked form of the single HLHL noun in the data retains the full tone melody of its free form.

	free form	linked form	
HLHL:	wátùtájà	wátùtájà ?íí	salt, sugar / my salt, sugar

Four other instances of idiosyncratic correspondences between the tone melody of free and linked forms are listed in 5.2.2.2.6 and 5.2.2.4.1. Further detail on tonal phenomena in noun phrases is found in 4.3.1.

5.2.2.2 Canonical nouns

Linked forms of nouns with some of the canonical noun shapes (5.1.1.1) undergo segmental alternations as a result of morphological templates applied to their corresponding free forms. While CVV and C(C)VC nouns are exempt from segmental alternation, other canonical nouns are usually modified as follows:

free form of canonical noun	corresponding linked form
CCVV	CVV
C(C)V.CV	C(C)VC
C(C)VV.CV	C(C)VV.Ci
C(C)VC.CV	C(C)VC.Ci

Examples of typical linked forms of each of the canonical CV shapes are given in the following sections (5.2.2.2.1–5.2.2.2.5), and irregular linked forms are also catalogued (5.2.2.2.6).

The presence of prefixes (5.1.2) on otherwise canonical nouns does not affect their eligibility for morphophonological alternation.

free form	linked form	
nà-kwàá	nà-kùù ?íí	necklace / my necklace
cf. kwàá	kùù ?íí	neck, voice / my neck, voice

5.2.2.2.1 CVV and C(C)VC

Linked forms of nouns with CVV and C(C)VC shapes are usually the same as corresponding free forms:

free form	linked form	
báà	báà ?íí	cane rat / my cane rat
fùú	fùú ?íí	trench / my trench
kǎh	kǎh ?íí	placenta / my placenta
sî	sî ?íí	valley / my valley
tí-tèé	tí-tèè ?íí	bush sp. / my bush sp.
bîŋ	bîŋ ?íí	forest / my forest
gôm	gôm ?íí	vine sp. / my vine sp.
ká-ràm	ká-ràm ?íí	reedbuck / my reedbuck
kyô'w	kyô'w ?íí	warthog, pig / my warthog, pig
tì-tùm	tì-tùm ?íí	ancestor / my ancestor

In the linked forms of nouns comprised of **yVV** or **wVV** syllables containing low vowels, the initial semivowel alternates with **h**. Also, when the low vowel is non-nasalized, it coalesces with the high semivowel, resulting in a mid vowel:

wáà	hóò ?íí	fig, fig tree / my fig, fig tree
wàá	hòò ?íí	hump / my hump
wâh	hôh ?íí	cup / my cup

However, when the low vowel of the free form is nasalized, it is realized in the linked form as a high rather than a mid nasalized vowel. These forms reflect the language-wide restriction on nasalized mid vowels (3.1.1).

ỵâh	ḥh ʔíí	stalk / my stalk
ẉâ	ḥúú ʔíí	nose, chief / my nose (al.), chief

Although there is no corresponding consonantal alternation, a similar vowel alternation is attested in the linked form of **ỵâh** ‘name; yellow weaver (bird sp.)’ (there are no other nouns with an equivalent preglottalized semivowel–nasalized vowel CVV structure).

ỵâh	ỵh ʔíí	name/weaver (bird sp.) / my name/weaver
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5.2.2.2.2 CCVV

The linked form of some CCVV nouns is signalled by the application of a CVV template. When the template applies to noun roots comprised of CyVV or CwVV syllables containing low vowels, the onset’s semivowel coalesces with its vowel. This results—similarly to what happens to yVV or wVV nouns (5.2.2.2.1)—in linked forms with front and back mid vowels respectively:

byàá	bèè ʔíí	water / my water
kwàà	kòò ʔíí	grass / my grass
nà-swàá	nà-sòò ʔíí	peanut / my peanut
syàà	sèè ʔíí	tree sp. / my tree sp.
syâh	sêh ʔíí	hand / my hand (alienable)

(Exceptionally, the linked form of **kwàá** ‘neck, voice’ is **kùù**.)

When the low vowel is nasalized, its realization in the linked form is high rather than mid. These forms reflect the language-wide restriction on nasalized mid vowels (3.1.1).

kẉâ	ḳúú ʔíí	fly / my fly
kỵâh	ḳìh ʔíí	fish / my fish
ṇà-sỵâ’	ṇà-sì’ ʔíí	cricket sp. / my cricket sp.
nẉâ’	ṇû’ ʔíí	hole, den / my hole, den
rẉâ	ṛúú ʔíí	fool / my fool

There are four CCVV nouns in the data containing a non-low vowel. The linked forms of these nouns are not modified.

dyóò	dyóò ʔíí	grass sp.
kyóò	kyóò ʔíí	underdeveloped child / my underdeveloped child
myû’	myû’ ʔíí	cat / my cat
syòò	syòò ʔíí	song / my song

5.2.2.2.3 C(C)V.CV

The linked form of C(C)V.CV nouns is signalled by a loss of the final vowel. In other words, a C(C)VC template is applied.

bádà	bâd ʔíí	tamarind / my tamarind
hùgò	hûg ʔíí	bone / my bone
kwéré	kwêr ʔíí	fence / my fence
pìzá	pìz ʔíí	horse / my horse
yèrí	yèr ʔíí	clothing / my clothing

One CVC noun also exhibits a morphophonological alternation which is more commonly found with CVV nouns (see 5.2.2.2.1).

wágà	hôg ʔíí	skin / my skin (al.) (also attested: wâg ʔíí)
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5.2.2.2.4 C(C)VV.CV

The linked form of C(C)VV.CV nouns is signalled by the replacement of the final vowel with **i**.

bùùbá	bùùbì ʔíí	white hair / my white hair
ḡóólì	ḡóólì ʔíí	lion / my lion
kwáàvbá	kwáàvbì ʔíí	bush sp. / my bush sp.
kpèègá	kpèègì ʔíí	tree / my tree
vbíílò	vbíílì ʔíí	drum / my drum

If the final vowel of the free form of the noun is nasalized, this nasality is retained on the **i** of the template.

hùùrì	hùùrì ʔíí	hyena / my hyena
sààrì	sààrì ʔíí	tortoise / my tortoise
tí-níínà	tí-níínì ʔíí	molar / my molar

5.2.2.2.5 C(C)VC.CV

As is the case for C(C)VV.CV nouns (5.2.2.2.4), the linked form of C(C)VC.CV nouns is signalled by the replacement of the final vowel with **i**.

fírlá	fírlì ʔíí	torch / my torch
lwâgvbá	lwâgvbì ʔíí	tenderness, youngness / my tenderness, youngness
ná-kógrà	ná-kógrì ʔíí	worm / my worm
píglò	píglì ʔíí	bile / my bile
tì-dúgrì	tì-dúgrì ʔíí	weakness / my weakness

If the final vowel of the free form of the noun is nasalized, this nasality is retained on the *i* of the template.

gèmná	gèmnì ?íí	entrance hut / my entrance hut
nà-pênrá	nà-pênrì ?íí	wild fruit sp. / my wild fruit sp.
sáhnì	sáhnì ?íí	mortar / my mortar

5.2.2.2.6 Irregular linked forms

Some canonical nouns exhibit irregular linked forms. A small number, including body parts as well as a few other common nouns, have more than one form (5.2.2.2.6.1). Linked forms with other irregularities are given in 5.2.2.2.6.2.

5.2.2.2.6.1 Nouns with more than one linked form

There are a number of body parts and other commonly used nouns with optional monosyllabic linked forms. There is significant but incomplete overlap between words with these short linked forms and words which may be used in inalienable possessive constructions (compare the list in 5.3.4.1).

Invariably, monosyllabic linked forms are more commonly used than the morphologically regular longer forms (i.e., those which are subject to the morphological template given in 5.2.2.2). When questioned concerning differences in the usage of respective long and short forms, Mambay speakers cite factors such as formal vs. informal register, whole vs. part designation, neutral vs. emphatic linking, and distant/intangible vs. proximal/tangible presence. However, none of these variables have been consistently borne out by elicited examples, and instances of the longer forms are altogether absent in the spontaneous text that has been gathered. It is possible that the longer forms are archaic but legal alternatives for the short forms. An exhaustive list of nouns with optional monosyllabic linked forms is given here, and has been broken down based on morphological patterns.

First, there are a number of CVV.CV words with a regular (long) CVV.Ci linked form and a short CVV form.

free form	linked form (regular/long)	linked form (short)	
ɓà'rá	ɓà'rì ?íí	ɓà' ?íí	seed / my seed
fààlá	fààlì ?íí	fàà ?íí	back, skin, place / my back, skin, place (al.)
káálà	káálì ?íí	káà ?íí	head / my head (al.)
gì'rá	gì'rì ?íí	gì' ?íí	gourd / my gourd
mùhná	mùhnì ?íí	mùh ?íí	vulva, centre / my vulva, centre (al.)
ná-nìnnú	ná-nìnnì ?íí	ná-nì ?íí	bum / my bum (al.)
ná-rìmnú	ná-rìmnì ?íí	ná-rìm ?íí	tongue, bud / my tongue, bud (al.)

nì̀nù	nì̀nì ʔíí	nì ʔíí	bottom, meaning / my bottom, meaning (al.)
ná'rà	ná'rì ʔíí	nâ' ʔíí	sauce / my sauce
rò'rá	rò'rì ʔíí	rò' ʔíí	word, issue / my word, issue
sààrà	sààrì ʔíí	sàà ʔíí	root, sinew / my root, sinew
sì̀rà	sì̀rì ʔíí	sì ʔíí	year / my year
vbààlá	vbààlì ʔíí	vbàà ʔíí	testicle / my testicle (al.)
wàhlá	wàhlì ʔíí	wàh ʔíí	nape (of neck) / my nape (al.)
zà'rá	zà'rì ʔíí	zà' ʔíí	dance / my dance

It is interesting to note that the consonant in the last syllable of each of these nouns (which is deleted in the short linked form) is one of the common alveolar segments **r l** or **n**. There is no consistent phonological distinction that sets these nouns apart from most other nouns (without a short linked form) that have **r l** or **n** in the last syllable (e.g., 5.2.2.2.4, 5.2.2.2.5). However, the lack of short linked forms which correspond to free forms with **g** in the last syllable is conspicuous, since in the lexicon as a whole **g** is also very common in this position (5.1.3.2).

There is a single CVV.CV word with a regular (long) CVV.Ci linked form and a short CV prefix form which is tonally simplified (see 5.1.2.4.3).

fí̀lò	fí̀lì ʔíí	fí-ʔíí	house / my house
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The same pattern has been observed for the word **fààlá** 'back' among some speakers of dialects north of the river (cf. **fààlá** / **fàà** earlier in this section):

fààlá	fààlì ʔíí	fà-ʔíí	back, skin, place / my back, skin, place (al.)
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One CCVV and one CV.CV noun also exhibit this pattern.

kyǎ'	kè' ʔíí	kì-ʔíí	place, time, state / my place, time, state (cf. 5.1.2.4.5)
'mǎrà	'mǎr ʔíí	'mǎ-ʔíí	friend / my friend (see also 5.2.2.2.6.2 re. the tonally irregular long form)

Two CVV.CV nouns exhibit other atypical short forms alongside the long linked form.

páhnà	páhnì ʔíí	páhn ʔíí	mud, clay / my mud, clay
sí̀nà	sí̀nì ʔíí	sí̀n ʔíí	play / my play

Finally, three CVV nouns (all of which, incidentally, contain pharyngealized vowels) exhibit optional long forms which are not warranted by the synchronic structure of their free form.

gǎh	gǎhnì ?ǐǐ	gǎh ?ǐǐ	beard / my beard (al.)
'mǎh	'mǎhnì ?ǐǐ	'mǎh ?ǐǐ	foot / my foot (al.)
vbyâh	vbéhli ?ǐǐ	vbêh ?ǐǐ	cheek / my cheek (al.)

5.2.2.2.6.2 Other irregularities

Five CVV.CV nouns (cf. 5.2.2.2.5) which exhibit irregular linked forms that lose the final vowel but retain the last syllable's consonant are as follows:

free form	linked form	
gì'nú	gì'n ?ǐǐ	small of back / small of my back
kàhrá	kàhr ?ǐǐ	wax, glue, birdlime / my wax, glue, birdlime
hùùnú	hùùn ?ǐǐ	thigh / my thigh
sáhmà	sáhm ?ǐǐ	feather / my feather
sǐínù	sǐín ?ǐǐ	horn, antenna / my horn, antenna (note that the linked form is neutralized with the “intermediate” form of sǐínà ‘play’ in the previous section)

There are also two CVC.CV (cf. 5.2.2.2.5) nouns with irregular CV.CVC linked forms (these two nouns have irregular plurals which are formed in a similar way; see 5.5.2.1.5):

dígínù	dígín ?ǐǐ	liver / my liver
(nì) nà-rígnù	(nì) nà-rígín ?ǐǐ	armpit / my armpit

Finally, in addition to all of these nouns with segmentally irregular linked forms, three CV.CV noun roots (cf. 5.2.2.2.3) exhibit an irregular tonal alternation. Rather than retaining the complexity of their basic tone melody in their linked form, as is the case for other HL nouns (5.2.2.1), their HL tone melody is simplified to H.

mǐrà	mǐr ?ǐǐ	excrement / my excrement
'mǎrà	'mǎr ?ǐǐ	friend / my friend (also: 'mǎ ?ǐǐ ; see 5.2.2.2.6.1)
vínà	vín ?ǐǐ	woman / my woman

5.2.2.3 Non-canonical nouns

Linked forms of non-canonical nouns are segmentally identical to their free counterparts. This is true of nouns with non-canonical CV shapes (cf. 5.1.1.1):

rùùg	rùùg ?ǐǐ	cylindrical shape / my cylindrical shape
kókól	kókól ?ǐǐ	small drum / my small drum
tí-dîrím	tí-dîrím ?ǐǐ	bare gums, molar / my bare gums, molar
séréré	séréré ?ǐǐ	thinness / my thinness
wátùtáà	wátùtáà ?ǐǐ	salt, sugar / my salt, sugar

wààgùnà	wààgùnà ?íí	large basket / my large basket (also attested: wààgùn ?íí ; cf. 5.2.2.4.3)
bààbùrùm	bààbùrùm ?íí	main room / my main room
tí-tòòntî	tí-tòòntî ?íí	lark (bird sp.) / my lark

There are also a number of examples of nouns of canonical CV shape which have segmentally invariable linked forms. These nouns are non-canonical in other ways:

non-canonical nasality pattern (cf. 3.4.2):

màlà	màlà ?íí	art, craft / my art, craft
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uncommon noun endings **e** and **u** (cf. 5.1.3.2):

lèègè	lèègè ?íí	nightjar (bird sp.) / my nightjar
núúrú	núúrú ?íí	breast / my breast
tí-kà-ràhgù	tí-kà-ràhgù ?íí	large heron sp. / my large heron sp.

uncommon root-internal obstruent distribution (cf. 2.1.2.2):

kètí	kètí ?íí	sky, life / my sky, life (also attested: kèt ?íí)
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borrowed noun (cf. 1.3.1):

ḍéré	ḍéré ?íí	yam sp. / my yam sp.
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a combination of the above factors:

?àddá	?àddà ?íí	older female relative / my older female relative (cf. Fulf. <i>adda</i>)
bàkà	bàkà ?íí	older male relative / my older male relative (cf. Fulf. <i>baka</i>)
lúúmù	lúúmù ?íí	market, week / my market, week (cf. Fulf. <i>luumo</i> ‘market’)
ná-túttè	ná-túttè ?íí	soap / my soap (also attested: ná-túttì ?íí)

Conversely, two nouns have been attested which, although they have a non-canonical CV shape, exhibit alternating linked forms:

ná-bìbù'nà	ná-bìbù'n ?íí	small bee sp. / my small bee sp.
ná-táállá	ná-táállì ?íí	ant sp. / my ant sp.

5.2.2.4 Morphologically complex nouns

Linked forms of three categories of morphologically complex nouns are examined here: plurals (5.2.2.4.1), nouns with **-(g)VrV** suffixes (5.2.2.4.2), and compound nouns (5.2.2.4.3).

5.2.2.4.1 Plurals

Plurals, which typically conform to a CVC.zV template (5.5.2.1), exhibit linked forms the same as those of other CVC.CV nouns: namely, the final vowel alternates with **i**. Examples of linked forms of typical plurals are as follows:

free form of plural noun	linked form	
lálzà	lálzì ʔíí	gourds / my gourds
tyárzà	tyárzì ʔíí	fish sp. (pl.) / my fish sp. (pl.)
fùlzó	fùlzì ʔíí	trenches / my trenches
kwéرزè	kwéرزì ʔíí	fences / my fences
yèrzí	yèrzì ʔíí	pieces of clothing / my pieces of clothing

Linked forms of irregular plurals (5.5.2.2) also conform to templates for morphologically simple nouns of the same CV shape.

ḃélà	ḃél ʔíí	children / my children
vyá'rà	vyá'ri ʔíí	mice / my mice
zàrà ~ zàrzá	zàr ʔíí ~ zàrzì ʔíí	oxen / my oxen

Exceptionally, and like its singular counterpart **vínà** ‘woman’ (5.2.2.2.6.2), the linked form of **gérêm** ‘women’ is marked by a simplification of the corresponding noun’s tone melody from HL to H.

gérêm	gérém ʔíí	women / my women
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5.2.2.4.2 Nouns with -(g)VrV suffixes

Linked forms of nouns with -(g)VrV suffixes (5.1.3.2) are formed by the alternation of the first suffix vowel with **i** and the dropping of the final suffix vowel.

free form of suffixed noun	linked form	
ʔàz-gàrà	ʔàzgìr ʔíí	in-laws / my in-laws
fìm-górò	fìmgìr ʔíí	weight / my weight
nà-réṅ-gérè	nà-réṅ-gîr ʔíí	hanging roots / my hanging roots
sòṅ-górò	sòṅgìr ʔíí	aging / my aging
syàh-gàrà	syàhgìr ʔíí	coolness, dampness / my coolness, dampness

5.2.2.4.3 Compound nouns

Linked form templates are applied to the final root of a compound noun (5.4), which is transformed in the same manner as if it were not part of a compound:

dâg	gèmnì	?íí	my entryway
mouth:LF	entrance.hut:LF	1SG.POSS	
cf. dâg	gèmná		entryway
mouth:LF	entrance.hut		
fàà	pààrì	?íí	my abandoned field
back:LF	field:LF	1SG.POSS	
cf. fàà	pààrá		abandoned field
back:LF	field		

This extends to compound nouns which are partially or completely opaque (cf. 5.4.3):

ná-rím-bèè	?íí	my cormorant, darter (bird sp.)
PFX-dip?-water:LF	1SG.POSS	(also attested: ná-rím-byàà ?íí)
cf. ná-rím-byàá		cormorant, darter (bird sp.)
PFX-dip?-water		
tàm-bú'li	?íí	my courtyard
(opaque compound; see 5.4.3):LF	1SG.POSS	
cf. tàm-bú'là		courtyard
(opaque compound; see 5.4.3)		

Similar to their singular counterparts just above, the linked forms of compound plurals (5.5.2.4) are based on the CV shape of the pluralized final root:

free form of	linked	
compound plural	form	
dâg gènzá	dâg gènzì ?íí	entryways / my entryways
tàm-bú'lzá	tàm-bú'lzì ?íí	courtyards / my courtyards

5.3 Possessive constructions

Possessive constructions are a central means of noun expansion in Mambay. They are a type of noun phrase (5.14): in terms of internal syntax, possessive constructions are minimally composed of a possessed head noun followed by a dependent possessor noun. The semantic relation signalled by the dependent noun in reference to the head noun is often possessive, but many other types of relations are attested. An overview of semantic and structural characteristics of possessive constructions is provided in 5.3.1 and 5.3.2. Peculiarities of tone in possessive constructions are covered in 5.2.2.1 and in relevant subsections below.

Possessive constructions are further described in reference to three axes: spontaneous vs. fixed, obligatory vs. optional, and alienable vs. inalienable possession (5.3.3). Alienable and inalienable possessive constructions, which are both defined by complex morphology, are considered further in 5.3.3.3.1 and 5.3.4.

Compound nouns, which typically exhibit a structure identical to that of alienable possessive constructions, are treated separately in 5.4.

5.3.1 Semantic relations

In Mambay as well as other languages, the semantic relations signalled by possessive (i.e., “genitival” or “associative”) constructions are much more varied than possession. In possessive constructions, possession is prototypical but semantic relations are varied and flexible; those commonly signalled by the dependent noun in reference to the head noun include the following (these examples are alienable possessive constructions; see 5.3.3.3):

possession:	hûg vwáà bone:LF dog	bone of dog
social relation:	túù bígà mother:LF child	mother of child
part-whole:	sûg vwáà ear:LF dog	ear of dog
description:	pâb bôngá milk:LF acidity	sour milk
composition:	nâ' nâ-?áà sauce:LF PFX-bean.leaf	sauce of bean leaf
location:	nî nŵâ' bottom:LF hole	bottom of hole
purpose:	bèè dôg-nâ water:LF drink:VN-OBJ	drinking water
count:	sîi bati year:LF two	the two years (cf. 5.14.3)

5.3.2 Structural characteristics

Possessive constructions are minimally composed of a possessed head noun followed by a dependent possessor noun. As is typically the case for head nouns followed by a dependent element, the head noun exhibits the linked noun form; the dependent noun exhibits the unmarked free form (5.2.1, 5.14). This is evident in the following N + N

possessive constructions composed of the nouns ‘hole’ (free form: **nwâ’**; linked form: **nû’**) and ‘mud wasp’ (free form: **hámzà**; linked form: **hámzi**) (alternations between free forms and linked forms of nouns are addressed in 5.2.2 above):

nû’ hámzà hole of mud wasp
hole:LF mud.wasp

hámzi nwâ’ mud wasp of hole
mud.wasp:LF hole

When the dependent possessor noun is the possessed head of another element, it exhibits the linked form of the noun. This is evident in the following N + [N + N] constructions:

nû’ [hámzi só’lé] hole of large mud wasp
hole:LF mud.wasp:LF greatness

hámzi [nû’ só’lé] mud wasp of large hole
mud.wasp:LF hole:LF greatness

There is no formal bracketing of internal phrase structure. Consequently, the above examples could be construed as [N + N] + N constructions:

[nû’ hámzi] só’lé large hole of mud wasp
hole:LF mud.wasp:LF greatness

[hámzi nû’] só’lé large mud wasp of hole
mud.wasp:LF hole:LF greatness

Both internal structures are commonly attested. In cases of formal ambivalence, only the referential context may clarify which meaning has been invoked.

Like other nouns, possessive pronouns are commonly found in the dependent position of possessive constructions. An additional formal distinction, that of alienable vs. inalienable possession, is attested with possessive constructions composed of certain nouns followed by possessive pronouns (it is not, however, available to constructions with two typical/non-pronoun nouns; cf. 5.3.3.3):

páà ?íí my colleague
man:LF 1SG.POSS

páy my father, my intimate friend
man:1SG.POSS.INAL

Alienable vs. inalienable possession is described in detail in 5.3.3.3 below.

5.3.3 Axes of description

Possessive constructions may be described in reference to three axes. The first axis, spontaneous vs. fixed possession, deals with the variable status of possessive constructions in the lexicon (5.3.3.1). The second axis, obligatory vs. optional possession, is concerned with whether or not a noun can occur syntactically without a possessor (5.3.3.2). The third axis, alienable vs. inalienable possession, treats a formal distinction available to constructions involving (certain) nouns followed by possessive pronouns (5.3.3.2).

5.3.3.1 Spontaneous vs. fixed possession

Possessive constructions may be either spontaneous or fixed. In spontaneous constructions, any noun may be possessed by any other semantically appropriate noun.

nû' hámzà hole of mud wasp hole:LF mud.wasp	fâh nàmá path of animal path:LF animal
hámzì nwâ' mud wasp of hole mud.wasp:LF hole	nàm fâh animal of path animal:LF path

In contrast, fixed possessive constructions have membership in the lexicon and are essentially a kind of compound noun (Dimmendaal 2000:167ff., 179; Payne 1997:94) (see 5.4 for a more complete treatment of compound nouns).

pâb bôngá sour milk milk:LF acidity	sààrì túbò blood vessel sinew:LF blood
nàm kúù wild animal animal:LF bushland	bèè ?ínù colour water:LF body

In many cases it is difficult to assign a possessive construction to either end of the spontaneous vs. fixed continuum; the difference is gradient rather than quantal, and must be based on frequency of usage rather than form.

5.3.3.2 Optional vs. obligatory possession

The second axis which defines possessive constructions is a distinction between optional and obligatory possession. This has been described elsewhere as a distinction between free and relational nouns (Welmers 1973:212) and non-inherent vs. inherent relation (Payne 1997:105–6). In contrast to alienability (5.3.3.3), this axis is syntactically rather than morphologically defined. Nouns which are obligatorily possessed are those which are only found as head nouns in a possessive construction; such nouns are always accompanied by a dependent possessor noun. In contrast, optionally possessed nouns, which represent the great majority of nouns in the lexicon, may occur either with or without a dependent possessor.

A full listing of obligatorily possessed nouns in the data is given here. Most of these nouns are confined to alienable possession (5.3.3.3.1):

búríbùrì ...	piece of ...
búùrúm ...	block of ...
dúùrú ...	adam's apple of ... (in: dúùrú kwàá ; cf. kwàá 'neck')
gbèh ...	adam's apple of ... (in: gbèh kwàá)
kâd ...	reputation of ...
kúùrín ...	pile of ...
kpôhlgóm ...	adam's apple of ... (in: kpôhlgóm kwàá)
màñ ...	age-mate of ...
má-nâ' ...	parent-in-law of ...
páà ...	man, father, person of ...
syâg ...	own, self of ... (as in: 'on its own, by itself')
tí-gìgíd' ...	base of ...
tì-tôŋ ...	remains of ...
zàbzàb ...	piece of ...
zàhwràw ...	spiky pile of ...
zwáráŋ ...	entirety of ...

Ordinal numerals (9.1.3) are also included:

ḅààrí ...	second of ...
bìsàhrí ...	third of ...
(etc.)	

Also, six obligatorily possessed nouns may express either alienable or inalienable possession (5.3.3.3).

?ázi' ...	member of ?àzgàrà (see Glossary) of ...
fàzì ...	member of fàzàrà (see Glossary) of ...
fàhzi' ...	member of fàhzàrà (see Glossary) of ...
páà ...	man, father of ...
sùùní ...	younger in-law of ...
túù ...	mother of ...

5.3.3.3 Alienable vs. inalienable possession

A third and final axis concerns a morphologically formalized distinction of alienable vs. inalienable possession. As stated in the previous section, this axis is morphologically defined; this contrasts with optional vs. obligatory possession, which is syntactically defined (5.3.3.2). And rather than signalling intrinsic properties of specific nouns (as is the case with optional vs. obligatory possession), this axis deals with the relationship between nouns: alienable vs. inalienable possession falls under what has been called indirect vs. direct determination (Boyeldieu 1987:20). It is not uncommon for both optional/obligatory and alienable/inalienable distinctions to interact in a single language (Payne 1997:106), as is the case in Mambay.

Although many other languages extend an alienable/inalienable distinction to possessive constructions in general, in Mambay it is only formalized between possessed nouns and possessive pronouns. Examples of alienable possessive constructions involving a possessed noun and a possessive pronoun are as follows:

páà ?íí man:LF 1SG.POSS	my colleague
ḃáṛ ?íí friend:LF 1SG.POSS	my friend (i.e., a friend who is not close)
kùù ?íí neck:LF 1SG.POSS	my neck (i.e., the neck of an animal which is mine)

Corresponding inalienable possessive constructions, which exhibit morphological fusion of the possessed noun and possessive pronoun, are as follows:

páy man:1SG.POSS.INAL	my father, my intimate friend
ḃáṛí friend:1SG.POSS.INAL	my intimate friend
kwìí neck:1SG.POSS.INAL	my neck (i.e., the neck which is part of my own body)

Alienable and inalienable noun-pronoun constructions are explored in the following subsections (5.3.3.3.1 and 5.3.4).

5.3.3.3.1 Alienable possessive constructions

Alienable possessive constructions are the default means of relating possessed nouns with possessor nouns, including pronouns. Their structure, which has been described above (5.3.2), involves the linked form of the head noun followed by the free (unmarked) form of the dependent noun. This is evident in the following constructions involving the nouns ‘milk’ (free form: **páḃà**; linked form: **páḃ**) and ‘neck’ (free form: **kwàá**; linked form: **kùù**):

páḃ nàḃá milk:LF animal	milk of animal
nàḃ páḃà animal:LF milk	animal of milk (i.e., animal used to provide milk)

The pronouns used in alienable possessive constructions differ from those found in inalienable possessive constructions (5.3.4.2). Alienable possessive pronouns, which are

dágà	mouth	nà-kànsí'nù	shadow, soul, spirit
dígnù	liver	nà-kànsí'nù	kneecap, fontanelle
dwǎ'	belly	nà-njùnù	bum
fààlá	back, skin	nà-púrà	navel
fjìnù	forehead	(nù) nà-rígnù	underarm
gǎh	beard	nà-rimnú	tongue
gìhgìnú	wing, fin	njùnù	bottom
gì'nù	small of back	njìnù	eye, face, life
gùùgìnú	gill	sábà	tail
hùùnù	thigh	síjìnù	horn, antenna
?jìnù	body, self	súgò	ear
káálà	head	syâh	hand, finger
(káà) nà-wâdnjùnù	buttocks	tè'nù	side
káà nà-sí'nù	knee	tjùnù	front, genitals
kjìhnù	waist, hip	vbààlá	testicle
kwáá	neck, voice	vbyâh	cheek
kpánnà	penis	wǎà	nose
mùhnà	vulva	wáhlá	nape (of neck)
'màhnà	foot	zjìnù	tooth, tusk

About half of these nouns contain a historical derivational body part suffix **-nù** (5.1.3.2; Anonby 2008). Although many of the body part nouns in the list can also be used locatively in inalienable possessive constructions (see 5.13), the glosses in this section reflect their prototypical use as body parts.

Nouns which specify kinship or social relations and which may be used with inalienable possessive pronouns are as follows:

?ázi´	member of ?àzgàrà (see Glossary)
fàùzì	member of fàùzàrà (see Glossary)
fâhzi	member of fâhzàrà (see Glossary)
kyáá-rìnnà	paternal aunt
mǎrnà	eldest sibling
'mǎrà	friend
nǎnà´	maternal uncle
páà	man, father
páá-nà-rìnnà	paternal uncle
páà vǎà	husband
nǎábà	colleague
nà-vjìnù	co-wife
sùùnì	younger in-law
túù	mother

There are many compound nouns which contain one of these nouns as a possessor. Such compounds may also be found with inalienable possessive pronouns:

ḡḡ 'máṙà child:LF friend	ḡḡ 'máṙí child:LF friend:1SG.POSS.INAL	friend's child / my friend's child
gbèh kwàá adam's.apple:LF neck	gbèh kwìí adam's.apple:LF neck:1SG.POSS.INAL	adam's apple / my adam's apple
páà fààlá man:LF back	páà fààní man:LF back:1SG.POSS.INAL	witness / my witness
sà'li nà-púṙà rope:LF PFX-navel	sà'li nà-púṙí rope:LF PFX-navel:1SG.POSS.INAL	umbilical cord / my umbilical cord

Exceptionally for two prefixed words, possessed nouns (which are, in addition, suppletive) rather than the possessor nouns take the inalienable pronominal suffix:

dà-zwâ' father:PFX-ancestry	páy zwâ' man:1SG.POSS.INAL:LF ancestry	grandfather / my grandfather
mà-zwâ' mother:PFX-ancestry	tíí zwâ' mother:1SG.POSS.INAL:LF ancestry	grandmother / my grandmother

5.3.4.2 Structure

Inalienable possession is formalized by the fusion of the linked form of a noun (5.2) and an inalienable possessive pronoun.

fàà back:LF	+	-ró 2PL.POSS.INAL	→	fààró back:2PL.POSS.INAL	your (pl.) back, skin (inal.)
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It is not possible to pluralize a noun in the context of an inalienable possessive construction (5.5.1.2). Therefore, depending on the referential context, the gloss of the previous example could just as well be 'your (pl.) backs, skins.'

The segmental structure of inalienable linked nouns is described in 5.3.4.2.1, and inalienable possessive pronouns are presented in 5.3.4.2.2. Idiosyncratic inalienable possessive construction paradigms are listed in 5.3.4.2.3. The tone and nasality of inalienable possessive constructions are discussed separately in 5.3.4.2.4 and 5.3.4.2.5 respectively.

Complete paradigms are given for inalienable possessive constructions in Appendix 1.

5.3.4.2.1 Inalienable linked noun forms

For the most part, the segmental value of the inalienable linked noun forms corresponds to the segmental value of linked forms in alienable possessive constructions (5.2.2):

noun	free (unmarked) form	inalienable linked form	alienable linked form
beard	gǎh	gǎh-	gǎh
body	ʔínù	ʔín-	ʔín
friend	'mǎrà	mǎr-	mǎr

When a regular (long) linked form (5.2.2) as well as a short linked form (5.2.2.2.6.1) are available to a given noun, the segmental value of the inalienable linked noun form in a possessive construction corresponds to that of the short form.

noun	free (unmarked) form	inalienable linked form	short alienable linked form	regular alienable linked form
bottom	nìnù	nì-	nì	nìnì
nape (of neck)	wàhlá	wàh-	wàh	wàhlì
testicle	vbààlá	vbàà-	vbàà	vbààlì

Besides nouns with idiosyncratic paradigms (5.3.4.2.3), which in many cases have more than one linked form, there are only two nouns in the data with inalienable linked forms that differ segmentally from those of their alienable counterparts (see 5.2.2.2.6.2):

noun	free (unmarked) form	inalienable linked form	alienable linked form
liver	dígnù	dígn-	dígîn
underarm	(nì) nà-rígnù	(nì) nà rígn-	(nì) nà-rígîn

5.3.4.2.2 Inalienable possessive pronouns

The inalienable possessive pronouns paradigm is distinct from that of alienable possessive pronouns (5.3.3.3.1, 6.1.4.1). Basic inalienable possessive pronoun forms are given in the table below, and their behaviour is shown for the example word **káálà** 'head,' whose short linked form is **káà** (cf. 5.2.2.2.6.1):

person	inalienable possessive pronoun	example usage	gloss
1SG	-í	káání	my head (inal.)
2SG	-m	káám	your (sg.) head (inal.)
1&2SG	-ná	kááná	our (your (sg.) and my) head (inal.)
3SG	-`rú ~ -`wú	káàrú ~ káàwú	his/her/its head (inal.)
3SG.COREF/IMPERS	-lé	káále	his/her/its (coref.) / its head (inal.)
1PL	-rí	káárí	our (excl.) head (inal.)
2PL	-ró	kááró	your (pl.) head (inal.)
1&2PL	-zínzá ~ -zíná	káázínzá ~ káázíná	our (incl.) head (inal.)
3PL	(dùgú)	(káà dùgú)	their head
3PL.COREF/IMPERS	-ré	kááré	their (coref./impers.) head (inal.)

A detailed section on inalienable possessive pronouns is found in the chapter on pronouns (6.1.4.2). Morphophonological alternations, which frequently accompany inalienable possessive pronouns, are addressed there.

5.3.4.2.3 Idiosyncratic paradigms

The following nouns exhibit segmentally idiosyncratic inalienable possession paradigms:

dwă'	belly	ná-rìmnú	tongue
kwàá	neck, voice	páà	father
kyáá-rìnná	paternal aunt	páá-ná-rìnná	paternal uncle
máárnà	eldest sibling	páà vâà	husband
'márá	friend	syâh	hand
náábà	colleague	túù	mother
nánà'	maternal uncle	wáà	nose
nà-púrâ	navel		

Four of the paradigms are incomplete in the language; speakers of the language use alienable possessive pronouns to fill in gaps (see Appendix 1). Gaps reflect usage: singular forms are more complete than plural pronominal forms, and address forms ('my friend,' etc.) are more complete than non-address forms.

The paradigm of **túù** 'mother' has, in addition to other irregularities, a suppletive root.

tíí	my mother
kyááná	our (your (sg.) and my) mother

Complete paradigms are given for all of these idiosyncratic constructions in Appendix 1.

5.3.4.2.4 Tonal structure

Like the segments of inalienable noun-pronoun possessive constructions, which are fused into a single phonological word, a simplified tone melody is found on inalienable noun-pronoun possessive constructions. The tone melody of the resulting forms is dependent both on the tone of the linked noun roots and the tone of the possessive pronouns.

5.3.4.2.4.1 Linked forms corresponding to HL nouns

When a linked form corresponding to a HL-toned noun is fused with a H-toned inalienable possessive pronoun, the resulting melody of the composite phonological word is usually H. This is shown by constructions involving **káálà** ‘head’ (linked forms are accounted for in 5.2.2):

linked form		inalienable assoc. pn.	→	inalienable assoc. construction	
káà head:LF	+	-m̀ 2SG.POSS.INAL	→	káám head:2SG.POSS.INAL	your (sg.) head (inal.)
káà head:LF	+	-ró 2PL.POSS.INAL	→	kááró head:2PL.POSS.INAL	your (pl.) head

When a linked form corresponding to a HL-toned noun is fused with a LH-toned inalienable possessive pronoun, the resulting melody of the composite phonological word is HLH. Consider constructions involving **káálà** ‘head’ (linked forms are accounted for in 5.2.2):

káà head:LF	+	-rú 3SG.POSS.INAL	→	káàrú head:3SG.POSS.INAL	his/her/its head (inal.)
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Exceptionally, as concerns **-zínzá** in particular (but not its alternate form **-zíná**; see 6.1.4.2), three tonal forms have been attested in inalienable possessive constructions with linked forms corresponding to HL-toned nouns. This is shown with the noun **páà** ‘man, father’:

páà man:LF	+	-zínzá 1&2PL.POSS.INAL	→	páázínzá ~ páà zínzá ~ páà z̀inzá man:1&2PL.POSS.INAL	our (incl.) father (inal.)
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The first form (ex. **páázínzá**), which is tonally parallel to other inalienable possessive constructions, is the most common. The second and third forms (ex. **páà zínzá** ~ **páà z̀inzá**), which are less common, resemble constructions involving the third person plural pronoun **dùgú** in that the tonal form of its possessed head noun—as in alienable constructions—is not fused with the suffix. Still, as is sometimes the case with **dùgú**, a semantically inalienable construction is expressed (6.1.4.2). Although the issue has been

probed, no semantic difference has been identified among the three tonal forms found with constructions involving the noun **páà** or other kinship terms.

However, when the same tonal forms are found with body parts which can be used to indicate location (5.13), the third form (only) indicates locative (see 5.3.1) rather than part-whole semantic relation. This is shown in reference to **káálà** ‘head’:

káà	+	-zínzá	→	káázínzá ~	our (incl.) head (inal.)
head:LF		1&2PL.POSS.INAL		káà zínzá	
				head:1&2PL.POSS.INAL	

cf. **káà zìnzá** on us (incl.)
head:1&2PL.POSS.INAL

5.3.4.2.4.2 L-toned linked forms

When a L-toned linked form is fused with a H-toned inalienable possessive pronoun, the resulting melody of the composite phonological word is LH. This is shown in constructions involving **fàálá** ‘back, skin’:

fàà	+	-m̀	→	fààm	your (sg.) back, skin
back:LF		2SG.POSS.INAL		back:2SG.POSS.INAL	(inal.)

fàà	+	-ró	→	fààró	your (pl.) back, skin
back:LF		2PL.POSS.INAL		back:2PL.POSS.INAL	(inal.)

When a L-toned linked form is fused with a LH-toned inalienable possessive pronoun, the resulting melody of the composite phonological word is LH:

fàà	+	-`rú	→	fààrú	his/her/its back, skin
back:LF		3SG.POSS.INAL		back:3SG.POSS.INAL	(inal.)

In contrast to tonal patterns found when **-zínzá** is attached to linked forms corresponding to a HL-toned noun, (5.3.4.2.4.1), there is a single and regular tonal pattern for L-toned linked forms.

fàà	+	-zínzá	→	fààzínzá	our (incl.) back, skin
back:LF		1&2PL.POSS.INAL		back:1&2PL.POSS.INAL	(inal.)

5.3.4.2.4.3 Linked forms corresponding to HLH nouns

When a linked noun form corresponding to a HLH noun is fused with a H- or LH-toned inalienable possessive pronoun, the resulting melody of the composite phonological word is HLH. This is shown in the following three-mora (cf. 2.4.2) constructions with the nouns **fâhzí** (linked form: **fâhzi**) and **?ázi** (linked form: **?ázi**):

fâhzi	+	-í	→	fâhzí	my member of
member.of.		1SG.POSS.INAL		member.of. fâhzárà :	fâhzárà (inal.)
fâhzárà :LF				1SG.POSS.INAL	(see Glossary)

fâhzi	+	-m	→	fâhzám	your (sg.) member of
member.of.		2SG.POSS.INAL		member.of. fâhzárà :	fâhzárà (inal.)
fâhzárà :LF				2SG.POSS.INAL	

?ázi´	+	-`rú	→	?ázirú	his/her/its member of
member.of.		3SG.POSS.INAL		member.of. ?àzgárà :	?àzgárà (inal.)
?àzgárà :LF				3SG.POSS.INAL	(see Glossary)

When the resulting construction contains more than 3 available morae, the tonal association for the possessed noun portion adheres to that found on the normal linked form of the HLH noun, where a LH contour may not be realized (this restriction is described in 5.2.2.1 and 4.3.1.3); the second H is not realized on the possessed noun portion.

fâhzi	+	-ná	→	fâhzi`ná	our (your (sg.) and my)
member.of.		1&2SG.POSS.INAL		member.of. fâhzárà :	member of
fâhzárà :LF				1&2SG.POSS.INAL	fâhzárà (inal.)

This pattern of association contrasts with morphologically simple nouns (including those which are HLH-toned), where tones consistently associate with morae from the right end of the word.

bâhgá	dregs
nà-ráávirá	foam

Right-edge tones which exceed the number of available morae are not realized (see also 4.1.2.2). This is shown in a construction with **?ázi´** (linked form: **?ázi´**)

?ázi´	+	-í	→	?ázi	my member of
member.of.		1SG.POSS.INAL		member.of. ?àzgárà :	?àzgárà (inal.)
?àzgárà :LF				1SG.POSS.INAL	

5.3.4.2.5 Nasality

There is no spread of nasality between linked nouns and inalienable possessive pronouns.

fàà	+	-ná	→	fààná	our (your (sg.) and my)
back:LF		1&2SG.POSS.INAL		back:1&2SG.POSS.INAL	back, skin (inal.)

nà-nù	+	-ró	→	nà-nùró	your (pl.) bum (inal.)
bum:LF		2PL.POSS.INAL		bum:2PL.POSS.INAL	

For nouns with linked forms ending in **-zi**, the nasality of the first person pronoun **-í** does not appear in the resulting inalienable possessive construction:

ʔázi´	+	-í	→	ʔázi	my member of
member.of.		1SG.POSS.INAL		member.of.ʔàzgàrà:	ʔàzgàrà (inal.)
ʔàzgàrà:LF				1SG.POSS.INAL	

5.4 Compound nouns

Compound nouns are extremely common in Mambay; of the non-borrowed lexicalized nouns in the data, almost half (811 of 1625) are compounds. In the following discussion, differences between compound nouns and noun phrases are reviewed (5.4.1). The morphological and semantic constitution of compound nouns is then examined in 5.4.2 and 5.4.3.

Pluralization of compound nouns is described in 5.5.2.4, and the behaviour of compound nouns in inalienable possessive constructions is discussed in 5.3.4.1.

5.4.1 Compound nouns vs. noun phrases

The vast majority of compound nouns exhibit an internal structure identical to noun phrases, and in particular that of possessive constructions, which contain a possessed head noun followed by a dependent possessor noun (5.3.3.1).

nàm kùù	wild animal
animal:LF bushland	

In other words, the primary way in which compound nouns may be distinguished from spontaneous possessive constructions is the compound nouns' membership in the lexicon (cf. Payne 1997:94; as stated in 5.3.3.1, lexical membership of possessive constructions in Mambay is based on frequency and is therefore a gradient rather than quantum distinction).

Another important way of distinguishing compound nouns from spontaneous possessive constructions is the occurrence of compounds in which the meaning of the compound is different than the sum of the meaning of its parts. This is developed in the section on semantic constitution below (5.4.3).

However, noun + noun compounds differ subtly from possessive constructions in a number of other respects. First, although plurality is marked on the semantically plural morphological constituent of a spontaneous possessive construction, it has the additional possibility of cliticizing on some noun + noun compounds (5.4).

compound noun	plural	
láà túbò	láà túbòzò ~ lálzì túbò	heart / hearts
gourd:LF blood	gourd:LF blood:PL ~ gourd:PL:LF blood	

cf. lǎà pábà	lálzì pábà	milk gourd / milk gourds
gourd:LF milk	gourd:PL:LF milk	

Additionally, and importantly, noun phrases other than possessive constructions may constitute compounds (5.4.2).

vbîz bóm	fishing line
fishhook:LF one	

There are, however, several types of words that are attested as dependent elements in noun phrases but not in compound nouns: possessive pronouns (5.14.1 and 6.1.4), specifiers (5.14.4 and 9.2), and relative clauses (5.14.6 and 10.2.2.3).

Further, there is a small number of compounds which differ from noun phrases in that they do not contain a constituent head noun. Instead, they are comprised of a clause (5.4.2.4).

mì-háà-làárè	duck sp.
1SG-return:VN-Léré	

Finally, there are words in some categories of compound nouns which literate speakers of the language consistently prefer to write as single orthographic words: nouns with semantically opaque components (5.4.3), those composed of a clause (5.4.2.4), those containing proper names (5.4.2.5), and those which exhibit reduplication (5.4.2.6). This differs from spontaneous noun phrases which, with the exception of inalienable pronominal possessive constructions, are always written with separate orthographic words.

5.4.2 Morphological constitution

Most compound nouns are composed of the linked form of one noun (5.3.3.3.1) followed by the free (unmarked) form of another noun.

nàṃ kùù	wild animal
animal:LF bushland	

sàṣṣṣ túbò	blood vessel
sinew:LF blood	

As stated above, such compounds are formally equivalent to spontaneous possessive constructions (5.3.3.1). Attested variations on the prototypical noun + noun compound construction are as follows:

- three- and four-noun compounds (5.4.2.1);
- noun + numeral compounds (5.4.2.2);
- compounds containing prepositional phrases (5.4.2.3);
- clausal compounds (5.4.2.4);

- compounds containing proper names (5.4.2.5); and
- nouns exhibiting reduplication (5.4.2.6).

Examples of compound nouns representing each of these structures are given in the following paragraphs, and formally equivalent constructions are noted when they occur.

5.4.2.1 Three- and four-noun compounds

Some compounds are composed of three or even four nouns. In each case, these nouns are internally organized such that one of the nouns in the construction is itself a compound noun and/or a possessive construction. Examples of three-noun compounds are as follows:

káà [và'zì dágà]
head:LF leaf:LF mouth

lip (cf. và'zì dágà 'lip area')

vbíìlì [káà wáà]
drum:LF head:LF chief

drum sp. (cf. káà wáà 'chief (respect form)')

Four-noun compounds include the following:

nàm [[dâg tè'n] bàngè]
animal:LF mouth:LF side(body):LF rust.colour

gazelle sp. (cf. dâg tè'nú 'bottom of the rib')

tíngì [fàà ['màh zǎh]]
monitor.lizard:LF back:LF foot:LF ox

monitor lizard sp.

As these examples suggest, embedded compound nouns are more commonly found in the possessor position rather than the possessed position of three- and four-noun compounds.

As is the case for spontaneous possessive constructions, which are formally equivalent, the internal formal structure of the compound is ambiguous (cf. 5.3.2). For example, if such a referential context were possible, **nàm dâg tè'n bàngè** could also be understood to mean 'animal of mouth/edge of side of rust-colour.'

5.4.2.2 Noun + numeral compounds

Other compound nouns contain a numeral (9.1) as a dependent element.

hèègì dâg bàt
knife:LF mouth:LF two

circumcision knife, scissors

tòh dâg bàt
snake:LF mouth:LF two

snake sp.

vbîz bóm
fishhook:LF one

fishing line

These compounds are formally equivalent to count constructions in which the head noun is definite (5.14.3, 9.1.1.1). For example, depending on the referential context, **vbîz bóm** may also be understood to mean ‘the one fishhook.’

5.4.2.3 Compounds containing prepositional phrases

A few compound nouns in the data contain or are comprised of prepositional phrases (9.3):

páà bèè káálà man:LF without head	stupid person
sáà dwǎ’ inside belly	womb

The prepositional phrases in these compounds are formally equivalent to normal prepositional phrases (9.3.1). For example, depending on the referential context, **sáà dwǎ’** may also be understood to mean ‘inside the belly.’

5.4.2.4 Clausal compounds

A number of compounds consist of combined clause elements. Minimally, there is a subject and a predicate (most often represented by a pronoun and a conjugated verb respectively). As shown by the example below, other components may include objects, negation clitics, locative complements and clitics, and adverbial ideophones.

compound noun with etymological parsing	gloss	explanation
mì-háà-làárè 1SG-return:VN-Léré	duck sp.	lit. “I am returning from Léré.” This duck species (White-faced Whistling Duck) has a call which reportedly sounds like such a phrase.
nǎ-?áà-báhrà PFX-bean.leaves-better	fish sp.	lit. “bean leaves [are] better.” This fish type (small stage of “Kanga” / <i>Heterotis niloticus</i>) is often so bitter when improperly prepared that it is better to eat bean leaves, which constitute the simplest sauce.
nǎ-rím-byàá 1&2:OPT-dip:OPT-water	cormorant, darter (bird sp.)	lit. “let’s [1&2 (sg.)] dip [in] the water.” These birds catch fish by diving.

nà-rígrí-mj́rà 1&2-roll:VN-excrement	scarab beetle	lit. “we [1&2 (sg.)] are rolling excrement.” These insects, also known as dung beetles, roll excrement into small balls.
ná-dím-kpírá 1&2:OPT-dip:OPT-IDEO	heron sp.	lit. “let’s [1&2 (sg.)] cover with a kpírá -like posture.” This heron sp. (Black Heron) catches its prey under an umbrella which it forms of its wings.
ná-gbáh-ù-záh 1&2:OPT-catch:OPT-to.here-ox	Orion’s belt	lit. “let’s [1&2 (sg.)] catch the ox [by bringing it] toward [ourselves].” This formation of three stars in a line looks like a person chasing an ox, which is in turn chasing another person.
Ø zàà-fâh-yá 3:PFV cross:VN-path-NEG	tiny shrew sp.	lit. “it did not cross the path.” This shrew is so small that it has difficulty crossing even a path.

In the data, such compounds describe the appearance or behaviour of a species or natural phenomenon. In most cases, literate Mambay speakers insist that these terms should be written as single words.

In Mambay, there are no compounds comprised of only a verb phrase (e.g. “run-a-gate” or “*cache-sexe*”); such compounds are expressed by clauses (as shown in this section) or participant noun constructions (5.7).

5.4.2.5 Compounds containing proper names

A further group of compounds, namely those which contain proper names, are of interest for several reasons. First of all, these nouns contain only canonical names (5.12.1.1). Secondly, the internal structure of these nouns is complex; in some cases, like those shown in the previous section (5.4.2.4), these nouns are composed of clause elements. Thirdly, and as is also the case with most nouns composed of clause elements (5.4.2.4), speakers of the language insist that nouns containing proper names should be orthographically fused.

compound noun with etymological parsing	gloss
nà-syàg-gàm bàhy 1&2-shine:VN-Gam like.electricity	electric fish

tóò-nîn-gáhlàn Taw:LF-eye:LF-faceted	fish sp.
tóò-pyàá Taw:LF-?	lizard sp.
tí-gàm-kùù-kpà'lá AUG-Gam:LF-neck:LF-snail	stork sp.
tí-kwée-má-gâw AUG-Kwee:LF-with-hunter	secretary bird

5.4.2.6 Nouns exhibiting reduplication

Nouns exhibiting reduplication differ from other compounds in that they are composed of two morphologically similar or identical roots whose semantic value is opaque (see 5.11.2 for further discussion).

ḍèlèḡ-ḍéleḡ	bell	tí-kjí-kjí	whooping cough
fùgù-fúgú	lungs	vùrùm-bùrùm	satchel
tì-kòht-kòht	hornbill sp.	wàh-wàh	hubbub

5.4.3 Semantic constitution

Often, the meaning of a compound noun may be predicted from the meaning of its parts .

nú' byàá hole:LF water	well	tíl súgò sickness:LF ear	earache
sùùzì ?ínù hair:LF body	body hair	tòh byàá snake:LF water	water snake

However, there are many compounds in which the meaning of the whole construction diverges from the literal sum of its parts. Still, a semantic connection is usually discernable.

?àhrì kèí canoe:LF sky	airplane	húḍ fyàá death:LF moon	lunar eclipse
bèè ?ínù water:LF body	colour	kpân vwáà penis:LF dog	praying mantis

In some cases, the meaning of one part of a compound is synchronically opaque.

dàm-kà-ràhbá kingfisher sp.
?:LF-PFX-blueness

nàm-bááyá baboon
animal:LF-?

hùr-tì-góhm locust sp.
?-PFX-tree.sp.

ná-ráh-báh snake sp.
PFX-?:LF-rain

tì-kùm-súbà fire-sorcery
PFX-protect:VN:LF-?

In other cases, it is appropriate to posit compounds even when both component noun roots are synchronically opaque. Complexity in CV shape (cf. 5.1.1.1), abnormal tone melody association (cf. 4.1.2.2) and recurrent segmental elements (including prefixes; see 5.1.2.1) point toward the morphological complexity and internal structure characteristic of compound nouns.

hùr-tí-kpîm locust sp.
?-PFX-?

ná-hùr-kpyáglé fish sp.
PFX-?:LF-?

5.5 Plural formation

In Mambay, morphologically explicit pluralization is compatible with a large proportion—well over half—of nouns. Limitations on the application of pluralization are discussed in 5.5.1. Pluralization strategies, which are based on a morphological template, are outlined in 5.5.2. Collective constructions, which provide an alternative means of signalling semantic plurality on nouns, are discussed in 5.6.

Productive plural constructions associated with verbs and ideophonic modifiers are discussed in the relevant sections (7.3.1.1 and 8.5.1).

5.5.1 Limitations on the application of pluralization

There are three major limitations on the application of pluralization: phonological (5.5.1.1), semantic (5.5.1.2), and pragmatic (5.5.1.3).

5.5.1.1 Phonological limitations

There are strong phonological limitations on which nouns may be pluralized. Noun pluralization applies almost exclusively to canonical noun roots (5.1.1.1), which are

represented by the following shapes: a single heavy syllable, two light syllables, and a heavy syllable followed by a light one.

During field research, no plural forms of non-canonical root shapes were observed in spontaneous speech. In elicited speech, some Mambay speakers produced plurals for a small number of non-canonical noun root shapes (see 5.5.2.1.6 for examples). This given, there was often lack of agreement among subjects concerning the shape and productivity of these plural forms; thus, no conclusion is promoted in the present study regarding the legitimacy or pervasiveness of such constructions.

In addition to CV shape-related limitations, there is a tendency for nouns whose rightmost consonant is an obstruent (besides **g**) or **vb** to resist pluralization. Thus, there are many nouns which appear to be pluralizable from a CV-shape and semantic point of view (5.5.1.2), but which cannot be pluralized. A few of these nouns are as follows:

féévbà	pair of twins
kwáàvbá	bush sp.
máǰà	first child after remarriage
ná-kpéévà	kite (bird) sp.
wízi	wagtail (bird)
zìbó	werewolf

5.5.1.2 Semantic limitations

A number of semantic categories of nouns are rarely or never found with plurals.

Those which are rarely pluralized are non-count nouns: irregular verbal nouns and other abstract nouns, including those which describe physical attributes, or human states and conditions; substances without a fixed shape, including gases, liquids, grains, powders and pastes; and things which are found collectively. In addition, borrowed words are seldom pluralized, even if they meet the phonological and semantic criteria for pluralizable nouns. Examples of non-pluralizable nouns from each of these categories are as follows:

fossilized verbal nouns (5.9.2):

gǎdlè	deaf person (cf. gàd ‘be deaf’)
kùiló	walk (n.) (cf. kíí ‘set in motion’)
nà-ryáà	wink (n.) (cf. ríí ‘clean out, wink’)
nà-wáhwrá	barking (cf. wàhw ‘bark’)
sá’gá	number (cf. sá’ ‘buy’)
vóglà	watch (n.), beginning of dry season (cf. vóg ‘watch, guide’)

attributes of the physical world:

dù'gá	size, length
kpâtgá	distance
pâh	wetness, newness
pùgá	blackness, darkness
séégá	red-brownness
wîgá	thickness, fatness

human states and conditions:

dwáhlà	thirst
nà-vyàngàrà	jealousy
nà-kùllá	youthfulness (woman's)
tí-gwâhrí	sickness from breaking a taboo
tí-táàrì	weakness, unsteadiness, staggering
púùgá	ugliness, badness

other abstract nouns:

dìgì	neighbourship
gá'	fulfillment of needs
kàrà	drought
hì' bá	abundance
tí-sǎ'	chance
tí-sí' bá	honour

substances without a fixed shape, including gases, liquids, powders and pastes:

dàrmí	clay
gífbò	alcoholic drink
kú'lvò	smoke, dust
mùùrú	silt
súúbà	urine
tùúrì	<i>boule</i>

things which are found collectively:

bùùbá	white hair
bùùrú	millet sp.
nà-dígzilè	algae
nà-réngéré	hanging roots
pèmná	ant sp.
síblè	termite sp.

borrowed words:

gâw	hunter (cf. Fulf. <i>gawjo</i>)
húrò	village (cf. Fulf. <i>wuro</i>)
lèèmú (pl.)	citron (cf. English <i>lemon</i> via Hausa <i>lèèmóó</i> (sg.) / <i>léémúúnàà</i> and Fulf. <i>leemun</i>)
pêl	shovel, scoop (cf. Fr. <i>pelle</i> ‘shovel’)
sírlà	trousers (cf. Fulf. <i>sirla</i>)
zííbà	pocket (cf. Arabic <i>jīb</i> via Fulf. <i>jiiba</i>)

Nouns which are inherently non-pluralizable are names of people and places, regular verbal nouns, and nouns in the context of inalienable possessive constructions. Examples of non-pluralizable nouns from each of these categories are as follows:

names of people and places (5.12):

búrò	(clan name)
gǎm	(female name)
káàrá	(place name)
kàdǵà	(clan name)
tâw	(male name)
vbǎglà	(place name)

regular verbal nouns (5.9.1.1):

bàŋ	tying, knot (cf. báŋ ‘tie’)
ǵâr	getting better, healing (cf. ǵâr ‘get better’)
kòhm	gathering together, meeting (cf. kòhm ‘gather together’)
kùh	becoming scarce, scarcity (cf. kùh ‘be scarce’)
rò’	talking, saying, conversation (cf. ró’ ‘talk, say’)
zyágrì	making a mistake, mistake (cf. zyágrì ‘make a mistake’)

nouns in the context of inalienable possessive constructions (5.3.4):

káání head: 1SG.POSS.INAL	my head(s)	káázínzá father: 1&2PL.POSS.INAL	our (incl.) head(s)
páy man: 1SG.POSS.INAL	my father(s)	páázínzá man: 1&2PL.POSS.INAL	our (incl.) father(s)

5.5.1.3 Pragmatic limitations

Even for nouns that are phonologically and semantically pluralizable, the application of pluralization in discourse is moderate. Some general observations which put this situation into perspective are as follows:

- Even when phenomena in the referential realm are semantically plural, morphologically explicit plural constructions appear to be the exception rather than the rule.

kàdá mǎ zǎh.

Kada with ox

Kada has oxen. (Or: Kada has an ox.)

- When a morphologically explicit plural is used, the semantic plurality of the referent is emphatic:

kàdá mǎ zǎhlzá.

Kada with OX:PL

Kada has oxen.

- Morphologically explicit plurals are rarely with numerals (9.1), since the plurality of the referent is already understood from an inherently plural number.

kàdá mǎ zǎh ɓàtì.

Kada with ox two

Kada has two oxen.

- Additionally, and in contrast to other pluralizable nouns, human or personified nouns are most often pluralized when there is a plural referent, even if the plurality of the referent is not emphatic (cf. Corbett 2000:55ff.):

kàdá mǎ gérêm.

Kada with woman:PL

Kada has wives (i.e., Kada is married and has more than one wife).

gérêm mǎ nà-túttè.

woman:PL with PFX-soap

The women have soap.

tí-gérêm wǎɗ ðàd-zí túrà kúù.

AUG-woman:PL chief sow:PFV-PL millet fields

The wives of the chief sowed millet in the fields.

nà-pùgzá lùg-zí.

PFX-person:PL go.out:PFV-PL

The people went out.

nàmzá " gǎh ?éré mǎ nà-pùgpùgá.

animal:PL TOP dwelling 3PL.POSS with PFX-humankind

The animals had their dwelling with humankind.

In addition to the animacy hierarchy, pragmatic factors such as definiteness and grammatical (subject vs. object, head vs. non-head position) and discourse roles (including topicalization and definiteness) may condition the use of morphologically explicit pluralization on nouns; these issues deserve further investigation.

5.5.2 Pluralization strategies

Noun plurals are typically formed with a template containing the consonant **z** (5.5.2.1). In addition, there are a number of noun plurals which are formed irregularly (5.5.2.2).

The tone of typical and—with one exception—irregular plurals is the same as that of the singular nouns from which they are derived.

The application of the plural template can result in the morphophonological alternation of vocalic as well as consonantal nasality (5.5.2.3).

The presence of derivational prefixes on nouns (5.1.2) does not affect the application of pluralization to accompanying noun roots:

kwàá	neck, voice	pl. kwàlzá
ná-kwàá	necklace, bead	pl. ná-kwàlzá

The preceding examples also show that in plural constructions, in contrast to some linked noun forms (5.2.2.2.1, 5.2.2.2.2), semivowels do not participate in morphophonological alternation.

Pluralization strategies on possessive constructions and compounds are discussed in 5.5.2.4.

5.5.2.1 Typical plurals

Typical plurals appear to be formed by the addition of various affixes containing the consonant **z**. However, when pluralized nouns are reviewed as a group, it becomes clear that they consistently conform to a C(C)VC.zV template. This plural template is achieved for any given root shape in at least two of the following five ways:

1. addition of the consonant **z** to the onset of a final syllable;
2. deletion of existing onset consonants in the final syllable, or shifting them to the coda of the second-last syllable;
3. addition of **l** or **r** to the coda of the second-last syllable;
4. shortening of long vowels in the second-last syllable; and
5. addition, retention, or alteration of a final vowel.

The application of these strategies depend on the shape of the host root, but there is a surprising amount of variation among resulting plural forms even when base nouns are not greatly different. For example, the identity of the final vowel (#5 above) depends on the structure of the noun which is subject to pluralization (this is shown in further detail in 5.5.2.1.1–5.5.2.1.6 below).

An additional instance of this strategic variation is that in most cases (but cf. 5.5.2.1.5), there is no synchronically discernable phonological motivation for the insertion of **l** versus **r** in a pluralized noun (#3 above). This is evident from the following examples:

báà	cane rat	pl. bárzà (also: bàrà , but not bálzà)
ḃáà	tree sp.	pl. ḃálzà (but not ḃárzà)
bǎh	rain	pl. bàhlzá or bàhrzá
tǎh	tree sp.	pl. tàhrzá (but not tàhlzá)
dwǎʼ	belly, centre	pl. dwàʼlzá (but not dwàʼrzá)
vwǎʼ	large-spotted genet	pl. vwàʼrzá (but not vwàʼlzá)
kwáà	grass	pl. kwálzà or kwárzà
kwàá	neck, voice	pl. kwàlzá (but not kwàrzá)
láà	fig, fig tree	pl. lálzà (but not lárzà)
làá	hump	pl. làlzá (but not làrzá)
wáà	fig, fig tree	pl. wálzà or wárzà
wàá	hump	pl. wàlzá (but not wàrzá)

The choice of **l** versus **r** for plural nouns often varies between dialect areas, but not in a readily apparent direction for the lexicon as a whole. Within a single dialect area, Mambay speakers are usually consistent in their use of a given plural. However, for nouns which are infrequently used, speakers may accept or even provide inconsistent forms in the context of elicitation. The sociolinguistic complexities of this situation are acknowledged in the present research, but deserve further exploration.

One consequence of the application of a consistent morphological template to nouns of different CV shapes is the neutralization of contrast among plural forms. Consider the following singular/plural alternations:

wáà	fig, fig tree	pl. wálzà ~ wárzà
wàá	hump	pl. wàlzá
wálà	orphan	pl. wálzà
wààlá	basket rim, wheel	pl. wàlzá

Hypothetically, plurals of nouns from all of the canonical shapes (5.1.1.1) could be neutralized to a single shape:

wáà	fig, fig tree	pl. wálzà
wál*	[hypothetical root]	pl. wálzà
wálà	orphan	pl. wálzà

wáálà*	[hypothetical root]	pl. wáalzà
wálgà*	[hypothetical root]	pl. wáalzà

However, there are no examples of such a profound neutralization in the data.

The output of each of the five template-accommodating processes listed at the beginning of this section is further explored in reference to the specific noun root shapes to which they apply:

- C(C)VV (5.5.2.1.1);
- C(C)VC (5.5.2.1.2);
- C(C)V.CV (5.5.2.1.3);
- C(C)VV.CV (5.5.2.1.4);
- C(C)VC.CV (5.5.2.1.5); and
- other CV shapes (5.5.2.1.6).

5.5.2.1.1 C(C)VV roots

CVV and CCVV noun roots conform to the noun plural template C(C)VC.zV by the addition of **z** to the root, the addition of **l** or **r** to the coda of the first syllable (see the first part of 5.5.2.1), the shortening of the long vowel in the first syllable, and the addition of a final vowel. With roots containing the vowel **aa** the added final vowel is the same quality as that of the root:

láà	gourd	pl. lálzà
kwáá	neck, voice	pl. kwàlzà
nà-pàá	antelope sp.	pl. nà-pàlzà
báà	cane rat	pl. báarzà (also: bàrà ; see 5.5.2.2)
dàá	papa	pl. dàrzà
tyáà	fish sp.	pl. tyáarzà

However, with CVV and CCVV noun roots containing the vowels **ii**, **oo**, (there is only one example of each in the data) and **uu**, the added final vowel is **o**:

sǐǐ	fish sp.	pl. sìnzó (see 5.5.2.3.1 regarding nasality)
syòó	song	pl. syòlzó
fùú	trench	pl. fùlzó
nà-súù	insect sp.	pl. nà-sùlzó
túù	fish sp.	pl. tùlzó
tí-vúù	antelope sp.	pl. tí-vùrzò

There are no CVV and CCVV noun roots in the data which contain **ee** and which may be pluralized.

5.5.2.1.2 C(C)VC roots

Only a few of the C(C)VC noun roots in the data may be pluralized. Each of these roots conforms to the noun plural template C(C)VC.zV by the addition of **z** and a final vowel to the root.

For CVC roots containing the vowel **a**, the added final vowel is **a** or **o**:

kâŋ	bowstring, drum snare	pl. káŋzà
kǎw	frog sp.	pl. kàwzá ~ kàwzó

For CVC roots containing other vowels, the added final vowel tends to be **o**:

bîŋ	forest	pl. bíŋzò
fêhm	fish sp.	pl. féhmzò
kǔm	baobab	pl. kùmzó
kyô'w	warthog, pig	pl. kyó'wzò
kpúŋ	hill	pl. kpúŋzó
'wêy	fish sp.	pl. 'wéyzò ~ 'wéyzà

5.5.2.1.3 C(C)V.CV roots

CV.CV and CCV.CV noun roots conform to the noun plural template C(C)VC.zV by the addition of **z** to the onset of the root's final syllable, shifting of the existing onset consonant in the final syllable to the coda of the second-last syllable and, for roots ending in the vowels **i e a o**, the retention of the final vowel.

yèrí	clothing	pl. yèrzí
vbìlá	piece of <i>boule</i>	pl. vbìlá
súgò	ear	pl. súgzò
kwéré	fence	pl. kwézzè

For roots ending in the vowel **u**, the final vowel becomes **o**:

kpúgù	tree sp.	pl. kpúgzò
sùmú	potter's kiln	pl. sùmzó
zínù	tooth, tusk	pl. zínzó

Exceptionally, for C(C)V.CV roots in which the onset of the final syllable is **z**, four strategies have been observed. This is illustrated using data gathered for **vbízò** 'fishhook,' a root with which all four strategies have been attested:

1. invariable plural: **vbízò**
2. addition of l to coda of first syllable: **vbílzò**
3. addition of r to coda of first syllable: **vbírzò**
4. gemination of z: **vbízzò**

Although the fourth strategy accords with that which is normally used for other C(C)V.CV roots, in roots where **z** is the final syllable's onset it has only been observed with a single speaker. While a number of people have given plural forms with **l** or **r** in this situation, the invariable plural is even more commonly employed (see 5.5.1.1).

5.5.2.1.4 C(C)VV.CV roots

CVV.CV and CCVV.CV noun roots typically conform to the noun plural template C(C)VC.zV by the addition of **z** to the onset of the root's final syllable, addition of **l** or **r** to the coda of the second-last syllable, shortening of long vowels in the second-last syllable and, for roots ending in the vowels **i e a o**, the retention of the final vowel.

bóólì	lion	pl. bólzì
fíílò	house	pl. fílzò
tîrâ	mother, matron	pl. tîrzâ
tî-kóólè	pipe	pl. tî-kóolzè

Plural forms of C(C)VV.CV noun roots ending in **u** are the same, except that the final vowel of the plural form is **o** rather than the identical vowel **u**.

bjírù	cobra	pl. bjrzò (cf. 5.5.2.3.1 re. nasality)
dúùrú	hyrax	pl. dûrzó
hùùnú	thigh	pl. hùnzó (cf. 5.5.2.3.1 re. nasality)

When the consonant in the last syllable of a C(C)VV.CV noun is an obstruent, the obstruent is replaced by the **z** of the plural template.

bóòzá	lump of mud	pl. bólzá
kpèègá	tree	pl. kpèlzá
'wáàgá	crack	pl. 'wálzá

Almost all CVV.CV and CCVV.CV nouns roots ending in **rV** and **IV** consistently insert **r** and **l** respectively during pluralization (as evident from the examples earlier in this section). This could also be viewed as the shifting of these consonants from the coda of the last syllable to the onset of the first syllable. There are, however, a few exceptions in the data, including:

fúúrâ	hernia	pl. fúlzâ ~ fúrzâ
gì'rá	gourd	pl. gì'lzá
tí-dî'rá	millet sp.	pl. tí-dî'lzá ~ tí-dî'rzá

5.5.2.1.5 C(C)VC.CV roots

CVV.CV and CCVV.CV noun roots conform to the noun plural template C(C)VC.zV by the addition of **z** to the onset of the root's final syllable, deletion of the existing onset

consonant in the final syllable and, for roots ending in the vowels **a** and **o**, the retention of the final vowel.

dàmná	thatch, grass sp.	pl. dànzá (cf. 5.5.2.3.1 re. nasality)
nà-fóblà	water hyacinth	pl. nà-fóbzà
nà-gwálgà	mountain pass	pl. nà-gwálzà
bùmgó	ribcage	pl. bùmzó
hîmgó	owl sp.	pl. hîmzó
nà-kpôngó	chameleon	pl. nà-kpôngzó

There are two C(C)VV.CV noun roots ending with the vowel **u** that are pluralized in a similar fashion, except that the final vowel becomes **o**:

nà-rîmnú	tongue, bud	pl. nà-rîmzó (cf. 5.5.2.3.1 re. nasality)
rúglò	fish sp.	pl. rúgzò (also: rúgúgzò ; see below)

None of the C(C)VV.CV noun roots in the data which end in **i** or **e** may be pluralized.

Exceptionally, three plurals retain the existing consonant in the final root syllable after **z** has been added. This results in the copying of the previous syllable's vowel before the persistent consonant, and the consequent creation of an addition syllable:

dígnù	liver	pl. dígínzò
nì nà-rígnù	armpit	pl. nì nà-rígínzò
rúglò	fish sp.	pl. rúgúgzò (also: rúgzò ; see above)

5.5.2.1.6 Other root shapes

Apart from those noun roots exhibiting one of the canonical shapes presented in the sections immediately above, there are very few roots which can be pluralized. Even those who are able to provide plural data for other shapes are cautious about the validity and frequency of most of these forms. A representative list of non-canonical nouns for which plurals have been elicited is as follows:

bàhà	ibis sp.	pl. bàhànzà
bàvbâw	fish sp.	pl. bàvbâwzò
gùùgìnù	gill	pl. gùùgìnzó
gìhgìnù	wing, fin	pl. gìhgìnzó
gìwâh	cup	pl. gìwâhlzà
lágângá	water turtle sp.	pl. lágânzá
nà-sógôngá	earthworm	pl. nà-sógôngzá
pùpùrì	horn (instrument)	pl. pùpùrzí

A possible reason for the pluralizability (however marginal) of these words is that they could be perceived as morphologically complex (prefixed or compound) words, which may take plural morphology if at least one of the roots is pluralizable (5.5.2.4).

5.5.2.2 Irregular plurals

Ten of the nouns in the data, most of which are commonly used vocabulary items, employ alternative pluralization strategies. For eight of the ten words, the irregular plural exists alongside a typical plural form; however, the irregular forms are more commonly used.

For six monosyllabic nouns, the plural is formed by the addition of a **-ra** (after a low vowel) or **-ro** (after **u**) suffix. (For comparative discussion of this suffix, see Anonby 2008:15–7; Ruelland 1992:142–3, 249–52; and Elders 2000:118, 122–3). Three of the six nouns contain contrastively long vowels, and in each of these cases the root vowel is shortened during pluralization. Another way of expressing the process of pluralization for these nouns is the subjection of the singular C(C)VV roots to a plural template C(C)VrV. These alternations are as follows:

báà	cane rat	pl. bàrà (also: bàrzà)
kyáà	container	pl. kyá̀r̀à (also: kyánzà ; see 5.5.2.1.3)
vúù	sheep, goat	pl. vú̀r̀ò (also: vú̀rzò)

The remaining three of the six nouns which employ this strategy contain vowels which are modified: in two cases by pharyngealization, and in the other case by glottalization. However, pharyngealized and glottalized vowels do not support contrast in length (2.2.1). Consequently, for two of the words, the C(C)VrV plural template does not affect the length of the modified root vowels. These singular/plural alternations are as follows:

hâh	shepherd's stick, herd of 100 cows	pl. hâhrà (also: hâhlzà)
vyâ'	mouse	pl. vyâ'̀rà (also: vyâ'̀rzà)

The evaporation of pharyngealization on a final monosyllabic noun is without parallel in the language. It is associated with the shortening of the vowel in both of its two irregular plural forms.

zǎh	ox	pl. zàrà, zàrzà (also: zàhlzà)
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Other irregular plurals are unpredictable. For two nouns, idiosyncratic plural forms show only a nominal similarity to the singular roots:

bígà	child	pl. bélà
náábà	colleague, intimate friend	pl. nágrò

For two additional nouns, however, there is no discernible resemblance between singular and plural forms:

vínà	woman	pl. gérêm ~ gérmù (also: vínzà)
vbìná	male (n.), husband	pl. húrmù (also: vbìnzá)

5.5.2.3 Morphophonological alternation of nasality

There are two cases in which nasality is subject to a morphophonological alternation when the noun plural template is applied. First, nasality evaporates from the final vowel of a root to which the noun plural template is applied (5.5.2.3.1). Second, **l** alternates with **n** in a nasal environment (5.5.2.3.2).

5.5.2.3.1 Evaporation of nasality from the final vowel of a pluralized root

When the C(C)VC.zV plural template (5.5.2.1) is applied to a noun root in which the final vowel is nasalized, nasality on that vowel evaporates.

bùrì	wild manioc sp.	pl. bùrzí
gèmná	entrance hut	pl. gènzá
hámà	duiker sp.	pl. hámzà
nà-kàrà	faithful companion, disciple	pl. nà-kàrzá
sáṅṅì	mortar	pl. sáṅzì
sìrǎ	year	pl. sìrzá

This alternation takes place because the intervening obstruent **z** of the plural template deprives the word-final final nasalized vowel of the minimal environment required to host nasality (3.4.2, 3.4.3.8).

5.5.2.3.2 Alternation of **l** and **n** in a nasal environment

Whenever **l** is inserted into a nasal environment as part of a plural template (as described in 5.5.2.1), it is realized as **n**.

kwǎà	fly	pl. kwǎnzà ~ kwǎrzà
cf. kwáà	grass	pl. kwálzà ~ kwárzà
ná'rà	sauce	pl. ná'nzà
cf. vbá'là	chunk, muscle	pl. vbá'lzà
nà-syâh	sucking air between teeth and lip	pl. nà-syâhnzà
cf. syâh	boundary	pl. syâhlzá
sàǎ	woman's loin-garment, menstruation	pl. sànzá
cf. sáà	stone	pl. sálzà ~ sárzà

When the inserted **n** is found as part of a plural construction, the singular root with which it is associated always exhibits a nasal environment; because of this, it is apparent that the underlying form of the inserted consonant is **l** rather than **n** (3.3.2.3).

5.5.2.4 Possessive constructions and compounds

In alienable possessive constructions (5.3.3.3.1), plurality is marked on the semantically plural morphological constituent. Either noun or even both nouns in the possessive construction may be pluralized, depending on the semantic intent. This is evident in the possible plural forms of **fàà syâh** ‘back of the hand’:

fàà syâh back:LF hand	→	fàlzi syâh back:PL:LF hand	backs of the hand
	→	fàà syâhlzà back:LF hand:PL	back of the hands
	→	fàlzi syâh back:PL:LF hand	backs of the hands

On lexicalized noun + noun compounds (5.4), which typically appear to be identical to alienable possessive constructions (5.3.3.1), plural morphology may cliticize on the dependent possessor noun even if the possessed head noun carries the semantic plurality. This is the case with the compound noun ‘heart’:

lâà túbò gourd:LF blood	→	lâà túbzò gourd:LF blood:PL	hearts
	~	lâlzi túbò gourd:PL:LF blood	hearts

There is no plural marking on inalienable possessive constructions; semantic plurality on such constructions is unspecified (5.5.1.2).

5.6 Collective constructions

Collective constructions are used with human nouns, and differ from plural constructions (5.5) in their morphology and in that they prototypically refer to groups as a whole rather than to multiple members within a group. Collective constructions in Mambay are signalled in two ways: prefixation with **tì-** (5.6.1), and use of inherently collective nouns (5.6.2).

5.6.1 The human collective prefix **tì-**

The human collective prefix **tì-** is used with names of social groups, such as ethnic groups, clans, inhabitants of a locality, and religious groups. Ethnic groups include:

tì-byúù	the Guidar people (cf. byúù ‘(locality name)’)
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tì-hàwsà	the Hausa people
tì-káà-byàá	white people (cf. káálà / káà ‘head, reason, on’; byàá ‘water’)
tì-làkà	southern Chadians (especially Laka, Ngambay, Sara)
tì-làgá ~ tì-làgzá	the Mundang people (cf. làgá ‘lie (n.)’ / pl. làgzá)
tì-màmbày	the Mambay people
tì-ná-syàá	white people (cf. ná-syàá ‘fire, gun’)
tì-zàmí	the Fulbe people

Mambay clans (5.12.2) include:

tì-gáà	the gáà clan
tì-kàḍgà	the kàḍgà clan
tì-sàù-búúrà	the sàù-búúrà clan
tì-tàrà	the tàrà clan

Inhabitants of localities (see 5.12.1.4 for discussion of locality names) include:

tì-bèè-pàhnà	inhabitants of Beepahna
tì-káà-kààlá	inhabitants of Kaakaala
tì-káà-sî	inhabitants of the Mambay area (cf. káálà / káà ‘head, reason, on’; sî ‘valley, river’)
tì-zé’gà	inhabitants of the mountain (cf. zé’gà ‘mountain’)

Adherents to Islam and Christianity, the two major religious groups, are labelled in various ways. Muslims are referred to as follows:

tì-ʔìzlâm	(cf. Arabic <i>islām</i> and Fr. <i>islam</i>)
tì-m̀j̀z̀l̀m̀ḥ̀	(cf. Fr. <i>musulman</i>)
tì-z̀m̀-ʔ̀j̀ǹỳ	(cf. z̀m̀ ‘hit (v.n.)’; ʔ̀j̀ǹỳ ‘forehead, front’)

Christians are referred to as follows:

tì-ʔ̀í-ʔ̀í-k̀è̀t̀í	(cf. ʔ̀í- ‘house,’ ʔ̀í-k̀è̀t̀í ‘God’)
tì-k̀ìr̀íz ~ tì-k̀r̀íz̀t̀ù	(cf. Fr. <i>christ</i>)
tì-m̀j̀sỳḥ̀	(cf. Fr. <i>mission</i> via Fulf. <i>misyoŋ</i>)
tì-nj̀ápá	(cf. Sango / Fulf. <i>njapa</i> ‘mission’) (Eguchi 1971:186)

The prefix ʔ̀í- (5.10) lends emphasis to the identity of the group.

tì-ʔ̀í-m̀àmb̀ỳ ~ t̀ì m̀àmb̀ỳ	those who are Mambay people
COLL-HEAD-Mambay ~ COLL:HEAD Mambay	
cf. t̀ì-m̀àmb̀ỳ	the Mambay people
COLL-Mambay	

As the above example shows, the emphatic form of collective nouns has two possible realizations; both of these are formed with **tì-** and the prefix **?ì-** (5.10). While the first form (**tì-?ì-màmbày**) is more phonologically regular, it is the second form (**tì màmbày**) which is almost always used, even in formal contexts. The absence of the glottal stop in **tì** is significant in this morphological context, since it persists in segmentally comparable constructions such as **tì-?ìzlám** ‘Muslims’ (see above in this section).

tì appears frequently as the collective form of male/generic and female participant nouns (5.7).

singular form		collective form
páà fâh	messenger	tì fâh
man:LF path		messengers / those who COLL:HEAD path are messengers
páà vbù nàmá	butcher	tì vbù nàmá
man:LF cut:VN animal/meat		butchers / those who are COLL:HEAD cut:VN butchers animal/meat
(tí-)vín bùù séđgà	potter (female	tì bùù séđgà
(AUG-)woman: profession)		COLL:HEAD build:VN- potters clay.cooking.pot
LF-build:VN- clay.cooking.pot		

5.6.2 Inherently collective human nouns

There is a handful of inherently collective nouns which refer to social groups. These nouns, which contain a historical derivational suffix **-(g)VrV** (see 5.1.3.2), are as follows:

?àzgàrà	reciprocal social unit (see Glossary)	cf. ?ázi ‘member of ?àzgàrà
fàzàrà	reciprocal social unit (see Glossary)	cf. fàzì member of fàzàrà
fàhzàrà	reciprocal social unit (see Glossary)	cf. fàhzì member of fàhzàrà
màngàrà	age-group	cf. màn age-mate
nàngàrà	maternal uncles	cf. nànà ‘maternal uncle

5.7 Participant noun constructions

Participant noun constructions are used to identify people and objects by what they do or, more broadly, things by which they are identified. These constructions are described separately in this study because of their productivity in spontaneous constructions, their important contribution to the lexicon (well over one hundred items in the data), and because they are formed by two distinct means: possessive constructions and prefixation.

Participant noun constructions are of three types in Mambay: male/generic (5.7.1), female (5.7.2) and non-human (5.7.3).

As is the case in many African languages (Dimmendaal 2000:170), participant nouns in Mambay are typically found as possessed head nouns in the context of possessive constructions. This is true of all three types (male/generic, female and non-human). An additional and equivalent female participant noun construction in Mambay involves the addition of a prefix to a noun. Possessor nouns which follow the possessed noun or prefix are commonly, but not exclusively, verbal nouns (cf. 5.9.1). Participant nouns may have either an agentive or a patientive role in relation to verbal nouns.

Participant nouns employ varied pluralization and collective strategies (5.7.4).

5.7.1 Male/generic participant nouns

Male/generic participant noun constructions are formed by inserting the noun **páà** ‘man, father, owner’ in the possessed-noun position of a possessive construction. The prototypical usage of **páà** as an alienable noun is that of ownership:

páà ʔígà	owner
man:LF thing	

Although **páà** is typically used for male referents, and Mambay speakers consistently give the gloss ‘man, father,’ it may also be used generically:

páà bîn	another person (male or female)
man:LF another	

páà só’lí ʔì-vínà	female boss (cf. páà só’lé ‘master, lord’)
man:LF greatness:LF HEAD-woman	

A wide representation of syntactic possibilities is found with male/generic participant nouns, which comprise about two-thirds of the participant nouns in the data. Participant noun constructions composed of **páà** and a typical (i.e., non-verbal) noun are illustrated by the following examples:

páà òìgì	neighbour	cf. òìgì neighbourhood
páà fâh	messenger	cf. fâh path
páà ʔígà	owner	cf. ʔígà thing
páà káálà	guide	cf. káálà head, reason
páà rẹ̀hba	poor man	cf. rẹ̀hba poverty
páà sònḡó	old man	cf. sònḡó old age

Constructions involving other components are as follows:

páà + verbal noun:	páà sũm-ná	acquaintance
	man:LF know:VN-OBJ	

páà + compound noun: **páà tí-vín húdò** widower (cf. **tí-vín húdò** ‘dead woman’)
man:LF AUG-woman:LF die:VN

páà + prepositional phr.: **páà bèè káálà** stupid person
man:LF without head

páà + adjective: **páà gbéndén** dwarf
man:LF short

páà + nominalized adv.: **páà tùm** guide
man:LF forward

Of the various participant noun constructions, those containing verbal nouns are the most common. In all cases, the participant noun is the subject of the verb (whatever the semantic role of the subject in relation to the verb):

páà húdò dead person
man:LF die:VN

páà pààrá farmer
man:LF cultivate:VN

páà ryáhrà caller, wailer
man:LF cry:VN

páà tígrò falling person
man:LF fall:VN

For regular verbal nouns derived from transitive verbs, an object (either explicit or the dummy object suffix **-nà**; cf. 5.9.1.1) always accompanies the verbal noun.

páà sàh ?ígà musician
man:LF play:VN thing

páà kòg kyǎ’ diviner, fortune-teller, prophet
man:LF see:VN situation

páà vbù nàmá butcher
man:LF cut:VN animal/meat

páà gêy-nà boaster
man:LF boast:VN-OBJ

páà hìh-nà coward
man:LF fear:VN-OBJ

páà sôg-ná

man:LF send/order:VN-OBJ

messenger

5.7.2 Female participant nouns

Female participant noun constructions may be formed in one of two ways: by inserting the noun **vínà** ‘woman’ or its respect form (cf. 5.8.2) **tí-vínà** in the possessed-noun position of a possessive construction; or by attaching an augmentative/female prefix **tí-** (cf. 5.8.2) to a noun.

(tí-)vín sôm-ná	=	tí-sôm-ná	female
acquaintance			
(AUG-)woman:LF know:VN-OBJ	=	woman:AFX-know:VN-OBJ	

The two forms appear to be interchangeable, although it is possible that **(tí-)vínà** may be associated with more formal speech or used to focus on the female identity of the participant.

Participant noun constructions composed of **(tí-)vínà** / **tí-** and a typical (i.e., non-verbal) noun are illustrated by the following examples:

(tí-)vín ògì / tí-ògì	female neighbour	cf. ògì neighbourhood
(tí-)vín só'lé / tí-só'lé	first wife	cf. só'lé greatness

Constructions involving other components are as follows:

(tí-)vínà ~ **tí-** + verbal noun:

(tí-)vín sôm-ná	=	tí-sôm-ná	female acquaintance
(AUG-)woman:LF know:VN-OBJ	=	woman:AFX-know:VN-OBJ	
(tí-)vín bùù sédǵà	=	tí-bùù sédǵà	potter (female profession)
(AUG-)woman:LF build:VN clay.cooking.pot	=	woman:AFX-build:VN clay.cooking.pot	

(tí-)vínà ~ **tí-** + compound noun:

(tí-)vín káà pít	=	tí-káà pít	prostitute
(AUG-)woman:LF head:LF adultery	=	woman:AFX-head:LF adultery	
(tí-)vín m̀h sigró	=	tí-m̀h sigró	first wife
(AUG-)woman:LF centre:LF land	=	woman:AFX-centre:LF land	

(tí-)vínà ~ tí- + adjective:

(tí-)vín sâ'	= tí-sâ'	elderly woman
(AUG-)woman:LF elderly	= woman:PFX-elderly	

5.7.3 Non-human participant nouns

Non-human participant noun constructions are formed by inserting the noun **?ígà** 'thing' in the possessed-noun position of a possessive construction.

Almost all non-human participant noun constructions in the data involve a verbal noun derived from a transitive verb. The participant **?ígà** can be the subject or object of a verbal noun. Subject status is evident in the following constructions:

?íg bù' dígùnù	nausea
thing:LF gather.up:VN liver	

?íg kàm zírmin	loom
thing:LF weave:VN cloth	

?íg kpǔg-nà	saw (n.)
thing:LF saw(v.):VN-OBJ	

?íg pǎh-nà	plan
thing:LF plan:VN-OBJ	

The object status of **?ígà** is evident in the following constructions (since **?ígà** is co-referential with the dummy object suffix **-nà**):

?íg dǒg-nà	drink (n.)
thing:LF drink(v.):VN-OBJ	

?íg fú' rì-nà	swelling
thing:LF swell:VN-OBJ	

?íg sàá-nà	tribute
thing:LF pay.tribute:VN-OBJ	

?íg sùm-nà	knowledge
thing:LF know:VN-OBJ	

The only attested non-human participant noun constructions involving components other than verbal nouns are as follows:

?ígà + compound noun:	?íg kàà sùgò	earring (cf. kàà sùgò 'top of ear')
	thing:LF head:LF ear	

?ígà + prepositional phr.: **?íg sàà wàà** nose ring
 thing:LF inside nose

?ígà + nominalized adv.: **?íg sùgú** that which is below / the bottom thing
 thing:LF below

5.7.4 Pluralization and collective strategies

Participant nouns employ various pluralization and collective strategies, depending on whether they are male/generic, female or non-human.

The male/generic participant **pàà** may not be pluralized. Instead, Mambay speakers use collective constructions with the generic human collective participant **tù** (= **tù** + **?ì**; see 5.6.1) ‘those [who are] of’:

pàà fâh man:LF path	messenger	tù fâh COLL:HEAD path	messengers
pàà vbù nàmá man:LF cut:VN animal/meat	butcher	tù vbù nàmá COLL:HEAD cut:VN animal/meat	butchers

The female participant (**tí-****vínà** ~ **tí-** has two possibilities available. If the female identity of the participants is significant, the plural noun (**tí-****gérêm** (an irregular plural of (**tí-** **vínà**; see 5.5.2.2) is employed ((**tí-****vínà** is used in the examples here, but its short form **tí-** is equivalent; see 5.7.2).

(tí-)vín dìgì (AUG-)woman:LF neighbourship	female neighbour	(tí-)gérêm dìgì (AUG-)women:LF neighbourship	female neighbours
(tí-)vín bùù sédǵà (AUG-)woman:LF build:VN clay.cooking.pot	potter (female profession)	(tí-)gérêm bùù sédǵà (AUG-)women:LF build:VN clay.cooking.pot	potter women

However, if the female identity of the participants is incidental, the human collective participant **tù** is employed:

(tí-)vín dìgì (AUG-)woman:LF neighbourship	female neighbour	tù dìgì COLL:HEAD neighbourship	neighbours (who happen to be female)
(tí-)vín bùù sédǵà (AUG-)woman:LF build:VN clay.cooking.pot	potter (female profession)	tù bùù sédǵà COLL:HEAD build:VN clay.cooking.pot	potters

The non-human participant **ʔígà** ‘thing’ is usually used with verbal nouns (cf. 5.9.1), which are often not countable (5.5.1.2). In such cases, the noun resists pluralization, and no collective construction is available (cf. the human collective participant in the examples earlier in this section).

ʔíg sàá-nà	tribute	—	tribute (pl.)
thing:LF pay.tribute:VN-OBJ			
ʔíg sùm-ná	knowledge	—	knowledge (pl.)
thing:LF know:VN-OBJ			

In cases where participant nouns constructed with **ʔígà** ‘thing’ are countable, **ʔígà** is pluralized (cf. 5.5.2.4).

ʔíg kàm zǐrmìn	loom	ʔígzì kàm zǐrmìn	looms
thing:LF weave:VN cloth		thing:PL:LF weave:VN cloth	
ʔíg kpǔg-nà	saw	ʔígzì kpǔg-nà	saws
thing:LF saw(v.):VN-OBJ		thing:PL:LF saw(v.):VN-OBJ	

5.8 Diminutives and augmentatives

Diminutive and augmentative strategies are both available in Mambay. While diminutive derivations (5.8.1) employ compounding (5.4), augmentative derivations (5.8.2) employ prefixation (5.1.2).

5.8.1 Diminutives

Diminutives are a productive means of expressing small (or diminutive) size and/or specificity. They are formed by coupling **ʔígà** ‘child’ with another noun in the context of a possessive construction (5.3.3.3.1). Diminutives expressing small size include the following phrases:

base noun		diminutive	
b̂ɲ	forest	ʔíg b̂ɲ	thicket
fíìlò	house	ʔíg fíìlò	small house
kpèègá	tree	ʔíg kpèègá	bush
vúù	goat	ʔíg vúù	goat kid

Diminutives expressing specificity include the following phrases:

ká’	here (n.)	ʔíg ká’	right here (n.)
kǔ	there (n.)	ʔíg kǔ	right there (n.)

Diminutives which have been lexicalized as compound nouns include the following:

héerì nà-syàá	coal	bìg héerì nà-syàá	spark
kyǎh	fish	bìg kyǎh	nile perch
màhba	concubinage, adultery	bìg màhba	betrothal
tì-nà-mùùrǎ	jinn, totem, vision	bìg tì-nà-mùùrǎ	butterfly

Plural diminutives are formed with **bèlà** ‘children,’ the plural form of **bìgà** (see 5.5.2.2).

bìg héerì nà-syàá	spark	bèl héerì nà-syàá	sparks
bìg kpèègá	bush	bèl kpèègá	bushes
bìg tì-nà-mùùrǎ	butterfly	bèl tì-nà-mùùrǎ	butterflies
bìg vúù	goat kid	bèl vúù	goat kids

Plural diminutives may also be used with nouns referring to small things, even when their base forms are not otherwise pluralizable (cf. 5.5.1). This type of construction emphasizes small or diminutive size as well as the plural nature of the things.

bǎh	rain	bèl bǎh	drizzle
féévbà	pair of twins	bèl féévbà	twins
?ìg gógrà	flying insect	bèl ?ìg gógrà	flying insects
kúmù	herder (boy)	bèl kúmù	herders
nà-gbún-gbâ’	tadpole	bèl nà-gbún-gbâ’	tadpoles
sí-sî	waxbill (bird sp.)	bèl sí-sî	waxbills
zàà fâh yá	shrew sp.	bèl zàà fâh yá	shrews (sp.)

5.8.2 Augmentatives

Augmentatives are a productive means of expressing large (or exaggerated) size and/or respect. They are formed by attaching the prefix **tí-**, which likely originates in the words **túù** ‘mother’ and/or **tîrà** ‘matron’ (cf. 5.1.2.4.11). (This prefix has two other functions, one of which marks female participant nouns (5.7.2) and one of which is obligatorily found as a part of specific nouns (5.1.2.4.11)). Augmentatives expressing large size include the following examples:

base noun		augmentative	
byàá	water	tí-byàá	large water-body
kyǎh	fish	tí-kyǎh	large fish
kpèègá	tree	tí-kpèègá	large tree
sùgá	spear	tí-sùgá	large spear

Augmentatives expressing respect are found with nouns denoting females, including canonical female personal names (cf. 5.12.1.1). This accords well with the ‘female’ sense of the prefix which is found in female participant nouns (5.7.2). Augmentatives expressing respect include the following examples:

base noun		augmentative (respect form)
?ázi´	member of ?àzgàrà (see Glossary)	tí-?ázi´
dèví	(female proper name)	tí-dèví
nàgá	(female proper name)	tí-nàgá
nà-vínù	co-wife	tí-nà-vínù
vínà	woman	tí-vínà
má-nâ´	man's mother-in-law	tí-má-nâ´

An augmentative semantic value is also evident in many nouns which are obligatorily found with the suffix **tí-** (5.1.2.4.11). In such cases, however, the semantic association between the base noun and the augmented form is often much more general than one of proportion or respect; in some cases, it approaches the female- or “mother”-type participant noun function of the prefix (5.7.2, 5.1.2.4.11).

base noun		lexicalized augmentative
figò	flea	tí-figò duck
gyáàlá	nanny	tí-gyáàlá maternal aunt
húfò	death	tí-húfò Death (personified)
kúù	fields, bushland	tí-kúù fields, bushland
níjìnà	lower millstone, mill	tí-níjìnà molar
sígò	crocodile	tí-sígò fetish against thievery
sìgró	land	tí-sìgró world
sòdògá	hotness, smithy	tí-sòdògá anvil
twǎh	snake	tí-twǎh python
vúù	goat	tí-vúù antelope sp.

5.9 Verbal nouns

Verbal nouns fall into two major categories: true verbal nouns, which participate in productive noun/verb derivational processes (5.9.1) and those which are fossilized: such nouns show evidence of historical noun/verb derivation but do not participate in such derivation synchronically (5.9.2). In both cases, derivation is responsible for endowing them with the action-centred semantic contribution typical of Mambay verbs (Chapter 7).

5.9.1 True verbal nouns

True verbal nouns (henceforth referred to simply as verbal nouns) exhibit characteristics of nouns as well as verbs (Chapter 7). They are semantically predictable in that they minimally refer to a verbal action or state which is brought about by the subject (whether agent or another role) (cf. fossilized verbal nouns; see 5.9.2).

verbal noun		verb stem
búù	sprouting	búú sprout
dáàrà	alighting	dàà alight
dād	sowing, planting	dād sow, plant

púgvbì	scattering	pùgvbí	scatter
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As regards their status as nouns, they exhibit the distributional possibilities of other nouns with similar semantic values (ex. 5.3.3.3.1, 5.5). For example, they may be possessed (5.3.2).

verbal noun		possessed form	
húḍò	dying, death	húḍ ʔíí	my dying/death die:VN 1SG.POSS
		húḍ nàmá	animal's dying/death die:VN animal

Structurally, verbal nouns pattern with nouns in that they are minimally comprised of a heavy syllable or two light syllables; this contrasts with verbs, since in the data there are fifteen examples of verb roots comprised of a light syllable. In fact, a compensatory **g** is inserted for verbal nouns derived from verb roots comprised of a light syllable (2.4.3, 7.1.1):

verbal noun		verb stem	
dòg	drinking	dó	drink
pàg	doing	pá	do

However, verbal nouns also exhibit some characteristics of verbs. By definition, all verbal nouns correspond to finite verb roots, with which they are found in derivational relationship. While complexities of derivation are discussed in the sections devoted to each type of verbal noun (5.9.1.1 and 5.9.1.2), some general observations underline the verb-like behaviour of verbal nouns. Importantly, verbal nouns are used in the Mambay verbal system, where with subject pronouns they express the verbal function of the Imperfective (7.4.1.1.2). A comparable situation is found in the well-known case of Hausa (Dimmendaal 2000:171, Newman 2000:288–92) and in Kébi-Benue languages such as Mundang (Elders 2000:327–30).

verbal noun		Imperfective verb form	
ḍáárà	alighting	mì ḍáárà	I alight / I am alighting 1SG alight:VN
húḍò	dying, death	mì húḍò	I die / I am dying 1SG die:VN

The verbal nature of such constructions is further underlined by the possibility of their accompaniment by adverbs (8.1).

rì húdò búvbùvbù
1PL die:VN IDEO

we (excl.) are dying *buvbuvbu* (i.e., left and right)

Syntactically, there is a further resemblance to verbs, namely: verbal nouns which correspond to transitive verbs must be accompanied by an object or a dummy object suffix (7.3.2.1.2).

verbal noun		verbal noun with object	
*kòg Ø	*seeing	kòg ?ígà	seeing something
see:VN		see:VN thing	
		kǒg-nà	seeing (something)
		see:VN-OBJ	

In one context, verbal nouns exhibit obviously verbal morphology: when an explicit plural subject is invoked in the Imperfective, the verbal plural affix **-zí** (7.3.1.1) is attached following the first syllable of the verbal noun (7.4.1.1.2).

verbal noun		Imperfective verb form	
ḍáárà	alighting	nà ḍáá-zí-rà	we (incl.) alight / we (incl.) 1&2 alight:VN-PL-VN are alighting

Verbal nouns are subdivided into the structurally regular transitive verbal nouns (5.9.1.1) and the structurally irregular intransitive verbal nouns (5.9.1.2).

5.9.1.1 Regular verbal nouns

Regular verbal nouns are productively derived from transitive verbs stems; this is an instance of what Payne (1997:224–5) calls action nominalization. Regular verbal nouns are typically comprised of the same segmental content as corresponding stems (given here as basic Perfective verb forms; see 7.4.1.1.1.1).

verbal noun		verb stem	
ḍâḍ	sowing, planting	ḍâḍ	sow, plant
gyàh	sewing, hemming	gyáh	sew, hem
gbóógì	enlarging, widening	gbòògí	enlarge, widen
púgvbì	scattering	pùgvbí	scatter
yàh	calling, inviting	yáh	call, invite
?ùù	whistling	?ùù	whistle

(Like their source stems, regular verbal nouns require an object or dummy object suffix to follow; see the previous section and 7.4.3.1.2. This object is not shown in present discussion except when it is being directly addressed.)

This regular segmental correspondence includes most (but not all) **g**-final verbal nouns:

b̀àg	meeting, supporting	b̀ág	meet, support
gb̀ùg	throwing	gb̀úg	throw
v̀òg	watching, guiding	v̀óg	watch, guide
ʔ̀ìg	killing	ʔ̀íg	kill
(etc.)			

There are, however, eight (otherwise) regular **g**-final verbal nouns in the data which differ from the segmental content of the corresponding verb stems. Seven of the eight exceptions are derived from verbs comprised of a C(C)V syllable, which does not meet the minimal two-mora weight requirement for nouns (5.1.1.1). It appears, therefore, that **g** has for the most part been inserted as a compensatory measure. These verbal nouns are as follows:

verbal noun		verb stem	
ǹùg	sleeping (tr.)	ǹú	sleep (tr.)
d̀òg	drinking	d̀ó	drink
h̀ìg	giving	h̀íí	give
k̀òg	seeing	k̀ó	see
kỳàg	hurting	kỳé	hurt (tr.)
p̀àg	doing	p̀á	do
sỳàg	shining	sỳé	shine
ʔ̀ìg	knowing	ʔ̀í	know

The tone melody of regular verbal nouns is distinct from that of corresponding verb stems. Regular verbal nouns exhibit two possible melodies: L and HL. Regular verbal nouns with L tone may be derived from verbs with either H-toned (Class 1) or L-toned (Class 4; see 7.3.2.2.1) stems.

verbal noun		verb stem	
d̀ùḡ	bending down	d̀úḡ	bend down
f̀òò	spying, reviewing	f̀óó	spy, review
m̀àḡ	giving an opinion	m̀àḡ	give an opinion
p̀ìʔ	transplanting	p̀ìʔ	transplant

In contrast, heavy (two-mora) HL regular verbal nouns are always derived from verbs with L-toned stems (Class 5), and HL regular verbal nouns with three or more morae are derived from verbs with LH stems (Class 6).

verbal noun		verb stem	
b̀ùl	dividing	b̀ùl	divide
s̀în	picking up tiny things	s̀ìn	pick up tiny things

gíín	persuading	gíín	persuade
rímri	immersing	rímri	immerse

Verbal nouns derived from transitive verbs are always accompanied by an object. This object may be expressed:

bûl tà-tàhrgù	dividing a rock pile	dòg byàá	drinking water
divide:VN PFX-rock.pile		drink:VN water	
ďáď bà'rá	sowing seed	yàh vwáà	calling a dog
sow:VN seed		call:VN dog	

If the object is not expressed, the suffix **-nà** acts as a dummy object. If the verbal noun to which it is attached is L-toned, the resulting word has a LHL melody.

verbal noun	verbal noun w/ dummy object	
dòg	dǒg-nà	drinking (something)
fòò	fóó-nà	spying (something)
gòò	góó-nà	preparing (something)
pì'	pǐ'-nà	transplanting (something)

If the verbal noun is HL-toned, the resulting word has a HLH melody.

bûl	bûl-nà	dividing (something)
ďáď	ďáď-nà	sowing (something)
gwáà	gwáà-nà	robbing (something)
hàgrì	hàgrì-nà	shattering (something)

As the examples above show, the dummy object suffix's nasality does not travel leftward into the verbal noun.

The apparently polar tonal behaviour of **-nà** is addressed in the following subsection (5.9.1.1.1). This is followed by a discussion of the function of regular verbal nouns as Imperfective verb forms (5.9.1.1.2).

5.9.1.1.1 Tonal behaviour of **-nà**

A simple explanation for the polar tonal behaviour of **-nà** has not been reached. However, it is probable that it underlyingly bears a contour (HL or LH) melody.

It is possible that **-nà** is underlying HL. If this is the case, its melody is fused with that of L-toned verbal nouns as follows:

verbal noun	dummy object		verbal noun word
fòò	+	-nà	→ fóó-nà spying (something)

gbùg + **-nâ** → **gbǔg-nâ** throwing (something)

With HL verbal nouns, the process would take place as follows:

bûl + **-nâ** → **bûl-nâ** dividing (something)
dâd + **-nâ** → **dâd-nâ** sowing (something)

This implies the deletion of the final L tone of **-nâ**, which never surfaces with a HL verbal noun. Since, in these examples, there are only three tone-bearing units on the resulting verbal noun word, it is not unreasonable to posit the lexical deletion of an excess fourth tone (cf. 4.3.1.4). Comparable situations are attested elsewhere in the language (e.g., a HLH melody on two-mora nouns; see 4.1.2.2). However, in stems with sufficient tone-bearing units, there is no evidence that this hypothetical final L tone is ever associated.

expected realization	actual realization	
*yáàń-nâ	yááń-nâ	cause (something) to finish
*ʔóògí-nâ	ʔóógí-nâ	set (something) crawling

Alternatively, if **-nâ** were considered underlying LH, more assumptions must be accepted. First of all (similar to what is described in the HL explanation above), the melody of HL verbal nouns would have to have fused with that of the LH suffix **-nǎ**, resulting in a single HLH word.

bûl + **-nǎ** → **bûl-nâ** dividing (something)
dâd + **-nǎ** → **dâd-nâ** sowing (something)

The LH identity of **-nâ** would be more difficult to account for with the other (“L-toned”) verbal nouns. It is possible that the underlying tone of what are described above as L-toned verbal nouns is actually LH, even though the H portion of the melody only surfaces when **-nâ** replaces the explicit object. The loss of the LH verb’s H tone when accompanied by an explicit object would be seen as parallel to the attested loss of any LH possessed noun’s H tone in the context of the possessive construction (see 5.2.2.1). If this were the case, the verbal noun data throughout would be re-presented as follows:

verbal noun	verbal noun w/ explicit object	
fòó	fòò ...	spying (something)
gbǔg	gbùg ...	throwing (something)

The result of affixation with **-nǎ** would be as follows:

fòó + **-nǎ** → **fòó-nâ** spying (something)
gbǔg + **-nǎ** → **gbǔg-nâ** throwing (something)

Still, the final H of **-nǎ** never surfaces. But since there are only three morae on the resulting verbal noun word, and since (in contrast to HLH verbal noun words; see above) there are no examples in the data of LHL verbal noun words with more tone-bearing units than this, it is not unreasonable to posit the lexical deletion of an excess fourth tone (4.3.1.1). Comparable situations are attested elsewhere in the language (e.g., a three-tone melody on two-mora nouns; see 4.1.2.2).

An underlying H melody for **-nǎ** is harder to defend, but should also be considered. As in the previous hypothesis, affixation with HL nouns would be straightforward.

fûl	+	-nǎ	→	fûl-nǎ	dividing (something)
ďâď	+	-nǎ	→	ďâď-nǎ	sowing (something)

Still, and also as in the previous hypothesis, what are described above as L-toned verbal nouns would have to be considered LH in order to pursue an account in which **-na** was H-toned:

verbal noun		verbal noun w/ explicit object		
fòó		fòò ...		spying (something)
gbǔg		gbùg ...		throwing (something)

With LH verbal nouns, it is possible that Meeussen's rule (see Meeussen 1965:110 and Goldsmith 1984) causes a H-toned **-nǎ** suffix to be realized as L after H:

fòó	+	-nǎ	→	fòó-nà	spying (something)
gbǔg	+	-nǎ	→	gbǔg-nà	throwing (something)

The major weakness of this explanation is that such a process has not been observed elsewhere in the language (merging of H tones is the norm in other phonological words; for an example, look at inalienable noun-pronoun constructions in 5.3.4.2.4.1).

Because of the complexity of these arguments, the tonal identity of **-nǎ** is accounted for throughout as part of lexical HLH and LHL melodies on words composed of a verbal noun + **-nǎ**.

5.9.1.1.2 Imperfective function of regular verbal nouns

Apart from their basic nominal status, regular verbal nouns function as Imperfective verb forms (7.4.1.1.2).

verbal noun		Imperfective form	
dòg	drinking	mì dòg ?ígà	I drink something / I am drinking something
		mì dǒg-nà	I drink (something) / I am drinking (something)
		1SG drink:VN-Obj	

As stated above (5.9.1), the verbal behaviour of verbal nouns in this context is further underlined by the possibility of their accompaniment by adverbs (8.1).

mì dòg ?ígà hári	I drink something quickly / I am drinking something quickly
1SG drink:VN thing quickly	
mì dǒg-nà hári	I drink (something) quickly / I am drinking (something) quickly
1SG drink:VN-Obj quickly	

In one context, regular verbal nouns exhibit obviously verbal morphology: when an explicit plural subject is invoked in the Imperfective, the verbal plural affix **-zí** (7.3.1.1) is attached following the final syllable of the regular verbal noun.

nà dòg-zí ?ígà hári	we (incl.) drink something quickly / we (incl.) are drinking something quickly
1&2 drink:VN-PL thing quickly	
nà dòg-zí-nà hári	we (incl.) drink (something) quickly / we (incl.) are drinking (something) quickly
1&2 drink:VN-PL-Obj quickly	

5.9.1.2 Irregular verbal nouns

Irregular verbal nouns correspond to intransitive verbs stems. In addition to their intransitivity (cf. 7.3.2.1), they differ from regular verbal nouns (5.9.1.1) in their derivational behaviour.

Importantly, there is no synchronic process by which irregular verbal nouns are derived from verb stems. Historically, irregular verbal nouns appear to have undergone a historical wave of unevenly applied derivational suffixation along with the rest of the nouns in the language (5.1.3.2; this has been further described in Anonby 2008). This process has resulted in irregular, lexicalized verbal nouns as follows:

verb stem	vestigial suffix	irregular verbal noun
dàà ‘alight’	+ *-rV	→ dáàrà ‘alighting’
tè ‘walk’	+ *-lV	→ té’là ‘walking’
sùù ‘lie down’	+ *-gV	→ súngà ‘lying down’

To a large degree, then, irregular verbal nouns represent the most common noun shapes (cf. 5.1.1.1). The five attested CV shapes of irregular verbal nouns in the data are as follows:

CV shape	irregular verbal noun		corresponding verb stem
CVV	gùù	flowing, flow (n.)	gúú flow (v.)
CV.CV	gélà	getting lost	gé get lost
CVV.CV	ḏáárà	alighting	ḏàà alight
CVC.CV	fímrò	weighing	fím weigh (intr.)
CCVV.CV	gyáárà	foaming up	gyàà foam up

Tonally, irregular verbal nouns are mostly HL, but occasionally LH.

tone melody	irregular verbal noun		corresponding verb stem
HL	gùù	flowing, flow (n.)	gúú flow
	gélà	getting lost	gé get lost
	ḏáárà	alighting	ḏàà alight
	fímrò	weighing	fím weigh (intr.)
LH	ḏààrá	fighting, fight	ḏàà fight (intr.)
	kùùbá	dreaming, dream	kùù dream
	lààbá	eating, food	làà eat (intr.)
	sòglá	working, work	sóg work (intr.)

As is the case with regular verbal nouns, irregular verbal nouns function as Imperfective verb forms (7.4.1.1.2).

verbal noun		Imperfective verb form
ḏáárà	alighting	mì ḏáárà I alight / I am alighting 1SG alight:VN
húḏò	dying, death	mì húḏò I die / I am dying 1SG alight:VN

As stated above (5.9.1), the verbal nature of verbal nouns in this context is further underlined by the possibility of their accompaniment by adverbs (8.1).

rì húḏò búvbùvbù	we (excl.) are dying <i>buvbuvbu</i> (i.e., left and right)
1PL die:VN IDEO	

As is the case with regular verbal nouns, morphological evidence for noun-to-verb derivation is found when an explicit plural subject is invoked in the Imperfective: the verbal plural affix **-zí** (7.3.1.1) is attached following the first syllable of the irregular verbal noun.

verbal noun

ḍáárà alighting

Imperfective form

nà ḍáá-zí-rà we (incl.) alight / we (incl.)
1&2 alight:VN-PL-VN are alighting

5.9.2 Fossilized verbal nouns

In addition to true verbal nouns (5.9.1), there are many fossilized verbal nouns which show segmental and semantic correspondences to specific verb stems. However, in other respects they are like nouns in general. Over one hundred fossilized verbal nouns have been identified in the data; this is out of a total of 1525 non-borrowed, lexicalized nouns. Fossilized verbal nouns correspond to transitive as well as intransitive verbs.

fossilized
verbal noun

fimgó weight
lóózirà tiredness
rámà blindness, blind person
sòògá hotness, smithy

intransitive
verb stem

fim weigh (intr.)
lóó get tired
ràà go blind
sòò get hot, boil

transitive
verb stem

kúmù herder
'mààzìlá respect
ròólè trick (n.), comedy
sù'gó ploughed land

kúm protect, guide, care for
'máá respect
ròò trick, amuse
sú' pull

Fossilized verbal nouns are like irregular true verbal nouns (5.9.1.2) in that there is no synchronic process by which they are derived from verb stems.

However, they differ from true verbal nouns (regular and irregular) in three important ways. First, fossilized verbal nouns cannot participate in verbal constructions, notably those involving Imperfective verb forms (cf. 7.4.1.1.2); second, although they exhibit more structural complexity than true verbal nouns, transitivity does not influence their structure; and third, they are semantically unpredictable.

In the subsections that follow, the morphological structure and semantic values of fossilized verbal nouns are described (5.9.2.1 and 5.9.2.2). Following this, the direction of historical noun/verb derivation is considered (5.9.2.3).

5.9.2.1 Morphological structure

The structures of fossilized verbal nouns are a significant subset of those found with nouns in general (5.1). The inventory of CV shapes of fossilized verbal nouns in the data is as follows:

CV shape	verbal noun		corresponding verb
CVV	wáh	cup	wàh water (v.)
CVC	nà-màm	opinion	màà give an opinion
CCVV	tì-ryâh	ululation	ryáh cry
CV.CV	kùmù	herder	kúm protect, guide, care for
CVV.CV	sòogá	hotness, smithy	đàà get hot, boil
CVC.CV	fimgó	weight	fim weigh (intr.)
CCVV.CV	gwàálá	thief, robbery	gwàà rob
CCVC.CV	nà-rwâđgá	joint	rwâđ dislocate
CVV.CV.CV	lóózirà	tiredness	lóó get tired
CVC.CV.CV	nà-vìgzìló	longing stare	víg plug, look longingly

Like irregular true verbal nouns (5.9.1.2), most or all fossilized verbal nouns have undergone a historical wave of unevenly applied derivational suffixation (Anonby 2008, 5.1.3.2; but see 5.9.2.3). However, the structure of fossilized verbal nouns is more varied. For example, while irregular true verbal nouns contain a maximum of two syllables (5.9.1.2), there are many fossilized verbal nouns with three-syllable stems.

Also, in addition to historically fused suffixes (5.1.3.2), there are also two semantically salient suffixes found principally with fossilized verbal nouns: **-(g)VrV** and **-zi**. **-(g)VrV** is a fused generic suffix found with nouns historically derived from intransitive verbs, and is described in 5.1.3.2. Examples of this suffix are:

fimgórò	heaviness	cf. fim weigh (intr.), fimgó weight
fùhgàrà	spreading of a smell	cf. fùh smell (v.); fùhgá smell (n.), stink
sòngórò	aging	cf. sòngí age (v.), sòngó old age
sòogàrà	heat	cf. sòò get hot, boil, sòogá hotness, smithy

The suffix **-zi**, which is formally reminiscent of the noun plural template (5.5.2.1), verbal plural person affix **-zí** (7.3.1.1) and the verbal extension **-zi** (7.2.4.4), appears to have a pluractional meaning when it is found in the context of fossilized verbal nouns. With a single exception (**lóózirà** ‘tiredness, difficulty’; see list below), it is found only in fossilized verbal nouns derived from transitive verbs.

pluractional verbal noun		corresponding verb
lóózirà	tiredness, difficulty	lóó get tired
nà-kyàhzilà	love	kyáh ask, love, praise
nà-pòòzilà	payment	pòò pay
nà-sà’zilà	congratulations	sá’ congratulate
nà-sìzilà	envy	sì covet
nà-sìhzilà	dislike	sìh hate, burn (tr.)
nà-sìjzilà	intense hatred	sìj hate intensely

nà-sògzilà	command	sòg	send, order, serve, pass on
nà-vìgziló	longing stare	víg	plug, look longingly
nà-zòòzilá	greetings	zóó	greet
'mààzilá	respect	'máá	respect

The above list reveals that in addition to fused suffixes, many fossilized verbal nouns contain obligatory prefixes (see 5.1.2 for a discussion of noun prefixes). These prefixes are not attested with irregular true verbal nouns (5.9.1.2). The prefix **nà-** is quite common with fossilized verbal nouns, and all fossilized verbal nouns with this prefix are derived from transitive verbs. The single example of a verbal noun with the prefix **tì-** is, in contrast, derived from an intransitive verb.

verbal noun		corresponding verb	
nà-?áwrá	yawn (n.)	?àw	yawn
nà-byàà	chewing	féé	bite
nà-kyáh	request, praise, begging	kyáh	ask, love, praise
nà-léngìrá	movement	lèngí	move, swing, shake
nà-lèyrá	grinding, command	lèy	groan, crash, order
nà-màm	opinion	màà	give an opinion
nà-'mùùrú	drawing, writing	'mùr	draw, write
nà-ryáà	wink	ríí	clean out, wink
nà-sáágìrá	flattery	sààgí	deceive, flatter
nà-sâh	request	sàh	ask, rip, play
tì-ryâh	ululation	ryâh	cry

Tonally, fossilized verbal nouns are also more varied than irregular true verbal nouns (5.9.1.2). HL, LH, HLH and LHL tone melodies, the first three of which are the most common melodies for nouns in general (5.1.1.2), are all found with fossilized verbal nouns.

tone melody	verbal noun		corresponding verb	
HL	gíirò	insult	gù	answer, accept, admit
	kúmù	herder	kúm	protect, guide, care for
	wâh	cup	wâh	water, grow (tr.), tame
LH	gbăh	tongs	gbáh	catch, thicken, befit
	fámgá	announcement	fám	announce, propagate
	nà-zòòzilá	greetings	zóó	greet
HLH	sá'gá	number	sá'	buy
	gyáàlá	nanny	gyàà	take out, gather up

	nà-léngìrá	movement	lèngí	move, sway
LHL	ròólè	trick (n.), comedy	ròò	trick, amuse
	gǎdlè	deaf person	gàḏ	be deaf
	fimgórò	heaviness	fim	weigh (intr.)

5.9.2.2 Semantic relationship with corresponding verbs

In contrast to true verbal nouns (5.9.1), fossilized verbal nouns are semantically unpredictable. True verbal nouns minimally refer to a verbal action or state which is brought about by the subject (whether agent or patient), and this is the case for some fossilized verbal nouns.

fossilized verbal noun		verb stem	
ḏáḏrá	sowing, planting	ḏàḏ	sow, plant
fùrù	piling dirt	fùr	pile dirt
nà-byáà	chewing	béé	chew
nà-zèḏ	mocking, mockery	zèḏ	mock, decorate
sì'lá	fishing	sí'	fish (v.)

However, many other fossilized verbal nouns centrally exhibit semantic roles such as the agent, patient, instrument, or location of the verb from which they have been historically derived. This is evident for the following examples of fossilized verbal nouns:

fossilized verbal noun		verb stem	
bòògàrà	bonus	bóó	hit
gógrà	bee, flock of birds	gòg	jump, fly, blow away
gwáàlá	thief; robbery	gwàà	rob
gyáàlá	medicine, fetish	gyáá	take out, gather up
kángà	male circumcision	kàn	pass, exceed, abuse
kùḏgó	apprentice	kùḏ	study, learn
kúmù	herder	kúm	protect, guide, care for
màh	granary	màh	gather together
nà-tú'	proverb	tú'	show, teach
nà-zù'ló	object which is thrown	zú'	throw, patch, add
pàhnà	mud, clay	pàh	wet (v.)
pò'lá	money	póó	pay
sù'ùbà	urine	sù'ù	urinate
vbàhrà	clod of earth	vbàh	share, divide
'wáàgá	cracks	'wáá	split

5.9.2.3 Direction of historical derivation

It is often difficult to establish the direction of historical derivation between fossilized verbal nouns and corresponding verb stems. In contrast to what happens with regular verbal nouns, whose derivation from verb stems is marked by the possibility of suffixation with the dummy object suffix **-nà** (5.9.1.1), there is no productive synchronic affixation on fossilized verbal nouns. Rather, as demonstrated by the previous sections (5.9.2.1, 5.9.2.2), the morphological structure and semantic value of fossilized verbal nouns is varied, and does not correspond systematically with related verb roots.

Obviously, there are two historical derivational possibilities for each pair: verb-to-noun, and noun-to-verb. On the one hand, it is technically possible that noun-to-verb derivation has taken place, and that verbs have been historically derived from corresponding nouns by means of CVC(CV) morphological templates.

(?)	gyáàlá	medicine, fetish	→	gyáá	take out, gather up
(?)	kúmù	herder	→	kúm	protect, guide, care for
(?)	nà-léngìrá	movement	→	lèngí	move, swing, shake
(?)	sòògá	hotness, smithy	→	sòò	get hot, boil

Most such verbs are monosyllabic and/or have H or L tone in their basic Perfective form. Synchronically, however, verbs which are demonstrably derived from nouns or any other part of speech are disyllabic and always have LH tone in their basic Perfective form (7.4.1.1.1.1).

gbòògá	wideness	→	gbòògí	enlarge, widen
kpàtgá	distance (n.)	→	kpàtgí	distance (tr.)
pǔ'	whiteness	→	pù'gí	become white
ràhbá	poverty	→	ràhbí	impoverish, become poor

This suggests that few or none of the corresponding noun/verb pairs categorized as fossilized verbal nouns reflect a historical noun-to-verb derivation (or, at least, one that functioned in the same way as the synchronic noun-to-verb derivation).

On the other hand, there are a couple of modest indicators of historical verb-to-noun derivation. One indicator is, with one exception, the limitation of fossilized verbal noun prefixes to **nà-** (5.9.2.1 above). This is very different from nouns in general, with which any of ten different prefixes may constitute an obligatory component (5.1.2.1). If many or most corresponding verbs were derived from nouns, a range of prefixes would likely be represented.

A second indicator of historical verb-to-noun derivation is the repeated occurrence of more than one noun corresponding to a single verb.

fossilized verbal noun		corresponding verb	
nà-kyáh	request, praise, begging	kyáh	ask, love, praise
nà-kyàhzilà	love		
sâ'gá	number	sá'	buy
sá'rà	price		
sòogá	hotness, smithy	sòò	get hot, boil
sòogàrà	heat		
vbâh	forked pole for shelters	vbáh	share, divide
ná-vbâh	distribution		
vbáhrà	clod of earth	vbàhrí	split (cf. vbáh 'share, divide' + -ri iterative/ intensive extension)
ná-vbáhrà	intersection		

Given the lack of evidence for most examples, the term “fossilized verbal noun” refers throughout this study to nouns for which there is a semantically related and segmentally similar verb form, even when the direction of derivation is difficult to demonstrate.

5.10 Modifier promotion and nominalization

The prefix **ʔi-** promotes modifiers from a number of word classes to the status of independent noun (cf. 5.14).

In the context of discourse, prefixation with **ʔi-** is the basic strategy used to emphasize modifiers. It promotes these dependent phrase elements to the place of a basic clause constituent: with **ʔi-**, a modifier is recast as an independent noun, and may be placed in apposition with a noun which (except in the case of directional adverbs; see below) it would have otherwise modified. This derivational process is shown here with possessor nouns, which modify head nouns (cf. 5.3):

noun phrase with head noun and modifier		promoted modifier in apposition with antecedent noun	
kpáhlì kpèègá	wood stool stool:LF tree/wood	kpáhlà ʔi-kpèègá	the <i>wood</i> stool (lit. the stool HEAD-tree/wood stool, the wood one)
và'zì bádâ	tamarind leaf leaf:LF tamarind	và'zá ʔi-bádâ	the <i>tamarind</i> leaf (lit. the leaf HEAD-tamarind leaf, the tamarind one)

Note that phrase-initial nouns followed by **ʔi-** and a modifying noun exhibit a free (unmarked) rather than linked noun morphology (5.3.3.3.1); this is evidence that the nouns are in apposition rather than in a head-dependent relationship.

When the modifier is something other than a noun or noun phrase, its promotion to the status of independent noun requires that this modifier be understood as nominalized.

kpèègì b́aráṅ	straight tree tree/wood:LF straight	kpèègá ?ì-b́aráṅ	the <i>straight</i> tree (lit. the tree/wood HEAD-straight tree, the straight one)
b́ìg b́ín	another child child:LF other	b́ìgà ?ì-b́ín	the <i>other</i> child (lit. the child HEAD-other child, the other one)

In the case of directional adverbs, the modifier has not been part of a noun phrase; it is simply nominalized and may be placed in apposition with an antecedent noun.

fàáàrì	backwards	fâh ?ì-fàáàrì	path HEAD-backwards the path <i>behind</i>
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Importantly, the first noun in apposition may be left implicit when **?ì-** attaches to and promotes any modifier.

promoted modifier in apposition with antecedent noun	promoted modifier with implicit antecedent concept
kpáhlà ?ì-kpèègá the <i>wood</i> stool stool:LF tree/wood	?ì-kpèègá that which is wood HEAD-wood
kpèègá ?ì-b́aráṅ the <i>straight</i> tree tree/wood HEAD-straight	?ì-b́aráṅ that which is straight HEAD-straight
fâh ?ì-fàáàrì the path <i>behind</i> path HEAD-backwards	?ì-fàáàrì that which is behind HEAD-backwards

Sometimes, the antecedent concept is not mentioned at all in a discourse.

mù yáh-rì	?ì-dò'dò'	you have taken that which is attractive
2SG take:PERF-PERF	HEAD-attractive	
mù pá ?ì-má fâh	do the right [thing] (lit. do the [thing] with path!)	
2SG:OPT do:OPT HEAD-with path		

Still, whether or not an antecedent concept is explicitly mentioned, the modifier to which **?ì-** is applied presupposes that such a concept is known to the listener; this lends it the effect of definiteness. As evident in the examples throughout the present section, this definiteness has been expressed in most glosses with 'the ... (one)' and, when the antecedent concept is implicit, 'that which is...' (i.e., the thing, the ... one).

The possibility that **ʔi-** is historically related to the noun **ʔígà** ‘thing’ is entertained earlier in this chapter, where **ʔi-** is described along with other noun prefixes (5.1.2.4.12).

The modifier promoted by **ʔi-** may be any one of the following:

- nouns (5.10.1);
- adjectives (5.10.2);
- directional adverbs (5.10.5);
- numerals (5.10.3);
- specifiers (5.10.4);
- prepositional phrases (5.10.6); and
- relative clauses (5.10.7).

5.10.1 Nouns

The prototypical application of the prefix **ʔi-** is to a possessor noun in a possessive construction.

noun phrase with head noun and modifier	promoted modifier in apposition with antecedent noun	promoted modifier with antecedent concept left implicit
ʔíg vb̀̀nà child:LF male(n.) male child	ʔígà ʔi-vb̀̀nà child HEAD-male(n.) the <i>male</i> child	ʔi-vb̀̀nà HEAD-male(n.) that which is male
kpáhlì kpèègá stool:LF tree/wood wood stool	kpáhlà ʔi-kpèègá stool HEAD-tree/wood the <i>wood</i> stool	ʔi-kpèègá HEAD-tree/wood that which is wood
và'zì bádà leaf:LF tamarind tamarind leaf	và'zá ʔi-bádà leaf HEAD-tamarind the <i>tamarind</i> leaf	ʔi-bádà HEAD-tamarind that which is tamarind
yèr kwéé clothing:LF Kwe male child	yèrí ʔi-kwéé clothing HEAD-Kwe the clothing of <i>Kwe</i>	ʔi-kwéé HEAD-male(n.) that which is Kwe's

This strategy is also used to promote possessive pronouns (5.3.3.3, 6.1.4) to the status of independent nouns:

và'zì ʔíí leaf:LF of.me my leaf	và'zá ʔi-ʔíí leaf HEAD-of.me <i>my</i> leaf	ʔi-ʔíí HEAD-of.me mine
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yèr ʔóró clothing:LF of.you (pl.) your (pl.) clothing	yèrí ʔì-ʔóró clothing HEAD-of.you (pl.) <i>your</i> (pl.) clothing	ʔì-ʔóró HEAD-of.you (pl.) yours (pl.)
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5.10.2 Adjectives

Adjectives (8.4) promoted to the status of independent noun with ʔì- are shown in the following examples:

fâh báráŋ path:LF straight straight path	fâh ʔì-báráŋ path HEAD-straight the <i>straight</i> path	ʔì-báráŋ HEAD-straight that which is straight
bèè gúrúrí water:LF deep deep water	byàá ʔì-gúrúrí water HEAD-deep the <i>deep</i> water	ʔì-gúrúrí HEAD-deep that which is deep

5.10.3 Numerals

Numerals (9.1) promoted to the status of independent noun with ʔì- are shown in the following examples:

fâh bàtì path two two paths	fâh ʔì-bàtì path HEAD-two the <i>two</i> paths	ʔì-bàtì HEAD-two the two / both [of them]
'màṛ zóḍôm friend ten ten friends	'màṛà ʔì-zóḍôm friend HEAD-ten the <i>ten</i> friends	ʔì-zóḍôm HEAD-ten the ten [of them]

5.10.4 Specifiers

Specifiers (9.2) promoted to the status of independent noun with ʔì- are shown in the following examples:

bíg bîn child:LF other another child	bígà ʔì-bîn path HEAD-other the <i>other</i> child	ʔì-bîn HEAD-two the other
'màṛ náá friend:LF this this friend	'màṛà ʔì-náá friend HEAD-this <i>this</i> friend	ʔì-náá HEAD-this this one

5.10.5 Directional adverbs

Directional adverbs (8.1.1), which (unlike other modifiers in this section) are not found in noun phrases, may also be promoted to the status of independent noun with ʔì-; this is shown in the following examples:

fààrí backwards	fâh ʔi-fààrí path HEAD-backwards the path <i>behind</i>	ʔi-fààrí HEAD-backwards that which is behind
kètí upwards	tálè ʔi-kètí roof HEAD-upwards the roof <i>above</i>	ʔi-kètí HEAD-upwards that which is above

5.10.6 Prepositional phrases

Prepositional phrases (9.3) promoted to the status of independent noun with ʔi- are shown in the following examples:

lààbí bèè kpâhngá eat:VN:LV without saltiness bland food	lààbá ʔi-bèè kpâhngá path HEAD-without saltiness the <i>bland</i> food	ʔi-bèè kpâhngá HEAD-without saltiness that which is bland
sòglí mǎ syâh eat:VN:LV with hand work done by hand	sòglá ʔi-mǎ syâh work HEAD-with hand work done <i>by hand</i>	ʔi-mǎ syâh HEAD-with hand that which is by hand

5.10.7 Relative clauses

Relative clauses (10.2.2.3), like the modifiers described above, may also be promoted to the status of independent noun with ʔi-. However, in contrast to the other modifiers, the antecedent concept to which they refer must be expressed.

Example noun phrases comprised of a head noun and a dependent relative clause are as follows:

ʔiḡ nàǎ pá-lé
thing:LF REL happen:PFV-3SG.REFL
a thing that happened

ḡiḡ nàǎ nǎ-lé káá-m
child:LF REL sleep:PERF-3SG.REFL head:2SG.POSS.INAL
a child that has gone to sleep before you do

When these relative clauses are promoted to the status of independent nouns, they are expressed as follows:

ʔígà ʔi-nàǎ pá-lé
thing HEAD-REL happen:PFV-3SG.REFL
the thing *that happened*

bígà ʔì-nàá nù-lé káá-m

child HEAD-REL sleep:PERF-3SG.REFL head:2SG.POSS.INAL
the child *that has gone to sleep before you do*

5.11 Ideophonic nouns

Unlike the categories of adjective and adverb, in which ideophones are dominant, ideophones are marginally represented among nouns.

There are no syntactic indicators which separate ideophonic nouns from other nouns, nor are there any precise morphological criteria whereby they can be distinguished. However, there is a strong correlation between non-canonical noun structure (5.1.1.1) and ideophonic function (as described in 8.2). For example, species names and unusual items whose phonological forms reflect perceptual realities are well-represented (and perhaps even normative) among non-canonical nouns (examples are given in 5.11.1). In particular, this is the case for noun stems which exhibit reduplication (5.11.2). In addition to nouns which are inherently ideophonic, ideophonic nouns derived from adjectives also exist (5.11.3).

5.11.1 Examples of ideophonic nouns

The sound symbolism characteristic of ideophones is easier to identify for some nouns than for others. The clearest cases of ideophonic nouns are those which reflect a sound which speakers of the language associate with a given item. In Mambay, two examples of ideophonically transparent groups of nouns are musical instruments and birds, both of whose names are often based on the sounds they make. Ideophonic names for musical instruments include:

dèlèŋ-délén	bell	kókól	small drum
gàgàhŋ	drumstick	pìpùùrí	horn (instrument)
kâŋ	drum snare	tí-tóróŋ	small bronze bell

Ideophonic names for birds include:

bàhàà	ibis sp.	kyòò-kòrí	hornbill sp.
díht	warbler	tí-kà-ràhgú	large heron
ná-gáhgù	crow	tí-tòòntû	lark

5.11.2 Ideophonic nouns exhibiting reduplication

Nouns which exhibit segmental reduplication in their stem shapes are typically ideophonic. As with other nouns, some reduplicated nouns have prefixes (usually **tí-**; see 5.1.2.4.11); however, the presence or absence of a prefix is not correlated to whether or not reduplication has applied, and prefixes are excluded from the process.

Both partial and full segmental reduplication are attested; full reduplication is less common, but easier to delimit and describe (as talked about in 8.4.2.1.2). For some fully reduplicated nouns, as may be observed from the examples below, there seems to be a semantic link to pairing and plurality. Interestingly, an independent source morpheme is

not identifiable for any of these words. An exhaustive list of nouns in the data exhibiting full segmental reduplication is given here.

Fully reduplicated nouns without prefixes are:

bègè-bégé	spleen, pancreas	làb-làb	bud
ḃúrí-ḃùrì	piece	lèhrù-lèhrù	large-eared person
dìgìm-dígím	corn silk	sìrìm-sìrìm	dark colour
dèlèḡ-déléḡ	bell	wàh-wàh	hubbub
fùgù-fúgú	lungs		

Fully reduplicated nouns with prefixes are:

tí-dúú-dūù	owl sp.	tì-kòht-kòht	hornbill sp.
tì-fyáhḡ-fyàhḡ	minnow sp.	tì-kpúr-kpùr	weeding (first cycle)
tì-gbùl-gbùl	large air bubble in water	tì-kpàd-kpàd	malaria
tí-gbúm-gbùm	edible creeper sp.	tí-lwá'-lwà'	grass and burr sp.
tí-kíj-kìj	whooping cough		

A single kinship term, **nàḡà'** 'maternal uncle,' also shows segmental reduplication. However, rather than reflecting any ideophonic quality, the repetition in this word is better seen as the result of a universal repetitive tendency found in kinship terms (and, surprisingly, a tendency which is otherwise unexploited in Mambay).

5.11.2.1 CV structure

CV shapes of the fully reduplicated nouns in the list above are as follows:

CVV+CVV
 CVC+CVC
 CV.CV+CV.CV
 CV.CVC+CV.CVC
 CVV.CV+CVV.CV

It should be noted that those forms with prefixes are limited to the reduplication of a single heavy (two-mora; see 2.4.3) syllable, whereas most of the forms without prefixes show the reduplication of two syllables. This may be significant, but it is also possible that this pattern is due to the small sample size provided by the data.

5.11.2.2 Tone melodies

H-toned stems are absent among fully reduplicated nouns, but L-toned nouns are reduplicated in a straightforward manner, e.g. **sìrìm-sìrìm** 'dark colour.'

It is interesting that for other nouns, however, tone is not simply reduplicated along with the segmental information. A number of reduplicated stems show a HL melody on the reduplicated stem with the H on the first section and the L on the second, e.g. **ḃúrí-ḃùrì** 'piece'; conversely, several stems show a LH melody on the reduplicated stem with the L

on the first section and the H on the second, e.g. **dìgìm-dígím** ‘corn silk.’ This tone association, which differs from that found on morphologically simple nouns (4.2.1.1), confirms that reduplicated nouns are not comprised of one long root.

Finally, the LHL melody on the word **tì-kòht-kòht** ‘hornbill sp.’ does not appear to be the product of reduplication, but rather a simple tone melody associated with the word as a whole.

5.11.3 Ideophonic nouns derived from adjectives

Four ideophonic nouns appear to have been derived from adjectives:

ideophone		derived noun	
bùg-bùg	covered with a dusting of something	bû-búglá	a dusty littering of something
kèè	brilliant, intense (red)	kû-kéerú tí-kéé-kèèrú	brilliance, intense red (n.) firefly
ryáŋ-ryáŋ	long, straight and thin	tì-ryáŋ-ryàŋ	gourd sp. with long, thin neck

While the derivational template is different for each example, the following structures are evident in the derived forms:

- 1) an adjective base which has undergone an ideophonic plural derivation (8.5.1) (**bû-búglá, kû-kéerú**);
- 2) presence of a noun prefix (5.1.2) (**tí-kéé-kèèrú, tì-ryáŋ-ryàŋ**);
- 3) presence of a fused noun suffix (5.1.3.2) (**bû-búglá, kû-kéerú, tí-kéé-kèèrú**).

5.12 Proper names

Three types of proper names which are well-represented in the data are personal names (5.12.1), clan names (5.12.2) and place names (5.12.3).

5.12.1 Personal names

There are three major categories of personal names in Mambay, each of which serves a distinct function: canonical (5.12.1.1), situational (5.12.1.2), and religious (5.12.1.3). Although most Mambay infants are given many names by relatives at a naming ceremony (**yâh**), only one name from each category is typically retained by unofficial consensus and associated with a person for the remainder of his or her life. Of these three names, one or two names from any of the three categories are applied to a person publicly. Place names are additionally used to disambiguate between people whose publicly recognized names are identical (5.12.1.4).

Each name has a contrastive underlying tone melody. However, forceful or exasperated vocatives are pronounced with a replacive H melody.

tâw (male canonical name)
táw hey, Taw!

pàná (female canonical name)
páná hey, Pana!

5.12.1.1 Canonical names

There are exactly ten Mambay canonical personal names (**nà-wâgrá**) in common usage. Four of the names are for males, and six are for females. Birth order, parent's **nà-wâgrá**, and a child's temperament are factors which play into the choice of the name. This name also emphasizes a person's membership in the ethnic group. The four canonical personal names for males are:

kwéé	kàmì
kàdá	tâw

The six female canonical personal names are:

ɓàrá	ʔízá
ɗèví	pàná
gǎm	nàgá

All of the canonical names contain two morae: either two light syllables or one heavy syllable. While male canonical names exhibit four tone melodies (H, L, HL, LH), all of the female canonical names are LH.

For married women, the augmentative/female prefix **tí-** (5.8.2) is normally used with the name as a means of conveying respect:

tí-ɓàrá	tí'zá
tí-ɗèví	tí-pàná
tí-gǎm	tí-nàgá

In the case of **tí'zá** in the list above, the source V?V sequence alternates idiosyncratically with a glottalized vowel.

tí-	+	ʔízá	→	tí'zá	(Iza, respect form)
AUG		(Iza (female canonical name))		AUG:Iza	
cf. tí-	+	ʔígà	→	tí-ʔígà	large thing
AUG		thing		AUG-thing	

Like other nouns, canonical names have a linked form determined by a morphological template (cf. 5.2.2.2).

ḍèv ʔíí	my ḍèví
kàḍ ʔíí	my kàḍá
kàm ʔíí	my kàmì
tí'zí ʔíí	my tí'zá

However, when names are used in apposition (cf. 5.2.1), the free form rather than the linked form of the name is found.

kàmì tâw	cf. kàm ʔíí
(name) (name)	(name) 1SG.POSS

5.12.1.2 Situational names

Situational names are given as a way of marking the circumstances surrounding a child's birth: for example, they may be used to respond to a lie or an insult, to complain, or to show thankfulness. Most such names are unique to individuals, and they are formed in the same way for males and females. One situational name comprised of a noun has been attested (**nà-kàrá** 'cane, guide'), but most names are comprised of a complete clause. These include:

ʔà-záárà-nà	cf. ʔà záárà nà	(lit. 'did it [the disease] infect?')
		3:IMPFV cross/infect:VN QM
mì-vû-ní	cf. mì vû-ní	(lit. 'I have been afraid')
		1SG be.afraid:PERF-1SG.REFL
ná-súú-zí	cf. ná súú-zí	(lit. 'let's [incl.] remember')
		1&2:OPT think/remember:OPT-PL
wàr-zèèlá	cf. Ø wàr zèèlá	(lit. '[only] lies remain')
		3:PFV remain:PFV lie:VN
zǎh-háà-lé	cf. zǎh háà-lé	(lit. 'the ox has returned')
		ox come.back:PERF-1SG.REFL

5.12.1.3 Religious names

Almost all Mambay now claim adherence to either Islam or Christianity (1.1.3.4), and this is reflected in the normative use of religious names. The Mambay associate Fulfulde with Islam, and French with Christianity; consequently, it is from these two languages that religious names are selected and applied along the religious lines within the ethnic group. Interestingly, religious names tend to conform to the CV and tonal norms of the Mambay canonical names (cf. 5.12.1.1): those names that are more than two syllables often have short (two-mora) forms, and short names are pronounced with LH tone.

Examples of names associated with each of the major religions are given here, and a short form is provided when it has been attested:

“Islamic” name	short form	
bùbá	—	(male name)
fàdìmádù	fàdǐ	(female name)
mùsá	—	(male name)
nàfìsátù/nàfí	nàfí	(female name)
?ùsùmànù	mànù	(male name)

“Christian” name	short form	
?àgábùs	?àgá	(male name)
?èlìzàbèt	?èlíz	(female name)
làzár	—	(male name)
mùwíz	—	(male name)
nàtànyêl	nàtá	(male name)

5.12.1.4 Personal names referring to place names

When two people in the same referential sphere have publicly recognized names (see beginning of 5.12.1) that are identical, place names (cf. 5.12.3) are frequently used to disambiguate between the two people.

kàmì ?ìsá fígí	Kami Isa from Figuil
kàmì ?ìsá káà-kààlá	Kami Isa from Kaakaala
kwéé làzár bèè-sùm	Kwe Lazar from Beesum
kwéé làzár káà-gúúmà	Kwe Lazar from Kaaguuma
tí-pàn bèè-pàhnà	Tipana from Beepahna
tí-pàn káà-kyô'w	Tipana from Kaakyo'w

5.12.2 Clan names

The names of major Mambay clans are as follows:

búró	lâh-zwâ' (cf. zwâ' ‘ancestry’)
gáà	lâmbèy (cf. lâmbùù ‘(village name)’))
gyàhrá (cf. gyàhrá ‘termite sp.’)	nà-hî' / táàrè
kàdǵà	nà-hîmgó (cf. hîmgó ‘owl’)
kà-zû'	sàà-búúrà (cf. sàà inside, búúrà ‘wall, construction’)
kòngòṅ	sàgró
kpí'rà / mǎṅgà	
kpùmú / tárà (cf. kpùmú ‘monkey’)	

Importantly, and similar to what is found in Mundang and some related languages (Elders 2000:253–4, Welmers 1973:216–7; cf. Ruelland 1992:230–1), there is no formal difference between the two following a transitive verb. This may lead to ambiguity which is only resolved in the referential realm, as the following example shows:

Ø làà-rì túrà	he/she/it has eaten millet / he/she/it has eaten
3:PFV eat:PERF-PERF millet	at the millet (i.e., among the millet plants)

When an object and locational complement are found in the same clause, the object comes first.

Ø làà túrà ?áà	he/she/it has eaten millet among the bean plants
3:PFV eat:PFV millet beans	

Ø làà ?áà túrà	he/she/it has eaten beans among the millet plants
3:PFV eat:PFV beans millet	

Although a wide range of nouns could be used in a locative function, three categories in particular are commonly used: locations in the referential realm, inherently locative nouns, and body parts used in a locative capacity.

Examples of locations in the referential realm (see also 5.12.3) are as follows:

bèè kàhbí	(river name)
fíìlò	[a particular] house / home
káà-kààlá	(village name)
vbǎglà	(fields near Kaakaala)
zé'gà	[a particular] mountain; Mambay Mountain

Ø yàà fíìlò	he/she/it stayed at the house
3:PFV stay:PFV house	

Ø yàà káà-kààlá	he/she/it stayed in Kaakaala
3:PFV stay:PFV Kaakaala	

Ø yàà zé'gà	he/she/it stayed on the mountain /
3:PFV stay:PFV mountain	he/she/it stayed on Mambay Mountain /

All of the inherently locative nouns in the data are as follows:

fà-gbàhḡ	outside
fin	toward
gâh	midst
kǎ'	here

kô'	there
kǔ'	there
làbí	left side
sígzò	middle

Ø **yàà sígzì fíflò** he/she/it stayed in the middle of the house
 3:PFV stay:PFV middle:LF house

Ø **yàà gâh ?éré** he/she/it stayed among them (lit. in their midst)
 3:PFV stay:PFV midst:LF 3PL.POSS

Ø **yàà kà' nájá** he/she/it stayed right here
 3:PFV stay:PFV here this

That these words are nouns rather than prepositions is proven by their compatibility with dependent noun phrase elements such as possessor nouns, possessive pronouns and specifiers. This is shown in the example sentences above.

Body parts commonly used in a locative capacity are as follows:

noun	body part gloss	locative gloss
dágà	mouth, edge	by, at, at the tip of
dwǎ'	belly	centre
fààlá	back, skin, place	at, at the back of, behind
fínù	forehead, front	in front of, facing
?ínù	body, self	at the place of, in the presence of
káálà	head, reason	on, in reference to, in order to, because
mùhná	vulva	at the centre of
'màhná	leg, foot	at the foot of
nìnú	eye, face, life	under, at the bottom of, for, because
nínú	eye, face, life	in the presence of
syâh	hand, finger	for
tè'nú	side	beside
tìnú	front, genitals	at the front of
vbyâh	cheek	on the flank of

These body parts are a subset of the nouns which take inalienable pronominal possession (5.3.4.1). When they are used in a locative capacity, they are necessarily possessed (cf. 5.3.3.3.1). The possessor may be a noun or an inalienable possessive pronoun (cf. 5.3.4.2.2).

Ø **yàà káà zé'gà** he/she/it stayed on top of the mountain
 3:PFV stay:PFV head:LF mountain

PRONOUNS

Because pronouns play a major role in verbal inflection (cf. 7.4), the description of pronouns in Mambay provides a suitable transition between the description of nouns (Chapter 5) and that of verbs (Chapter 7). Most of the present chapter is devoted to the cataloguing and description of personal pronouns (6.1), and a final section (6.2) presents interrogative pronouns.

6.1 Personal pronouns

In Mambay, thirteen pronoun slots are grammaticalized based on person, number and related values (6.1.1). Pronouns are used to mark subjects (6.1.2), objects (6.1.3) and possessors (6.1.4). Each category of personal pronoun is found with a corresponding set of emphatic pronouns (6.1.5).

The table on the following page provides an overview of Mambay personal pronouns:

Mambay personal pronouns

person	subject							object		possessive	
	independent	Perfective tenses	Imperfective	Indicative Irrealis	negative Perfective	negative non-Perfective	Optative	basic	reflexive	alienable	inalienable
1SG	mì	mì	mì	mìí	mìí	mìí	mì	mì	ʔíní	ʔíí	-í
2SG	mù	mù	mù	mùú	mùú	mùú	mù	-m	ʔíním	ʔám	-m
1&2SG	nà	nà	nà	nàá	nàá	nàá	nà	nà	ʔíná	ʔáná	-ná
3SG	dú	∅	ʔà / ∅	ʔáá	ʔáá~ híí	ʔáá~ híí	má	-`rú~ -`wú	—	ʔúúrú~	-`rú~
3SG.IMPERS	ʔà									ʔúúwú	-`wú
3SG.COREF	lè	lè	lè	lèé	lèé	lèé		lé	ʔilé	ʔéé	-lé
1PL	rì	rì	rì	rìí	rìí	rìí	rì	rì	ʔírí	ʔírí	-rí
2PL	rò~ʔò	rò~ʔò	rò~ʔò	ròó	ròó	ròó	rò~ʔó	ró	ʔíró	ʔóró	-ró
1&2PL	nànzà	nà	nà	nàá	nàá	nàá	nà	zínzá~ -zíná	ʔínzínzá~ ʔínzá	ʔánzá	-zínzá~ -zíná
3PL	dùgzí	∅	ʔà / ∅	ʔáá	ʔáá~ híí	ʔáá~ híí	má	dùgú	—	dùgú	dùgú
3PL.IMPERS	ʔà									ʔéré	-ré
3PL.COREF	rè	rè	rè	rèé	rèé	rèé		ré	ʔíré		

6.1.1 Pronoun slots

Thirteen pronoun slots are grammaticalized based on person, number and related values.

1SG	first person singular
2SG	second person singular
1&2SG	first-and-second person “singular”
3SG	third person singular
3SG.IMPERS	third person impersonal singular
3SG.COREF	third person co-referential singular
3GEN	third person generic
1PL	first person plural (exclusive)
2PL	second person plural
1&2PL	first-and-second person plural
3PL	third person plural
3PL.IMPERS	third person impersonal plural
3PL.COREF	third person co-referential plural

This chart shows that in addition to distinctions among first, second and third person and between singular and plural, the following pronominal categories are grammaticalized in Mambay: first-and-second (6.1.1.1); impersonal (6.1.1.2); generic (6.1.1.3); and co-reference (6.1.1.4).

Instances of formal redundancy between some of the slots are summarized in 6.1.1.5. In particular, the third person generic (omitted in the main chart on the previous page; see 6.1.1.3) and third person impersonal slots are marginal, since in most cases they share the form of other third person pronouns. Taking this into account, the basic pronoun system of Mambay may be schematized as follows:

The basic pronoun system of Mambay

1SG	1PL
2SG	2PL
1&2SG	1&2PL
3SG	3PL
3SG.COREF	3PL.COREF

6.1.1.1 First-and-second (1&2)

First-and-second (1&2) person pronouns are “inclusive,” that is, they involve (at least) a speaker and an addressee. Mambay stands apart from most closely related languages and other languages in the region not in that it has inclusive pronouns, but in that this slot is distinguished for “singular” and plural (Duru / Yag Dii in north-central Cameroon also exhibits this system; see Bohnhoff 1986:104). 1&2 singular pronouns refer to the minimal communication dyad, namely, a speaker and an addressee.

nà **sàà** **màh** we (you (sg.) and I) are in the granary
1&2SG.INDEP inside granary

kpáhli **?áná** our (your (sg.) and my) stool
stool:LF 1&2SG.POSS

From a numeric point of view, these pronouns are dual rather than singular. However, in the pronominal system, they pattern as singular by virtue of a grammaticalized opposition to the 1&2 plural pronouns (cf. Thomas 1955:207–8, Corbett 2000:166–9, Cysouw 2003:85–90, 260–4 and 2005:5). 1&2 plural pronouns refer to a communication dyad with a speaker, an addressee, and at least one other participant. The “other(s)” may be aligned with either the speaker or the addressee.

nànzà **sàà** **màh** we (you and we / you (pl.) and I) are in the granary
1&2PL.INDEP inside granary

kpáhli **?ánzá** our (your and our / your (pl.) and my) stool
stool:LF 1&2PL.POSS

In the above examples, it is evident that the form of the 1&2 singular is similar to that of the plural (this is also the case in Duru; see Bohnhoff 1986:104, 129 footnote 3). In fact, for verbal subject pronouns, 1&2 singular and plural forms are identical; the singular vs. plural distinction is instead formalized on verbs through the use of the verbal plurality affix **-zí** (7.3.1.1) and singular vs. plural reflexive suffixes (7.3.1.2) on verb stems.

nà **hèè** we (you (sg.) and I) climbed
1&2 climb:PFV

nà **hèè-zí** we (you and we / you (pl.) and I) climbed
1&2 climb:PFV-PL

nàá **hèè-ná** we (you (sg.) and I) will climb
1&2:IRR climb:FUT-1&2SG.REFL

nàá **hèè-zìnzá** we (you and we / you (pl.) and I) will climb
1&2:IRR climb:FUT-1&2PL.REFL

In all cases where there is a formal singular vs. plural distinction, the plural counterpart contains a morpheme with the consonant **z**. This underlines the 1&2 plural’s formal alignment with other explicit plural marking in the language, which is also typically found with **z** (5.5, 5.9.2.1, 7.3.1.1).

An alternative presentation of the same system using the more familiar distinctions of inclusive vs. exclusive and singular vs. dual vs. plural has also been considered. In such a presentation, the 1&2 singular slot shown above would be labelled “first person inclusive dual” and the 1&2 plural slot would be labelled “first person inclusive plural”; also—and importantly—the first person plural slot described in this study would be recast as “first person exclusive plural.” Such a description is provided for a parallel system in Margi (a Chadic language of Nigeria) by Hoffman (1963:72ff.). The two presentations may be compared as follows:

Presentation with 1&2SG/PL slots

1SG	1PL
2SG	2PL
1&2SG	1&2PL
3SG	3PL
3SG.COREF	3PL.COREF

Presentation using familiar distinctions

1SG	1DU.INCL	1PL.INCL
	1PL.EXCL	
2SG	2PL	
3SG	3PL	
3SG.COREF	3PL.COREF	

The latter presentation, which relies on more familiar distinctions, falls short in that it sets up a dual vs. plural opposition, even though a “dual” category is not grammaticalized elsewhere in the Mambay pronoun system (or anywhere in the language, for that matter; see Thomas 1955:205, Plank 1996 and Cysouw 2003:87–8). In contrast, the presentation with 1&2SG/PL slots recognizes a communication dyad as a basic person category; as such, it brings out symmetry in the applicability of plurality to 1&2 person pronouns and inherently singular pronouns (Greenberg 1988:3–4). The semantic confusion that arises from the labelling of a “you-and-I” (i.e., 1&2SG) pronoun as singular can be addressed by considering this pronoun, along with the inherently singular pronouns, as “minimal”; remaining pronouns could be considered “augmented,” since they all involve the addition of “other” persons to “minimal” slots (Bohnhoff 1986:104, Beavon 1986:175, Corbett 2000:199–9, Cysouw 2003:85–90, 2005:5).

6.1.1.2 Impersonal

For third person singular as well as third person plural pronouns, there is a partial default vs. impersonal contrast. Whereas default third person pronouns make explicit reference to a discourse participant, impersonal pronouns are used when a participant is not in view (i.e., is backgrounded or irrelevant) but the grammatical context still requires a pronoun. The default vs. impersonal distinction is formalized only for independent pronouns (6.1.2.1) used as subjects of verbless attributive clauses (cf. 8.4.1) and for possessive pronouns (6.1.4).

An illustration of this distinction in verbless clauses is as follows:

default third person pronouns:

dú **ká** **pàrà** he/she/it is good
3SG.INDEP ATTRIB goodness

dùgzí **ká** **pàrà** they are good
3PL.INDEP ATTRIB goodness

impersonal third person pronouns:

?à **ká** **pàrà** it (impers.) is good (Fr. *c'est bon*) /
3IMPERS ATTRIB goodness they (impers.) are good (Fr. *ce sont bons*)

?à **míz-míz** it is drizzly
3SG.IMPERS drizzly

For third person possessive pronouns, impersonal pronouns pattern with co-reference pronouns rather than the default third person pronoun set (see 6.1.1.5.2).

default third person pronouns:

bèè **?ùrú** his/her/its water
water:LF 3SG.POSS

bèè **dùgú** their water
water:LF 3PL.POSS

fààrú his/her/its back/skin (inal.)
back/skin:3SG.POSS.INAL

impersonal and co-referential third person pronouns:

bèè **?éé** his/her/its (coref.) water / its (impers.) water
water:LF 3SG.COREF/IMPERS.POSS

bèè **?éré** their (coref./impers.) water
 water:LF 3PL.COREF/IMPERS.POSS

fààlé his/her/its back/skin (inal.) (coref./impers.) /
 back/skin:3SG.POSS.INAL afterward (cf. 5.13)

6.1.1.3 Generic

A marginal generic third person category in Mambay is expressed using the third person generic pronoun **dǔg** ‘one, they, people.’ This pronoun differs from all other twelve pronominal person slots in that it is not found with its own distinctive pronoun forms (i.e., subject, object and possessive); instead, it patterns syntactically like a subject noun or an emphatic subject pronoun (6.1.5.1), since it is found as the subject in clauses which are already accompanied by a third person (singular or plural) pronoun. In the following examples, the generic third person pronoun **dǔg** is compared with the formally similar emphatic forms of the third person singular and plural:

dǔg **?àá** **hèè** one will climb
 3GEN 3:IRR climb:FUT

dúù **?àá** **hèè** *he/she/it* will climb
 3SG.EMPH 3:IRR climb:FUT

dùgzí **?àá** **hèè-zí** *they* will climb
 3PL.EMPH 3:IRR climb:FUT-PL

Other examples showing the generic third person pronoun (always patterning syntactically as an emphatic subject pronoun) are as follows:

dǔg **sàà** **rò’rá**
 3GEN inside word
one is caught up with an issue (lit. one is inside a word)

dǔg \emptyset **héerà**
 3GEN 3:REAL climb:VN
one climbs

dǔg **má** **hèè**
 3GEN 3:OPT climb:OPT
one must climb

dǔg **hî** **nàh** **kpáávirá** **tédé** **yá**
 3GEN 3:NONPFV.NEG take.out:VN plant.bulb.sp. all NEG
one doesn’t take out all the plant bulbs

Because the generic third person pronoun bears a non-specific referential value ('one, they, people'), it is never found with Perfective verb forms, which signal events that have taken place in conjunction with specific subjects (6.1.2.2).

***dǔg** Ø **hèè** *one climbed
 3GEN 3:REAL climb:PFV

Because (as mentioned at the beginning of this section) the third person generic pronoun does not have its own distinctive pronoun forms, it is not discussed in the sections which deal with pronoun forms.

6.1.1.4 Co-reference

In addition to the person-related pronominal categories already catalogued in this section, Mambay makes use of a system of co-reference with third person pronouns. This system, which helps users of the language to keep track third person referents, has been described in Anonby (2005:27–44). In the present section, generalities of co-reference in Mambay are laid out.

Co-reference pronouns are used to show that a real-world referent is the same as one which has been previously designated. In contrast to anaphoric demonstratives (9.2.2), which are used to refer back over longer distances of text, co-reference functions within a clause.

Although they comprise a single formal set in Mambay, co-reference pronouns are used in two capacities: reflexive and logophoric (cf. Wiesemann 1986:438, Kutsch Lojenga 2007:143–5). Reflexive co-reference pronouns are used within a simple clause to refer back to the subject of the clause. They are represented by reflexive object pronouns (6.1.3.2) and possessive pronouns (6.1.4).

third person reflexive object pronoun:

?à **kòg** **?ílé** he/she/it sees himself/herself/itself
 3:IMPFV see:VN body:3SG.COREF/IMPERS.POSS

cf. third person non-reflexive object pronoun:

?à **kòg-rú** he/she/it_i sees him/her/it_j
 3:IMPFV see:VN.3SG.OBJ

third person co-referential possessive pronoun:

Ø **hàhngí** **yǐh** **?éé** he/she/it_i forgot his/her/its_i name
 3:PFV forget:PFV name:LF 3SG.C/I.POSS

cf. third person non co-referential possessive pronoun:

Ø **hàhǵí** **yǵh** **ʔúùrú** he/she/it_i forgot his/her/its_j name
 3:PFV forget:PFV name:LF 3SG.POSS

For their part, logophoric co-reference pronouns in Mambay show that a participant in an Indicative complement clause refers to the same participant as the subject of the main clause (cf. Watters 2000:225). Specifically, it is main-clause verbs of “speech, thoughts, feelings, or general state of consciousness” followed by the complementizer **bè** (10.2.2.1) which trigger the use of logophoric pronouns in the complement clause (Clements 1975:141, cf. Hagège 1974:290). When default (non co-reference) pronouns are used in this context, it signals a switch in pronominal reference. A pair of examples contrasting the use of logophoric co-reference pronouns with default pronouns is as follows:

logophoric co-reference pronoun:

Ø **ró'** **bè** **lè** **vè** **dâg** **byàá**
 3:PFV say:PFV QUOT 3SG.COREF go:PFV mouth:LF water

he/she/it_i said that he/she/it_i went to the water's edge

cf. default (here: switch-reference) pronoun:

Ø **ró'** **bè** Ø **vè** **dâg** **byàá**
 3:PFV say:PFV QUOT 3:PFV go:PFV mouth:LF water

he/she/it_i said that he/she/it_j went to the water's edge

Unlike third person subject pronouns found in Indicative complement clauses, which exhibit a logophoric/default contrast, those found in Optative complement clauses are invariable.

Ø **ró'** **bè** **má** **vè-lé** **dâg** **byàá**
 3:PFV say:PFV QUOT 3SG:OPT go:OPT-3SG.REFL mouth:LF water

he/she/it_i said that he/she/it_{ij} must go to the water's edge

Because the domain of logophoric co-reference is within a single main clause (including embedded complement clauses), referentially identical subjects in juxtaposed main clauses are marked with a default pronoun.

Ø **ró'** **ʔígà,** Ø **vè** **dâg** **byàá**
 3:PFV say:PFV thing 3:PFV go:PFV mouth:LF water

he/she/it_i said something [and] he/she/it_i went to the water's edge

6.1.1.5 Formal redundancy between categories

Of the thirteen pronominal person slots, five do not share forms with other slots: 1SG, 2SG, 3GEN, 1PL and 2PL. First-and-second person (6.1.1.5.1) and most third person

(6.1.1.5.2) pronouns, in contrast, exhibit partial formal redundancy with other pronouns in the same group.

6.1.1.5.1 First-and-second (1&2) person pronouns

The distinction between first-and-second person singular vs. plural (6.1.1.1) is absent on (non-emphatic) verbal subject pronouns (6.1.2). Instead, it is formalized on verbs through the use of the plurality affix **-zí** (7.3.1.1) and singular vs. plural reflexive suffixes (7.3.1.2) with verb stems.

nà	hèè	we (you (sg.) and I) climbed
1&2	climb:PFV	
nà	hèè-zí	we (you and we / you (pl.) and I) climbed
1&2	climb:PFV-PL	
nàá	hèè-ná	we (you (sg.) and I) will climb
1&2:IRR	climb:FUT-1&2SG.REFL	
nàá	hèè-zìnzá	we (you and we / you (pl.) and I) will climb
1&2:IRR	climb:FUT-1&2PL.REFL	

This singular vs. plural distinction is, however, marked on all other first-and-second person pronoun forms (6.1.1.1).

6.1.1.5.2 Third person pronouns

There are two sets of third person pronouns which exhibit partial formal redundancy: third person singular with third person plural, and third person (sg./pl.) with third person impersonal (sg./pl.).

Similarly to what happens with first-and-second person pronouns (6.1.1.5.1), a distinction of plurality is not marked on (non-logophoric) third person verbal subject pronouns; rather, it is formalized through the use of the inflectional plurality affix **-zí** (7.3.1.1) and/or the third person singular and plural reflexive suffixes (7.3.1.2) on verbs.

?àá	hèè	he/she/it will climb
3:IRR	climb:FUT	
cf. ?àá	hèè-zí	they will climb
3:IRR	climb:FUT-PL	
= ?àá	hèè-ré	they will climb
3:IRR	climb:FUT-3PL.REFL	

= **ʔàá** **hèè-zì-ré** they will climb
 3: IRR climb:FUT-PL-3PL.REFL

(For a discussion of the function of these affixes in plural Future forms, see 7.3.1.2 and 7.4.1.2.1).

The distinction between default and impersonal third person pronouns is formalized only for independent pronouns and possessive pronouns (6.1.2.1, 6.1.1.2).

dú **ká** **pàrà** he/she/it is good
 3SG.INDEP ATTRIB goodness

ʔà **ká** **pàrà** it (impers.) is good
 3IMPERS ATTRIB goodness

bèè **ʔúùrú ~ ʔúùwú** his/her/its water
 water:LF 3SG.POSS

bèè **ʔéé** his/her/its (coref./impers.) water
 water:LF 3SG.COREF/IMPERS.POSS

6.1.2 Subject pronouns

There are seven sets of subject pronouns:

- independent (6.1.2.1);
- Perfective (6.1.2.2);
- Imperfective (6.1.2.3);
- affirmative Indicative Irrealis (Future) (6.1.2.4);
- negative Perfective (6.1.2.6);
- negative non-Perfective (6.1.2.6); and
- Optative (6.1.2.7).

As this list shows, formal diversity among subject pronouns is largely a reflection of mood, realis value and aspect marking (cf. Wiesemann 1986:x, Burquest 1986:73–80). Distinctions are conveyed by means of contrastive vowel length, tone, and the patterning of third person pronouns.

The structure of first and second person subject pronouns is regular. Pronoun forms which pattern together for the first and second person are 1) Indicative Realis, 2) Indicative Irrealis and 3) Optative.

1. Indicative Realis pronouns represent independent pronouns, Perfective tenses and the Imperfective, and exhibit a common CV̂ structure.

2. Indicative Irrealis pronouns, which represent the affirmative Indicative Irrealis (i.e., Future) as well as negative Perfective and negative non-Perfective clauses, share a CVV structure; while the tone melody for the affirmative Indicative Irrealis and negative Perfective pronouns is HL, that of the negative non-Perfective pronouns is LH.
3. Optative pronouns exhibit an invariable C \acute{V} structure, whether affirmative or negative.

These patterns are summarized in the following table:

First and second person subject pronouns

subject pronoun type		structure
Indicative Realis	independent	C \grave{V}
	Perfective tenses	C \grave{V}
	Imperfective	C \grave{V}
Indicative Irrealis	affirmative Indicative Irrealis	C $\grave{V}\acute{V}$
	negative Perfective	C $\grave{V}\acute{V}$
	negative non-Perfective	C $\acute{V}\grave{V}$
Optative		C \acute{V}

The patterning of third person pronouns is more complex, and distinguishes each of the seven sets. This topic is discussed in the subsections below for each of the sets, but patterns are summarized and presented as a reference in the following table:

Third person subject pronouns

subject pronoun type		structure and patterning
Indicative Realis	independent	dú / dùgzí (default), ?à (impersonal); appears when there is no nominal subject
	Perfective tenses	zero pronoun (\emptyset)
	Imperfective	?à ; appears when there is no nominal subject
Indicative Irrealis	affirmative Indicative Irrealis	?àá ; obligatory pronoun
	negative Perfective	?àá ; obligatory pronoun; optional hǽ form
	negative non-Perfective	?àá ; obligatory pronoun; optional hǽ form
Optative		má ; obligatory pronoun

In fast speech, the second person plural pronouns (independent form: **rò**) with a CV shape are alternately realized with a glottal onset.

rò	làà	?ígà	you (pl.) ate something
1SG	eat:PFV	thing	
= ?ò	làà	?ígà	you (pl.) ate something
1SG	eat:PFV	thing	

This reduction is not attested with the structurally similar first person plural (independent form: **rì**) and logophoric third person plural (independent form: **rè**) pronouns.

Paradigms and illustrative examples of each pronoun set are given in the sections below (6.1.2.1–6.1.2.7), and references to the verbal forms with which these pronouns are used are also provided. Emphatic subject pronouns corresponding to each subject pronoun category are discussed in 6.1.5.

6.1.2.1 Independent

Independent pronouns, which typically exhibit a CV̂ structure, are as follows:

Independent pronouns

1SG	mì
2SG	mù
1&2SG	nà
3SG	dú
3SG.IMPERS	?à
3SG.COREF	lè
1PL	rì
2PL	rò ~ ?ò
1&2PL	nànzà
3PL	dùgzí
3PL.IMPERS	?à
3PL.COREF	rè

Independent pronouns are most commonly found as subjects of verbless clauses (10.1.3).

mù ká párà you are good
 2SG ATTRIB goodness

mì sàà mậ I am in the granary
 1SG inside granary

Third person independent pronouns exhibit a distinction between default subjects, which use the pronouns **dú** (sg.) / **dùgzí** (pl.), and impersonal subjects, which use the pronoun **?à**.

dú ká párà he/she/it is good
 3SG.INDEP ATTRIB goodness

dùgzí ká párà they are good
 3PL.INDEP ATTRIB goodness

?à ká párà it (impers.) is good / they (impers.) are good
 3IMPERS ATTRIB goodness

The third person independent pronouns appear only when there is no nominal subject.

dú sàà mậ he/she/it is in the granary
 3SG.INDEP inside granary

?à ká párà it (impers.) is good / they (impers.) are good
 3IMPERS ATTRIB goodness

cf. verbless clauses with a nominal subject:

bígà sùḡ mḡh a child is in the granary
 child inside granary

bòòlá ká párà a wooden club is good
 wooden.club ATTRIB goodness

In addition to their central use as subjects of verbless clauses, independent pronouns are found as complements of the prepositions **mḡ** ‘with, and’ and **bèè** ‘without’ (9.3).

mḡ mḡ with you (sg.) / and you (sg.)
 with 2SG

bèè mḡ without you (sg.)
 without 2SG

The preposition **yḡg** ‘to, for,’ in contrast, is accompanied by object pronouns (6.1.3).

6.1.2.2 Perfective tenses

Pronouns used with Perfective tenses (7.4.1.1.1) typically exhibit a CṼ structure.

Pronouns used with Perfective tenses

1SG	mḡ
2SG	mḡ
1&2SG	nḡ
3SG	∅
3SG.COREF	lè
1PL	rì
2PL	rò ~ ?ò
1&2PL	nḡ
3PL	∅
3PL.COREF	rè

The following examples illustrate the use of these pronouns:

mḡ hèè I climbed
 1SG climb:PFV

rò làà ?ígà you (pl.) ate something
 2PL eat:PFV thing

ʔà héérà
3:IMPFV climb:VN

he/she/it climbs / he/she/it is climbing

cf. Imperfective clauses with a nominal subject:

gǎm Ø héérà
Gam 3:REAL climb:VN

Gam climbs / Gam is climbing

6.1.2.4 Indicative Irrealis (Future)

Affirmative Indicative Irrealis pronouns, which are found with Future verb forms (7.4.1.2), exhibit a CVV structure.

Indicative Irrealis (Future) pronouns

1SG	mǐí
2SG	mùú
1&2SG	nàá
3SG	ʔàá
3SG.COREF	lèé
1PL	ríí
2PL	ròó
1&2PL	nàá
3PL	ʔàá
3PL.COREF	rèé

The following examples illustrate the use of these pronouns:

mǐí hère
1SG:IRR climb:FUT

I will climb; I *will* climb!

ʔàá hère-zí
3:IRR climb:FUT-PL

they will climb; they *will* climb!

bélà ʔàá hère-zí
children 3:IRR climb:FUT-PL

the children will climb; the children
will climb!

6.1.2.5 Negative Perfective

Pronouns found with negative Perfective verb forms (7.5.1) also exhibit a CṾṾ structure.

Negative Perfective pronouns

1SG	ṃíí
2SG	ṃùú
1&2SG	ṇàá
3SG	?àá ~ ḥíí
3SG.COREF	ḷéé
1PL	ṛíí
2PL	ṛòó
1&2PL	ṇàá
3PL	?àá ~ ḥíí
3PL.COREF	ṛéé

The following examples illustrate the use of these pronouns:

ṃíí **hèè** **yá** I did not climb
 1SG:PFV.NEG climb:PFV NEG

ròó **hèè-zí** **yá** you (pl.) did not climb
 2PL:PFV.NEG climb:PFV-PL NEG

For the third person negative Perfective pronoun, either **?àá** or **ḥíí** may be used; although the issue has been investigated, no differences in usage patterns or meaning have been established.

?àá **hèè** **yá** he/she/it did not climb
 3:PFV.NEG climb:PFV NEG

= **ḥíí** **hèè** **yá** he/she/it did not climb
 3:PFV.NEG climb:PFV NEG

6.1.2.6 Negative non-Perfective

Pronouns found with negative non-Perfective constructions (7.5.1) exhibit a CV̂V̂ structure.

Negative non-Perfective pronouns

1SG	m̂ḥ
2SG	m̂ḥḥ
1&2SG	n̂ḥḥ
3SG	?áà ~ ĥḥ
3SG.COREF	lèè
1PL	r̂ḥ
2PL	ròò
1&2PL	n̂ḥḥ
3PL	?áà ~ ĥḥ
3PL.COREF	rèè

The following examples illustrate the use of these pronouns:

m̂ḥ **héérà** **yá** I do not climb / I am not climbing
 1SG:NONPFV.NEG climb:VN NEG

m̂ḥḥ **ŝḥḥ** **m̂ḥ** **yá** you are not in the granary
 2SG:NONPFV.NEG inside granary NEG

For the third person negative non-Perfective pronoun, either **?áà** or **ĥḥ** may be used; although the issue has been investigated, no differences in usage patterns or meaning have been established.

ĥḥ **héérà** **yá** he/she/it is not climbing
 3:NONPFV.NEG climb:VN NEG

= **?áà** **héérà** **yá** he/she/it is not climbing
 3:NONPFV.NEG climb:VN NEG

6.1.2.7 Optative

Pronouns found with Optative verb forms (7.4.2) exhibit a CV structure.

Optative pronouns

1SG	mí
2SG	mú
1&2SG	ná
3SG	má
3SG.COREF	má
1PL	rí
2PL	ró ~ ?ó
1&2PL	ná
3PL	má
3PL.COREF	má

The following examples illustrate the use of these pronouns:

mú **hèè** [you (sg.)] climb!
 2SG:OPT climb:OPT

má **hèè-zí** they must climb!
 3:OPT climb:OPT

Third person Optative pronouns do not exhibit a basic vs. logophoric distinction (6.1.1.4); their form **má** is invariable.

Ø **ró'** **bè** **má** **vè-lé** **dâg** **byàá**
 3:PFV say:PFV QUOT 3SG:OPT go:OPT-3SG.REFL mouth:LF water
he/she/it_i said that he/she/it_{i;j} must go to the water's edge

6.1.3 Object pronouns

There are two categories of object pronouns in Mambay: basic (6.1.3.1) and reflexive (6.1.3.2).

6.1.3.1 Basic object pronouns

Basic object pronouns are as follows:

Basic object pronouns

1SG	mí
2SG	-m
1&2SG	ná
3SG	-rú
3SG.COREF	lé
1PL	rí
2PL	ró
1&2PL	zìnzá ~ -zíná
3PL	dùgú
3PL.COREF	ré

Object pronouns are typically found immediately following transitive verb stems (cf. 7.3.2.1.2). Examples include:

mì	kòg	dùgú	I see them / I am seeing them
1SG	see:VN	3PL.OBJ	
mù	zóó	rí	you (sg.) greeted us (excl.)
2SG	greet:PFV	1PL.OBJ	

While most of the object pronouns are segmentally and tonally independent from the verb word, three object pronouns suffixes: 2SG, 3SG, and the **-zíná** form of 1&2PL.

∅	zóó-m	he/she/it greeted you (sg.)
3:PFV	greet:PFV-2SG.OBJ	
∅	zóò-rú	he/she/it _i greeted him/her/it _j
3:PFV	greet:PFV-3SG.OBJ	
∅	zóó-zíná	he/she/it greeted us (incl.)
3:PFV	greet:PFV-1&2PL.OBJ	

Phonological evidence for treating these object pronouns as suffixes is presented in the section on verb word suffixes (7.3.1.5).

As shown in the table above, the third person singular object pronoun **-rú** is also attested as **-wú**; the variant **-wú** is associated with informal speech.

∅	zóò-rú	he/she/it _i greeted him/her/it _j
3:PFV	greet:PFV-3SG.OBJ	

6.1.3.2 Reflexive object pronouns

Members of a set of reflexive object pronouns are used whenever the object of a simple clause is co-referential with its subject. Similar to what is found in many other African languages (Watters 2000:213), reflexive object pronouns in Mambay are composed of the noun **ʔínù** ‘body, self’ and an inalienable possessive pronoun (6.1.4.2). Reflexive object pronouns are as follows:

Reflexive object pronouns

1SG	ʔíní
2SG	ʔíním
1&2SG	ʔíná
3SG	—
3SG.COREF	ʔilé
1PL	ʔírí
2PL	ʔíró
1&2PL	ʔínzínzá ~ ʔínzá
3PL	—
3PL.COREF	ʔíré

The following examples illustrate the use of these pronouns:

mì kó ʔíní I saw myself
 1SG see:PFV body:1SG.POSS.INAL

rò lá’ ʔíró you (pl.) heard yourselves
 2PL hear:PFV body:2PL.POSS.INAL

Whenever a paradigm of basic object pronouns (6.1.3.1) is being elicited with a transitive verb, reflexive object pronouns are always substituted if the subject and object are co-referential.

mù zóó mǐ you (sg.) greeted me
 2SG greet:PFV 1SG.OBJ

mù zóó ʔíním you (sg.) greeted yourself
 2SG greet:PFV body:1SG.POSS

Like reflexive verb suffixes (7.3.1.5), reflexive object pronouns reduce the number of semantic participants in a transitive verb construction. However, they achieve this using different strategies: while reflexive suffixes result in the detransitivization of a transitive verb (7.3.2.1.2), reflexive object pronouns satisfy transitivity requirements by supplying the transitive verb with an object. The detransitivization strategy is only moderately

productive and is often accompanied by semantic shift (7.3.2.1.2), but the use of reflexive objects is fully productive.

reflexive verb suffix:

mì gù-ní I consented
1SG consent:PFV-1SG.REFL

rò gù-ró you (pl.) consented
2PL consent:PFV-2PL.REFL

reflexive object pronoun:

mì gù ?íní I answered myself
2SG answer:PFV body:1SG.POSS.INAL

When reflexive object pronouns are plural, they may reflect either a reflexive or a reciprocal function; such a distinction is not grammaticalized.

rò gù ?író you (pl.) answered yourselves (i.e. each
2PL answer:PFV body:2PL.POSS.INAL of you answered yourself *or* each of
you answered the others of you *or*
[both of these possibilities])

Because reflexive object pronouns are inherently co-referential (cf. 6.1.1.4), basic (non co-referential) third person pronouns are absent from the reflexive object pronoun paradigm.

6.1.4 Possessive pronouns

Mambay has two sets of possessive pronouns: alienable (6.1.4.1) and inalienable (6.1.4.2). While alienable possessive pronouns are the default set and may be used with any noun, inalienable possessive pronouns may only be used with a small subgroup of nouns representing certain body parts as well as terms of kinship and social relation (5.3.4.1). The two sets are as follows:

Alienable possessive pronouns

1SG	ʔíí
2SG	ʔám
1&2SG	ʔáná
3SG	ʔúùrú ~ ʔúùwú
3SG.IMPERS	ʔéé
3SG.COREF	ʔéé
1PL	ʔírí
2PL	ʔóró
1&2PL	ʔánzá
3PL	dùgú
3PL.IMPERS	ʔéré
3PL.COREF	ʔéré

Inalienable possessive pronouns

1SG	-í
2SG	-m
1&2SG	-ná
3SG	-`rú ~ -`wú
3SG.IMPERS	-lé
3SG.COREF	-lé
1PL	-rí
2PL	-ró
1&2PL	-zínzá ~ -zíná
3PL	(dùgú)
3PL.IMPERS	-ré
3PL.COREF	-ré

As the table shows, alienable possessive pronouns are minimally comprised of either one heavy syllable or two light syllables and thus meet the minimal weight requirement characteristic of nouns (5.1.1.1). This is not the case for inalienable possessive pronouns, which in most cases are comprised of a single light syllable.

Possessive pronouns of both sets differ from other sets in that their third person impersonal pronouns are formally equivalent to their third person co-reference pronouns (6.1.1.2).

6.1.4.1 Alienable possessive pronouns

Alienable possessive pronouns are phonologically independent words rather than suffixes. They may be found with the linked form (5.2.2) of any noun. Pronouns in this set, shown in the context of an alienable possessive construction (5.3.3.3.1) with **pábà** ‘milk’ (linked form: **pâb**), are as follows:

person	example	gloss
1SG	pâb ʔíí	my milk
2SG	pâb ʔám	your (sg.) milk
1&2SG	pâb ʔáná	our (your (sg.) and my) milk
3SG	pâb ʔúùrú ~ pâb ʔúùwú	his/her/its milk
3SG.COREF/IMPERS	pâb ʔéé	his/her/its (coref./impers.) milk
1PL	pâb ʔírí	our (excl.) milk
2PL	pâb ʔóró	your (pl.) milk
1&2PL	pâb ʔánzá	our (incl.) milk
3PL	pâb dùgú	their milk
3PL.COREF/IMPERS	pâb ʔéré	their (coref./impers.) milk

For the third person singular pronoun, the form **úùrú** is more common in careful speech, and the form **úùwú** is more common in rapid speech.

As the table shows, alienable possessive pronouns are (like nouns) minimally comprised of either one heavy syllable or two light syllables (cf. 5.1.1.1).

All but one of the alienable possessive pronouns begin with a **ʔ**-vowel sequence. Also, even in the pronouns with two syllables, a single vowel quality is attested for each pronoun.

Tonally, most of these pronouns are H. However, the third person singular pronoun **ʔúùrú** is HLH, and the third person plural pronoun **dùgú** is LH. The following examples show that the tone melody of possessive pronouns is independent from those of the head nouns which they qualify:

vbúù ʔíí	my grass sp. (cf. vbúù grass sp.)
vbúù ʔúùrú	his/her/its grass sp.
vbúù dùgú	their grass sp.
núúrú ʔíí	my breast (cf. núúrú breast)
núúrú ʔúùrú	his/her/its breast
núúrú dùgú	their breast
bìlìm ʔíí	my drum sp. (cf. bìlìm drum sp.)
bìlìm ʔúùrú	his/her/its drum sp.
bìlìm dùgú	their drum sp.

These examples also show that the nasal value of head nouns is independent from that of the qualifying possessive pronouns.

6.1.4.2 Inalienable possessive pronouns

Inalienable possessive pronouns formalize an inherent association between nouns and pronominal referents (5.3.4). They are found with a closed set of words containing some body parts as well as some terms of kinship and social relation (5.3.4.1).

Inalienable possessive pronouns show a clear resemblance to their alienable counterparts (6.1.4.1). However, with the exception of the third person plural inalienable possessive pronoun, whose form is the same as its alienable counterpart (see below in this section), inalienable possessive pronouns are suffixes.

Pronouns in this set, shown in the context of inalienable possessive constructions (5.3.4) with the body part **káálà** ‘head’ (linked form: **káà**), as well as the kinship term **sùùní** ‘younger in-law,’ are as follows:

Possessive construction with **káálà** ‘head’ and inalienable possessive pronouns

person	inalienable possessive pronoun	example usage	gloss
1SG	- í	káání	my head (inal.)
2SG	- m	káám	your (sg.) head (inal.)
1&2SG	- ná	kááná	our (your (sg.) and my) head (inal.)
3SG	-` ru ~ -` wu	káàru ~ káàwu	his/her/its head (inal.)
3SG.COREF/IMPERS	- lé	káále	his/her/its (coref./impers.) head (inal.)
1PL	- rí	káárí	our (excl.) head (inal.)
2PL	- ró	kááro	your (pl.) head (inal.)
1&2PL	- zínzá ~ - zíná	káázínzá ~ káázíná	our (incl.) head (inal.)
3PL	(dùgú)	(káà dùgú)	their head
3PL.COREF/IMPERS	- ré	káaré	their (coref./impers.) head (inal.)

Possessive construction with **sùùní** ‘younger in-law’ and inalienable possessive pronouns

person	inalienable possessive pronoun	example usage	gloss
1SG	- í	sùùní	my younger in-law (inal.)
2SG	- m	sùùm	your (sg.) younger in-law (inal.)
1&2SG	- ná	sùùná	our (your (sg.) and my) younger in-law (inal.)
3SG	-` ru ~ -` wu	sùùndú	his/her/its younger in-law (inal.)
3SG.C/I	- lé	sùùlé	his/her/its (coref./impers.) younger in-law (inal.)
1PL	- rí	sùùrí	our (excl.) younger in-law (inal.)
2PL	- ró	sùùró	your (pl.) younger in-law (inal.)
1&2PL	- zínzá ~ - zíná	sùùnzínzá ~ sùùnzá	our (incl.) younger in-law (inal.)
3PL	(dùgú)	(sùùn dùgú)	their younger in-law
3PL.C/I	- ré	sùùré	their (coref./impers.) younger in-law (inal.)

Whenever the segmental structure of the third person singular pronoun is -`**ru** (and not -`**du**; see 6.1.4.2.2), it is optionally realized as -`**wu** in casual speech.

careful speech		optional form in casual speech	
fààrú	fààwú		his/her/its back, skin (inal.)
sêhrú	sêhwú		his/her/its hand (inal.)
sûgrú	sûgwú		his/her/its ear (inal.)

The first person plural pronoun also presents a segmental variation, **-zínzá** vs. **-zíná**, but factors motivating this alternation are more complex. The two forms seem to reflect, respectively, the following tendencies of usage: archaic vs. contemporary, formal vs. casual, and dialects south vs. north of the Mayo Kebbi.

archaic (etc.)- type speech	contemporary (etc.)- type speech	
fààzìnzá	fààzíná	our (incl.) back, skin (inal.)
séhzìnzá	séhzíná	our (incl.) hand (inal.)
súgzìnzá	súgzíná	our (incl.) ear (inal.)

There is no contrast in the form of the inalienable vs. alienable (6.1.4.1) third person plural possessive pronoun **dùgú** (cf. 6.1.1.3). In both cases, **dùgú** resembles alienable rather than inalienable possessive constructions in that its tonal value is not fused to the head noun which it follows (cf. 4.1.2.3).

	alienable possession	inalienable possession	
	pàà dùgú man:LF 3PL.POSS	pàà dùgú man:LF 3PL.POSS	their acquaintance / their father
cf.	pàà ?íí man:LF 1SG.POSS	páy man:1SG.POSS.INAL	my acquaintance / my father

The tone of inalienable pronouns has been dealt with in the context of inalienable noun-pronoun possessive constructions (5.3.4). Nasality, which does not spread between inalienable pronouns and nouns, is described in 5.3.4.2.5.

In most cases, the segmental structure of an inalienable noun-pronoun possessive construction is a simple amalgamation of the linked form (5.2.2) of the head noun and the inalienable possessive pronoun.

fàà back:LF	+	-ró 2PL.POSS.INAL	→	fààró back:2PL.POSS.INAL	your (pl.) back, skin (inal.)
sûg ear:LF	+	-í 1SG.POSS.INAL	→	súgí ear:1SG.POSS.INAL	my ear (inal.)

Still, many segmental alternations take place at the boundary between inalienable possessive pronouns and the head nouns to which they are attached. These alternations are summarized in the following subsections according to the segmental context offered by the linked forms of head nouns they accompany.

Complete paradigms of regular inalienable possession are provided for all shapes in Appendix 1, and all of the numerous idiosyncratic paradigms are also given.

6.1.4.2.1 With linked forms ending in a long vowel

Inalienable possessive constructions involving nouns with linked forms ending in a long vowel insert **n** before the first person singular suffix **-í** as a means of avoiding illegal VVV structures, which are not found elsewhere in the language.

káà head:LF	+	-í 1SG.POSS.INAL	→	káání head:1SG.POSS.INAL	my head (inal.)
fàà back:LF	+	-í 1SG.POSS.INAL	→	fàání back:1SG.POSS.INAL	my back, skin (inal.)

6.1.4.2.2 With linked forms ending in a consonant

In constructions involving nouns with linked forms ending in a consonant, the second person singular suffix **-m** is realized as **-V́m** (where V is an echo of the vowel in the previous syllables, but which carries the High tone of the underlying suffix **-m**). This is a means of avoiding an illegal CC coda, since no other such structures are found in the language (2.4.1).

kpân penis:LF	+	-m 2SG.POSS.INAL	→	kpánám penis:2SG.POSS.INAL	your (sg.) penis (inal.)
sâb tail:LF	+	-m 2SG.POSS.INAL	→	sábám tail:2SG.POSS.INAL	your (sg.) tail (inal.)
sûg ear:LF	+	-m 2SG.POSS.INAL	→	súgúm ear:2SG.POSS.INAL	your (sg.) ear (inal.)
ûn front:LF	+	-m 2SG.POSS.INAL	→	ûní́m front:2SG.POSS.INAL	your (sg.) front, genitals (inal.)

In this context, forms ending preglottalized nasals pattern in an unusual manner: the **V'n** sequence is reinterpreted as a **V?V** sequence, where the glottal stop is discrete (cf. 2.3.3.3.2), and the alveolar nasal articulation disappears.

tè'n side:LF	+	-m 2SG.POSS.INAL	→	tè?ém side:2SG.POSS.INAL	your (sg.) side (of body) (inal.)
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Final obstruents

Constructions involving nouns with linked forms ending in an obstruent differ from other constructions in that the third person singular co-reference/impersonal suffix **-lé** is realized as **-é**:

sâb tail:LF	+	-lé 3SG.C/I.POSS.INAL	→	sábé tail:3SG.C/I.POSS.INAL	his/her/its (coref.) / its tail (inal.)
sûg ear:LF	+	-lé 3SG.C/I.POSS.INAL	→	súgé ear:3SG.C/I.POSS.INAL	his/her/its (coref.) / its ear (inal.)

Final sonorant consonants

Constructions involving nouns with linked forms ending in a sonorant differ from other constructions in several ways. First, most CV suffixes that begin with a sonorant displace the final sonorant of the linked form of the head noun:

fîn forehead:LF	+	-nâ 1&2SG.POSS.INAL	→	fínâ forehead:1&2SG.POSS.INAL	our (your (sg.) and my) forehead (inal.)
kpân penis:LF	+	-lé 3SG.C/I.POSS.INAL	→	kpálé penis:3SG.C/I.POSS.INAL	his/her/its (coref.) / its eye, face, life (inal.)
tîn front:LF	+	-ré 3PL.C/I.POSS.INAL	→	tîré front:3PL.C/I.POSS.INAL	their (coref./impers.) front, genitals (inal.)

However, for the third person suffix **-`rú**, the suffix-initial **r** constricts to **d** when it follows a sonorant, and does not replace the sonorant:

hùùñ thigh:LF	+	-`rú 3SG.POSS.INAL	→	hùùñdú thigh:3SG.POSS.INAL	his/her/its thigh (inal.)
nâ-pûr navel:LF	+	-`rú 3SG.POSS.INAL	→	nâ-pûrdú navel:3SG.POSS.INAL	his/her/its navel (inal.)
tîn front:LF	+	-`rú 3PL.C/I.POSS.INAL	→	tîndú front:3SG.POSS.INAL	his/her/its front (inal.)

(Considering that **dú** is the independent form of the third person pronoun (6.1.2.1), this **d/r** alternation more likely reflects a historical **d→r** softening in word-internal positions other than after **r** (see 2.1.2.2). However, since **-`rú** is synchronically represented in a wider range of environments, it has been selected as the underlying form of the third person singular pronoun.)

Additionally, the **-zíná** variant of the first-and-second person plural suffix is optionally reduced to **-zá** when it attaches to **n**-final linked forms:

n̄n eye:LF	+	-zíná 1&2PL.POSS.INAL	→	n̄nzá ~ n̄nzíná eye:1&2PL.POSS.INAL	our (incl.) eye, face, life (inal.)
hùùh thigh:LF	+	-zíná 1&2PL.POSS.INAL	→	hùùhzá ~ hùùhziná thigh:1&2PL.POSS.INAL	our (incl.) thigh (inal.)

For CVV**n**-final linked forms in particular, the final **n** of the linked form is displaced by the suffix **-m̄**.

hùùh thigh:LF	+	-m̄ 2SG.POSS.INAL	→	hùùhm̄ thigh:2SG.POSS.INAL	your (sg.) thigh (inal.)
sùùh younger.inlaw:LF	+	-m̄ 2SG.POSS.INAL	→	sùùhm̄ thigh:2SG.POSS.INAL	your (sg.) younger.in- law (inal.)

6.1.4.2.3 With linked forms ending in zi

Three nouns, all of which express social relations, and all of which could be historically composed, form inalienable possessive constructions differently than other nouns. These nouns are as follows:

?ázi´	member of ?àzgàrà (see Glossary)
fàzì	member of fàzàrà (”)
fàhzi	member of fàhzàrà (”)

They pattern differently than other nouns in three ways. First, the nasality on the first person form (usually marked by the suffixation of the nasalized pronoun **-í**) does not appear in the resulting possessive construction.

?ázi´ member.of. ?àzgàrà:LF	+	-í 1SG.POSS.INAL	→	?ázi member.of. ?àzgàrà: 1SG.POSS.INAL	my member of ?àzgàrà (inal.)
fàzì member.of. fàzàrà:LF	+	-í 1SG.POSS.INAL	→	fàzì member.of. fàzàrà: 1SG.POSS.INAL	my member of fàzàrà (inal.)

Second, the linked form's final vowel loses its identity completely when it encounters a second person singular or (optionally) third person singular (coref./impers.) pronoun.

ʔázi´	+	-m̀	→	ʔázám	your (sg.) member of
member.of.		2SG.POSS.INAL		member.of.ʔàzgàrà:	ʔàzgàrà (inal.)
ʔàzgàrà:LF				2SG.POSS.INAL	
ʔázi´	+	-lé	→	ʔázè ~ ʔázilé	his/her/its (coref.) / its
member.of.		3SG.C/I.		member.of.ʔàzgàrà:	member of ʔàzgàrà
ʔàzgàrà:LF		POSS.INAL		3SG.C/I.POSS.INAL	(inal.)

Third, for constructions with the first-and-second person plural **-zínzá**, a potential **zizi** sequence is simplified to **zi**.

ʔázi´	+	-zínzá	→	ʔázìnzá	our (incl.) member of
member.of.		1&2PL.		member.of.ʔàzgàrà:	ʔàzgàrà (inal.)
ʔàzgàrà:LF		POSS.INAL		1&2PL.POSS.INAL	
fâhzi	+	-zínzá	→	fâhìnzá	our (incl.) member of
member.of.		1&2PL.		member.of. fâhzàrà:	fâhzàrà (inal.)
fâhzàrà:LF		POSS.INAL		1&2PL.POSS.INAL	

6.1.5 Emphatic pronouns

Emphatic pronouns are the product of a largely regular formal strategy of emphasis (i.e., focus and prominence) unique to pronouns. This strategy is available to all of the basic personal pronoun sets (6.1.2–6.1.4); the attested types of emphatic pronouns are therefore as follows:

- emphatic subject pronouns (6.1.5.1);
- emphatic object pronouns (6.1.5.2); and
- emphatic possessive pronouns (6.1.5.3).

Typically, emphatic pronouns are composed of a basic pronoun coupled with an independent pronoun. For emphatic subject pronouns, the independent pronoun precedes the basic pronoun; for other emphatic pronoun sets, the independent pronoun follows it. This is shown in the following chart:

A comparison of basic pronoun sets with typical emphatic pronouns

basic pronoun set	example	gloss	typical emphatic pronoun structure	example	gloss
subject	m̀ɲ́	I (IRREALIS)	independent pn. + subject pn.	m̀ m̀ɲ́	I (IRREALIS)
object	m̀	me	object pn. + independent pn.	m̀ m̀	me
reflexive object	?íní	myself	reflexive pn. + independent pn.	?íní m̀	myself
inalienable possessive	-í	my (inal.)	inal. poss. pn. + independent pn.	-í m̀	my (inal.)
alienable possessive	?íí	my (al.)	inal. poss. pn. + independent pn.	?íí m̀	my (al.)

However, emphatic third person and first-and-second person plural pronouns often deviate from this regular pattern because of the complex distributional patterns of their basic counterparts (6.1.2).

On the following page, a table provides an overview of all emphatic personal pronouns in Mambay. The patterns common to each set as well as the exceptional behaviour exhibited by emphatic third person and first-and-second person plural pronouns are described in the subsections which follow.

Emphatic pronouns

person	emphatic subject			emphatic object		emphatic possessive	
	independent	Perfective tenses and Imperfective	other verb forms: (Indic. Irrealis, neg. Perfective, neg. non-Pfv., Optative)	basic	reflexive	inalienable	alienable
1SG	m̀ì m̀ì	m̀ì m̀ì	m̀ì + pn. *	m̀í m̀ì	?íní m̀ì	-í m̀ì	?íí m̀ì
2SG	m̀ù m̀ù	m̀ù m̀ù	m̀ù + pn.	m̀ú m̀ù	?íní m̀ù m̀ù	-m̀ì m̀ù	?ám m̀ù
1&2SG	ǹà ǹà	ǹà ǹà	ǹà + pn.	ǹá ǹà	?íná ǹà	-ǹà ǹà	?áná ǹà
3SG	d̀úù / d̀ú d̀úù	d̀úù / d̀ú d̀úù	d̀úù + pn.	d̀ú d̀ú	—	-`rú d̀ú ~ -`wú d̀ú	?úùrú d̀ú ~ ?úùwú d̀ú
3SG.IMPERS						-lé lè	?éé lè
3SG.COREF	lè lè	lè lè	lè + pn.	lé lè	?ílé lè	-lé lè	?éé lè
1PL	r̀ì r̀ì	r̀ì r̀ì	r̀ì + pn.	r̀í r̀ì	?írí r̀ì	-r̀ì r̀ì	?írí r̀ì
2PL	r̀ò r̀ò	r̀ò r̀ò	r̀ò + pn.	r̀ó r̀ò	?író r̀ò	-r̀ò r̀ò	?óró r̀ò
1&2PL	ǹànzàà	ǹànzà(à) ǹà	ǹànzà(à) + pn.	ǹànzà	?ínzínzá ǹànzà ~ ?ínzá ǹànzà	-zínzá ǹànzà ~ -zíná ǹànzà	?ánzá ǹànzà
3PL	d̀ùgzî	d̀ùgzí(ì)	d̀ùgzí(ì) + pn.	d̀ùgzí	—	d̀ùgzí	d̀ùgzí
3PL.IMPERS						-ré rè	?éré rè
3PL.COREF	r̀è r̀è	r̀è r̀è	r̀è + pn.	r̀é r̀è	?íré r̀è	-ré rè	?éré r̀è

* In this table, “pn.” refers to the usual subject pronoun for the verbal forms listed in the column; see table in 6.1 above.

6.1.5.1 Emphatic subject pronouns

For most of the personal pronouns, any type of emphatic subject pronoun may be produced by placing an independent pronoun (6.1.2.1) before a subject pronoun of the same person.

mì	mì	sàà	mậ	<i>I am in the granary</i>
3SG	3SG	inside	granary	
cf.	mì	sàà	mậ	<i>I am in the granary</i>
	3SG	inside	granary	
	mỳ	mỳ	hề	<i>you climbed</i>
	2SG	2SG	climb:PFV	
cf.	mỳ	hề		<i>you climbed</i>
	2SG	climb:PFV		
	rè	rềé	hề-zí	<i>they (log.) will climb</i>
	3PL.COREF	3PL.COREF:IRR	climb:FUT-PL	
cf.	rềé	hề-zí		<i>they (log.) will climb</i>
	3PL.COREF:IRR	climb:FUT-PL		

However, for the third person singular (6.1.5.1.1), first-and-second person plural (6.1.5.1.2) and third person plural (6.1.5.1.3), the emphatic pronoun template is more complex than this. In all of these cases, the attested strategies include lengthening of independent pronouns and the presence of a word-final L tone (compare emphatic negative objects in 10.1.2.3). This is possible for these three pronouns only because they are segmentally distinct from verbal subject pronouns, where length and tone are already used to mark TAM distinctions (6.1.2.4–6.1.2.6).

6.1.5.1.1 Third person singular

For emphatic forms of third person singular subject pronouns, the pronoun **dúù** is used. It resembles the default third person singular independent pronoun **dú** (6.1.2.1), but its vowel is long and it carries a HL rather than a H tone melody.

For most verb forms, **dúù** patterns like other emphatic subject pronouns (6.1.5.1): it is placed before a regular subject pronoun.

dúù	?àá	hề	<i>he/she/it will climb</i>
3SG.EMPH	3:IRR	climb:FUT	

cf. **ʔàá** **hèè** he/she/it will climb
 3:IRR climb:FUT

dúù **má** **hèè** he/she/it must climb
 3SG.EMPH 3SG:OPT climb:OPT

cf. **má** **hèè** he/she/it must climb
 3:OPT climb:OPT

When it is used with Perfective forms, the emphatic pronoun **dúù** appears alone, since the third person Perfective pronoun is a zero pronoun (6.1.2.2).

dúù \emptyset **hèè** he/she/it climbed
 3SG.EMPH 3:REAL climb:PFV

cf. \emptyset **hèè** he/she/it climbed
 3:PFV climb:PFV

When **dúù** is used with Imperfective forms, it replaces the third person Imperfective pronoun **ʔà** (as is the case with other nominal subjects; see 6.1.2.3).

dúù \emptyset **héérà** he/she/it climbs / he/she/it is climbing
 3SG.EMPH 3:REAL climb:VN

cf. **ʔà** **héérà** he/she/it climbs / he/she/it is climbing
 3:IMPFV climb:VN

cf. other nominal subjects:

tâw \emptyset **héérà** Taw climbs / Taw is climbing
 Taw 3:REAL climb:VN

For the third person singular of independent as well as Perfective and Imperfective subject pronouns, an additional level of emphasis may be achieved by placing an independent pronoun **dú** (6.1.2.1) before the emphatic pronoun (**dúù**).

dú **dúù** **sàà** **mâh** HE/SHE/IT is in the granary
 3SG.INDEP 3SG.EMPH inside granary

dú **dúù** \emptyset **hèè** HE/SHE/IT climbed
 3SG.INDEP 3SG.EMPH 3:REAL climb:PFV

dú **dúù** \emptyset **héérà** HE/SHE/IT climbs /
 3SG.INDEP 3SG.EMPH 3:REAL climb:VN HE/SHE/IT is climbing

6.1.5.1.2 First-and-second person plural

Emphatic forms of first-and-second person plural subject pronouns are produced in two ways. First, in the case of verbal subject pronouns, an independent pronoun **nànzà** (6.1.2.1) is placed before the verbal subject pronoun.

nànzà 1&2PL.INDEP	nà 1&2	hèè-zí climb:PFV-PL	<i>we</i> (incl.) climbed
cf. nà 1&2	hèè-zí climb:PFV-PL		<i>we</i> (incl.) climbed
nànzà 1&2PL.INDEP	ná 1&2:OPT	hèè-zí climb:OPT-PL	let <i>us</i> climb! / <i>we</i> must climb!
cf. ná 1&2:OPT	hèè-zí climb:OPT-PL		let <i>us</i> climb! / <i>we</i> must climb!

Second, for independent as well as verbal subject pronouns, the last syllable of the pronoun **nànzà** may be lengthened, becoming **nànzàà**. In the case of independent pronouns, this is the only available means of pronominal emphasis.

nànzàà 1&2PL.EMPH	sàḡ inside	màḡ granary	<i>we</i> (incl.) are in the granary
cf. nànzà 1&2PL.INDEP	sàḡ inside	màḡ granary	<i>we</i> (incl.) are in the granary

In the case of verbal subject pronouns, it is used to achieve an additional level of emphasis (cf. forms at the beginning of this section).

nànzàà 1&2PL.EMPH	nà 1&2	hèè-zí climb:PFV-PL	<i>WE</i> (incl.) climbed
nànzàà 1&2PL.EMPH	ná 1&2:OPT	hèè-zí climb:OPT-PL	let <i>US</i> climb! / <i>WE</i> must climb!

6.1.5.1.3 Third person plural

Like emphatic forms of first-and-second person plural subject pronouns (6.1.5.1.2), emphatic forms of the third person plural are produced in two ways, one for verbal subject pronouns and one for subject pronouns in general.

In the case of emphatic verbal subject pronouns, an independent pronoun **dùgzí** (6.1.2.1) is placed before the verbal subject pronoun.

- dùgzí** **ʔàá** **hèè-zí** *they will climb*
 3PL.INDEP 3:IRR climb:FUT-PL
- cf. **ʔàá** **hèè-zí** *they will climb*
 3:IRR climb:FUT-PL
- dùgzí** **má** **hèè-zí** *they must climb!*
 3PL.INDEP 3:OPT climb:OPT-PL
- cf. **má** **hèè-zí** *they must climb!*
 3:OPT climb:OPT-PL

When it is used with Perfective forms, the emphatic third person plural pronoun **dùgzí** appears alone, since the third person Perfective pronoun is a zero pronoun (6.1.2.2). This is parallel to what happens with third person singular (6.1.5.1.1).

- dùgzí** \emptyset **hèè-zí** *they climbed*
 3PL.INDEP 3:REAL climb:PFV-PL
- cf. \emptyset **hèè-zí** *they climbed*
 3:PFV climb:PFV-PL

When the emphatic third person plural pronoun **dùgzí** is used with Imperfective forms, it replaces the third person Imperfective pronoun **ʔà** (as is the case with other nominal subjects; see 6.1.2.3). This is also parallel to what happens with third person singular (6.1.5.1.1).

- dùgzí** \emptyset **héé-zí-rà** *they climb / they are climbing*
 3PL.INDEP 3:REAL climb:VN-PL-VN
- cf. **ʔà** **héé-zí-rà** *they climb / they are climbing*
 3:IMPFV climb:VN-PL-VN

cf. other nominal subjects:

- tâw má** **gǎm** \emptyset **héé-zí-rà** *Taw and Gam climb /*
 Taw with Gam 3:REAL climb:VN-PL-VN *Taw and Gam are climbing*

In the case of independent as well as verbal subject pronouns, the last syllable of the pronoun **dùgzí** may be lengthened and accompanied with L tone, becoming **dùgzî**. In the case of independent pronouns, this is the only available means of pronominal emphasis.

- dùgzî** **sáà** **mâh** *they are in the granary*
 3PL.EMPH inside granary

cf. **dùgzí sàà mậ** they are in the granary
 3PL.INDEP inside granary

In the case of verbal subject pronouns, it is used to achieve an additional level of emphasis (cf. forms at the beginning of this section).

dùgzî ?àá hèè-zí *THEY* will climb!
 3PL.EMPH 3:IRR climb:FUT-PL

dùgzî má hèè-zí *THEY* must climb!
 3PL.EMPH 3:OPT climb:OPT-PL

6.1.5.2 Emphatic object pronouns

Emphatic object pronouns are typically produced by the addition of an independent pronoun (6.1.5.1) following an object pronoun (6.1.3), whether it is basic (non-reflexive) or reflexive. However, as described in this section below, first-and-second person plural and third person basic object pronouns deviate from this pattern. This is evident from the following table:

Emphatic object pronouns

person	basic (non-reflexive)	reflexive
1SG	mí mị	?íní mị
2SG	mú mù	?ínímù mù
1&2SG	nạ nạ	?ínạ nạ
3SG	dú dú	—
3SG.COREF	lé lè	?ílé lè
1PL	rí rì	?írí rì
2PL	ró rò	?író rò
1&2PL	nạnzà	?ínzínzá nạnzà ~ ?ínzá nạnzà
3PL	dùgzí	—
3PL.COREF	ré rè	?íré rè

The following examples illustrate the use of emphatic basic (non-reflexive) object pronouns:

Ø **béé mí mị** he/she/it bit *me*
 3:PFV bite:PFV 1SG.OBJ 1SG

cf. Ø **béé mí** he/she/it bit *me*
 3:PFV bite:PFV 1SG.OBJ

	Ø	kó	ró	rò	he/she/it saw <i>you</i> (pl.)
	3:PFV	see:PFV	2PL.OBJ	2PL	
cf.	Ø	kó	ró		he/she/it saw <i>you</i> (pl.)
	3:PFV	see:PFV	2PL.OBJ		

The following examples illustrate the use of emphatic reflexive object pronouns:

	Ø	ḃéé	ʔílé	lè	he/she/it saw <i>himself/herself/itself</i>
	3:PFV	see:PFV	body:3SG.C/I.POSS.INAL	3SG.COREF	
cf.	Ø	ḃéé	ʔílé		he/she/it saw himself/herself/itself
	3:PFV	see:PFV	body:3SG.C/I.POSS.INAL		
	nà	kó-zí	ʔínzínzá	nànzà	we (incl.) saw <i>ourselves</i>
	1&2	see:PFV-PL	body:1&2PL.POSS.INAL	1&2PL.INDEP	
cf.	nà	kó-zí	ʔínzínzá		we (incl.) saw ourselves
	1&2	see:PFV-PL	body:1&2PL.POSS.INAL		

For first-and-second person plural and the third person plural basic object pronouns, the default (non-emphatic) independent pronoun (6.1.2.1) is used alone.

	Ø	ḃéé	nànzà	he/she/it bit <i>us</i> (incl.)
	3:PFV	bite:PFV	1&2PL.INDEP	
cf.	Ø	ḃéé	zìnzá	he/she/it bit <i>us</i> (incl.)
	3:PFV	bite:PFV	1&2PL.OBJ	
	Ø	ḃéé	dùgí	he/she/it bit <i>them</i>
	3:PFV	bite:PFV	3PL.INDEP	
cf.	Ø	ḃéé	dùgú	he/she/it bit <i>them</i>
	3:PFV	bite:PFV	3PL.OBJ	

In the case of the first person singular basic object pronoun, the default (non-emphatic) independent pronoun (6.1.2.1) is repeated.

	Ø	ḃéé	dú	dú	he/she/it _i bit <i>him/her/it</i> _j
	3:PFV	bite:PFV	3SG.INDEP	3SG.INDEP	
cf.	Ø	ḃèè-rú			he/she/it _i bit <i>him/her/it</i> _j
	3:PFV	bite:PFV-3SG.OBJ			

kpáhlì dùgzí *their stool*
 stool:LF 3PL

cf. **kpáhlì dùgú** *their stool*
 stool:LF 3PL.POSS

A second degree of emphasis may be achieved by using an emphatic independent pronoun (6.1.2.1, 6.1.5.1) in the possessive construction.

kpáhlì ?íí m̀ m̀ *MY stool*
 stool:LF 1SG.POSS 1SG 1SG

6.2 Interrogative pronouns

A set of seven interrogative pronouns is found in Mambay:

bì-?án how much / how many?
káà wíí why?
kín where?
víí who?
wíí what?
?án how?
?ì-kín which?

While four of the pronouns are morphologically simple, three are complex:

bì-?án how much / how many?
 NUM-how?
káà wíí why?
 head/reason:LF-what?
?ì-kín which?
 HEAD-where?

Most commonly, interrogative pronouns co-occur with the question particle **nà** (10.1.2.1). If the interrogative pronoun is the subject of the clause, it comes in the usual subject position (before the verbal complex; see 10.1.1) and the question particle comes at the end of the clause.

víí Ø **húmgò** **nà** who comes? / who is coming?
 who? 3:REAL come:VN QM

wíí Ø **pá-lè** **nà** what has happened?
 what? 3:REAL happen:PERF-3SG.REFL QM

If the interrogative pronoun and question particle are found alone in a clause, or if the interrogative pronoun is found in clause-final position (e.g. as an object, adverbial complement, or predicate nominal), the pronoun and question particle form a single phonological word.

kínà where?:QM		where?
mù vù-m 2SG go:FUT-2SG.REFL	kínà where?:QM	where are you going? / where are you about to go?
wíj-nà what?:-QM		what?
mù pàg wíj-nà 2SG do:VN what?:QM		what are you doing? / what do you do?
?ánà how?:QM		how?
mù tǒg ?ánà 2SG be how?:QM		how are you?
?ì-kínà NOM-where?:QM		which one?
dú ?ì-kínà 3SG.INDEP NOM-where?:QM		which one is he/she/it?

When used with the conjunction **kóó** ‘-ever, even if’ and the question particle **nà** (10.1.2.1), interrogative pronouns become non-interrogative but still exhibit an ‘-ever’ type of indefiniteness (cf. Welmers 1973:435).

kóó bì-?ánà	however much / however many
kóó káà wíj-nà	for whatever reason
kóó kínà	wherever
kóó víj-nà	whoever
kóó wíj-nà	whatever
kóó ?ánà	however
kóó ?ì-kínà	whichever

kóó vínà vâg má ?ígà sêh lâ' gííbò,
-ever who? go: VN with thing hand:LF like alcoholic.drink

má kòhm
3:OPT gather.together:OPT

*whoever goes / is going with something in hand like an alcoholic drink
must gather together [with others]*

The Mambay verb system exhibits richness in the types of available verb structures as well as the functional distinctions represented by combinations of these structures. These possibilities are outlined in the following paragraphs.

The first major section of this chapter (7.1) introduces verb stems. While some are canonical and morphologically simple, others are non-canonical and, in some cases, morphologically complex. Non-canonical verbs result from the application of verbal extensions, derivation of verbs from other parts of speech, the ideophonic nature of some verbs, and borrowing of verbs from other languages.

The set of verbal extensions is the most significant way in which verb stems are composed, and is investigated in detail in 7.2. This set is reminiscent of systems found elsewhere in Niger-Congo. While some extensions found in Mambay are synchronically productive, others are not; also, the semantic transparency of verbal extensions varies.

The subsequent section (7.3) examines verb word morphology. Segmental affixes are dealt with in detail, and the behaviour of tone in verb words is examined. In addition, verbs are classified with respect to transitivity and tone melody. Irregular verbs are also considered.

Verbal inflection is explored in 7.4. Specifically, this section treats basic inflectional categories, which are marked length on subject pronouns and tone on subject pronouns and verb words. It is shown that a division between Indicative and Optative mood is fundamental to the verb system, and Indicative verb forms are also distinguished for realis value and aspect. Negative verb forms, which pattern differently than their affirmative counterparts, are treated separately in 7.5.

The expansion of verbal inflection by means of TAM indicators, possessive constructions and complex inflectional constructions (specifically, serial and auxiliary verbs) forms the substance of the discussion in 7.6. A final section (7.7) discusses composite verbal expressions and their contribution to the verb lexicon.

Unless it has been otherwise specified, example verbs are given in their basic Perfective forms (cf. 7.4.1.1.1.1).

7.1 Verb stem structure

Verb stems may be divided into two groups: canonical (7.1.1) and non-canonical (7.1.2). While a general discussion of canonicity is found in 1.3.1, the two groups of verb stems are formally distinguished in the following discussion.

7.1.1 Canonical verb stems

There are 307 canonical verb stems in the data, all of which are morphologically simple and consist of a monosyllabic root. In the vast majority of cases, it is a heavy syllable.

Attested CV shapes of canonical verb stems, along with the number of occurrences in the data and illustrative examples, are as follows:

root shape	# of occurrences	example
CV	(13)	gé get lost
CCV	(2)	syè shine
CVV	(225)	yáá move away
CVC	(48)	kám weave
CCVV	(17)	gyáá take out, gather up
CCVC	(2)	byáj growl

Although onsets of canonical verb stems are found with a wide variety of consonants, codas are characterized by a restricted consonantal inventory: only **g**, **m** and **ŋ** are attested.

vóg	watch, guide
fám	announce, propagate
díŋ	bow (tr.) in greeting

Transitive as well as intransitive verbs are represented by canonical verb stems. Tone melodies attested with canonical verb stems are discussed in 7.3.2.2.

7.1.2 Non-canonical verb stems

Non-canonical verb stems, which exhibit formal differences from those which are canonical, are of several types. While some non-canonical verb stems are derived from verb roots in the language by means of verbal extensions (7.2), others are derived from various parts of speech (7.1.2.1). In many cases, verbal derivation is historically significant rather than synchronically productive. Along with derived stems, ideophonic verbs (7.1.2.2) and verbs borrowed from other languages (7.1.2.3) pattern as non-canonical verb stems.

Non-canonical stems are uniformly transitive. In contrast to canonical stems (7.1.1), they allow a wide range of consonants in the coda of the stem-initial syllable. Non-canonical stems are also distinguished in that they are limited to tonal Classes 5 and 6, which they represent exclusively. Like morphologically simple stems, non-canonical stems in tonal

Class 5 are monosyllabic; however, non-canonical stems in tonal Class 6 range from one (superheavy; see 2.4.3) to four syllables. Vowels in the non-initial syllables of the stem are either echo vowels (in CV.CVC stems) or the default vowel **i** (in all other cases).

In total, there are 294 non-canonical verb stems of Mambay origin in the data. Attested CV shapes of these stems, along with the number of occurrences and illustrative examples, are as follows:

stem shape	# of occurrences	example	
CVV	(5)	yàà	finish (tr.)
CVC	(131)	sèl	dispute
CCVV	(5)	gwàà	rob
CCVC	(14)	kwàg	drag
CVVC	(19)	ḃòòń	increase (tr.)
CV.CVC	(11)	tígín	drop
CVV.CV	(30)	lòòrí	whip
CVC.CV	(66)	làmgí	stir
CCVV.CV	(1)	rwàhbí	mix, tangle
CCVC.CV	(3)	zyàgrí	mistake
CVV.CV.CV	(1)	?òògìńj	cause to set crawling
CVC.CV.CV	(4)	gòrgìrí	loosen repeatedly
CCVV.CV.CV	(2)	rwàhbìrí	mix or tangle repeatedly
CVV.CV.CV.CV	(1)	?òògìńjrí	cause to set crawling repeatedly / cause repeatedly to set crawling
CVC.CV.CV.CV	(1)	kpàtìgìńjrí	cause to become distant repeatedly / cause repeatedly to become distant

7.1.2.1 Verb stems derived from other parts of speech

In addition to arising from derivation by means of verbal extensions (7.2), it appears that a few verb stems are derived from nouns and adjectives; while there is no verb root corresponding to certain verb stems, these other parts of speech from which they are presumably derived are attested. For monosyllabic roots, the derivational template adds **gi** to the end of it, and assigns the word to tonal Class 6 (cf. 7.3.2.2).

pǔ'	whiteness	→	pù'gí	become white
sâ'	elderly	→	sà'gí	become old, wear out

When the source word is more than one syllable, the template functions in two ways. If the source word exhibits reduplication, the first CVX unit is taken and treated like a monosyllabic source (cf. directly above).

gòrògòrò	loose	→	gòrgí	loosen
nùmńm	soft	→	nùmngí	soften

If (as is attested for other cases) the source word begins with a non-reduplicated CVX.CV shape, the template retains the CVXC part of the sequence and adds only **i** to the end of it.

kpìgzìm	thick	→	kpìgzí	thicken
ràhbá	poverty	→	ràhbí	impoverish, become poor

Examples of verbs which appear to be derived from nouns are as follows:

gbòogá	wideness	→	gbòogí	enlarge, widen
kpâtgá	distance (n.)	→	kpâtgí	distance (tr.)
pǔ'	whiteness	→	pù'gí	become white
ràhbá	poverty	→	ràhbí	impoverish, become poor
rág.bà	triviality, trifle	→	rág.bí	set wandering, make trivial

Examples of verbs which appear to be derived from adjectives (most of which are ideophonic; see 7.1.2.2) are as follows:

gòrògòrò	loose	→	gòrgí	loosen
nùmnyùm	soft	→	nùmngí	soften
kpìgzìm	thick	→	kpìgzí	thicken
sâ'	elderly	→	sâ'gí	become old, wear out
sìhsìh	fresh	→	sìhgí	refresh

7.1.2.2 Ideophonic verb stems

A small group of ideophonic verb stems is found in Mambay. The ideophonic nature of these verbs is, like that of ideophones in other word classes, pervasive but difficult to demonstrate for all examples; and as for Mambay ideophones in general, it is put forward in light of the recurrent convergence of non-canonical structures and sound symbolism (1.3.1, 8.2).

Ideophonic verb stems exhibit basic structures limited to non-canonical verbs: a CVX.CV stem shape, and Class 5 or 6 tone melody (7.1.2, 7.3.2.2.1). And like other non-canonical verbs, they are uniformly transitive (7.1.2, 7.3.2.1.2).

Ideophonic verb stems exhibit, in addition, consonant distribution patterns that are not found with other types of verb stems. In the following examples, four geminate obstruents are attested. In addition, the consonants **t**, **b** and **vb**, which are never found in the second syllable of any other type of verb stem, are attested among ideophonic verbs in the data. Finally, the nasalized vowel **ɔ̃**, which is found in only two morphologically simple items in the data (3.1.2), appears in this list of ideophonic verbs:

bittí	pull away
gbòvvi	wash clothes
m̀zzí	sprinkle

nògtí	knead
pùgvbí	scatter
ràg.bí	wander
rwàhbí	mix, tangle
tùttí	pluck
vòbǵí	daub
vbìttí	unroll shutters

A few ideophonic verbs appear to be derived from ideophonic adjectives (7.1.2.1, 8.4).

gòrògòrò	loose	→	gòrgí	loosen
nùmnùm	soft	→	nùmgí	soften
kíríkìrì	spherical	→	kìrgí	ball up
kpìgǵim	thick	→	kpìgǵí	thicken

7.1.2.3 Borrowed verb stems

A handful of verb stems borrowed from Fulfulde are used in Mambay. Usage is much more frequent among Mambay speakers in ethnically mixed communities (cf. 1.2.3.1). The tone melody associated with these verbs is the same as that of other derived verbs, namely Class 6 (7.3.2.2). While four of the five examples below conform to CV patterns found with other non-canonical verb stems of Mambay origin (cf. beginning of 7.1.2), the CV pattern of **màrí** ‘possess’ is unique (Fulfulde source vocabulary for these examples is from Noye 1974).

bèddí	increase	(cf. Fulf. <i>besd-</i>)
hàbdí	fight	(cf. Fulf. <i>hab-</i>)
jàngǵí	learn	(cf. Fulf. <i>jaŋⁿg-</i>)
màrí	possess	(cf. Fulf. <i>mar-</i>)
vìndí	write	(cf. Fulf. <i>winⁿd-</i>)

7.2 Verbal extensions

Verbal extensions are the primary way by which verb stems in Mambay become derived (cf. 7.1.2). Several verbal extensions may be easily recognized by virtue of their productivity and because their semantic and morphological contribution is readily identifiable; however, others are less productive and are better considered vestiges of a historical system of verbal extension within Niger-Congo. These historical origins will not be addressed here, but the methodology and findings of Elders (2000:172–94) concerning Mundang are relevant to a discussion of this topic in Mambay.

In addition to their role in the Mambay verb system, verbal extensions appear to be related to vestigial suffixes found on nouns (5.1.3.2). This topic has been addressed in Anonby 2007b:REF.

In the sections that follow, an inventory of verbal extensions is provided (7.2.1). After a discussion of the distribution of verbal extensions (7.2.2), both synchronically productive

and unproductive extensions (7.2.3 and 7.2.4) are described. Attested combinations of verbal extensions are catalogued (7.2.5), and a problem concerning the semantic and phonological relationship among several of the suffixes is examined (7.2.6).

7.2.1 Inventory of verbal extensions

Sixteen verbal extensions have been identified in Mambay. These extensions vary greatly in their productivity and, to some extent, in their structure.

Three of the verbal extensions are highly productive (7.2.3); they may be applied to almost any verb root, and they contribute a definable semantic component to the resulting stem.

- n (#1) causative
- ri iterative/intensive
- gi iterative/intensive

Each of these extensions results in tonal Class 6 verb stems with an expanded segmental structure.

The remaining thirteen verbal extensions (7.2.4) are attested to varying degrees as part of derived verb stems, but are not synchronically productive. In most cases, their specific contribution to the meaning of a verb stem is difficult to identify. These extensions, which have been arranged from high to low frequency, are as follows:

- r intensive
- g extensive
- l separative
- zi pluractional
- n (#2)
- d
- b
- w
- m
- m
- ŋ
- ʔ (glottalization)
- (tonal extension)

With the exception of **-zi**, which behaves like the three productive extensions above, the application of these extensions results in tonal Class 5 verb stems (7.3.2.2). There is (also excepting **-zi**) no expansion of the segmental structure for stems containing these extensions; rather, the extension consonants appear to have replaced a timing unit of the historical source root's long vowel.

Nasality does not spread from a verbal extension onto a root, or vice versa; nor does it spread from one extension to another when two are found in combination.

hà-n	render	cf. háá	come back, go back
làà-ń	feed	cf. làà	eat
nàm-rí	grind repeatedly	cf. nám	grind
rìm-rí	immerse	cf. rím	dip
dè-'m-rí	harmonize	cf. dè-'m	comment
sù-m-rí	know definitively	cf. sù-m	know

7.2.2 Distribution

Almost all verbs may take extensions; the only exceptions which have been identified are the irregular verbs **vè** 'go,' **húm** 'come' and **tògó** 'be' (7.3.3).

The existence of verbal extensions in the first place is suggested by recurrent sets of verbs with similarities in both meaning and segmental structure. In most cases, a source verb root may be identified for verbs stems containing extensions.

gù	answer, accept, admit	gìd'	accept definitively
		gìd'gí	accept definitively and repeatedly
		gùń	persuade (i.e. cause to accept)
		gìl	give one's opinions
		gìlgí	give one's opinions repeatedly or in a disorderly fashion
		gìr	insult
		gìrgí	insult vehemently or repeatedly
háá	come back, go back	hààrí	coil
		hàlgí	come/go back repeatedly
		hàn	render
		hàr	hurry
súú	think, crush	sùd'	trickle
		sùg	sink
		sùlgí	think repeatedly, crush repeatedly
		sùm	know
		sùm-rí	know definitively
		sùr	put in order
		sùùń	cause to think, cause to crush
		sùùrí	mix

zóó rise, greet

zòl leave

zòlgí greet profusely

zò'm fix

zòòń cause to emerge

In other cases, it appears that although there is no identifiable source verb, the extensions associated with the stems may be substituted. For example, while there is no synchronically attested verb **káá**, three stems appear to be related to this hypothetical root:

kàn pass, exceed, abuse

kànní overtake, overdo, cause to pass

kàr put, set

Occasionally, neither a source verb nor a pattern of substitution is evident. In such cases, the contribution of a verbal extension is suggested based on the verb stem's conformity to the tonal patterns (Classes 5 and 6) associated with more typical extended verbs, which are obviously derived. Also, when possible, a stem's intimation of the semantic contribution of a particular verbal extension is considered (7.2.3, 7.2.4).

gù?ún accompany (cf. **-n** (2))

lìgín tickle (cf. **-n** (1) causative)

rìgrí roll (tr.) (cf. **-ri** iterative/intensive)

zèhmgí pound (cf. **-gi** iterative/intensive)

More than one verbal extension may be found with a single stem, as shown in the following example:

-l (separative) + -gi (iterative/intensive):	dwàh	shoot, sting
	dwàhl	shoot several times
	dwàhlgí	shoot repeatedly

A list of attested combinations is provided in 7.2.5.

7.2.3 Synchronically productive verbal extensions

7.2.3.1 Causative **-n**

The extension **-n** is the most productive verbal extension in Mambay, and contributes a causative meaning to the stems in which it is found. (An alternative causative construction formed by means of the auxiliary verb **pá** 'make, do' is presented in 7.6.3). When it is applied to a verb stem ending in a long vowel other than a glottalized vowel, it is added to the existing heavy root syllable, thereby making it superheavy (2.4.3):

hèèn lift

cf. **hèè** climb, go up

lààn feed

cf. **làà** eat

sàhń cause to rest	cf. sàh rest
vìń frighten, threaten	cf. ví fear
yààń cause to move away	cf. yáá move away

When **-n** is applied to a stem that ends with a glottalized vowel (V'), this vowel is reinterpreted as a V?V sequence: the glottal stop is discrete, and the second vowel, which is syllabic, echoes the first.

sà?án sell	cf. sá' buy
tù?ún teach	cf. tú' show, teach

Whenever **-n** is applied to a stem ending in a short vowel, the consonant **g** and a syllabic echo vowel are inserted between the stem and the extension.

dògón cause to drink	cf. dó drink
gègén lose (tr.)	cf. gé get lost

Whenever **-n** is applied to a stem that already ends with **g**, the syllabic echo vowel is inserted between the verb root and the extension.

hègén dry (tr.)	cf. hég dry up
lùgún cause to leave	cf. lúg go out

Whenever it is applied to a stem that ends with any other consonant, it is realized as **-nĩ**.

ḃàrnĩ heal (tr.)	cf. ḃàr get better
?ìnnĩ load	cf. ?ìn lift, carry

Occasionally the function of **-n** diverges from its prototypical use as a causative morpheme. In each case, however, some sort of semantic association between the root and the stem which has been extended with **-n** is still evident.

dùùń reveal	cf. dùù shout, squeak, humiliate
kàhń tip over	cf. káh like, ask, tip over
nàhń drag	cf. náh take out
tù?ún teach	cf. tú' show, teach

A second verbal extension **-n**, which behaves differently and whose semantic value is indistinct, is discussed in 7.2.4.5.

7.2.3.2 Iterative/intensive **-ri**

-ri is another highly productive verbal extension. It typically contributes an iterative or intensive semantic value to the stems in which it is found; still, additional specific meanings brought about by the lexicalization of these stems are common. Its relation to

the intensive extension **-r** and to the iterative/intensive extension **-gi** is described in detail in (7.2.6).

The distribution of **-ri** is phonologically restricted; it is never attached to verb stems which end in an alveolar consonant or **-ŋ**. Verbs containing **-ri** include the following:

bà'rí	fill up with air	cf. bá'	fill up (tr.)
gbàhrí	help	cf. gbáh	catch, thicken, benefit
hààrí	coil	cf. háá	come back, go back
hàgrí	shatter	cf. hág	break
ràbrí	hug repeatedly	cf. ràb	hug
rìmrí	immerse	cf. rím	dip

7.2.3.3 Iterative/intensive **-gi**

-gi is a third highly productive verbal extension. Like **-ri**, it typically contributes an iterative or intensive semantic value to the stems in which it is found, and additional specific meanings brought about by the lexicalization of these stems are common. Its relation to the extensive extension **-g** and to the iterative/intensive extension **-ri** is described in detail in 7.2.6.

The distribution of **-gi** is phonologically restricted in that it never attaches to verb stems ending with **g**. Verbs containing **-gi** include the following:

hàdǵí	break into pieces	cf. hàd	cough, break something soft
làŋǵí	stagger	cf. láj	move
làrgí	rinse repeatedly	cf. làr	rinse
ʔòòǵí	crawl	cf. ʔóó	braid (rope), compress
sààǵí	deceive, flatter	cf. sáá	tell, trick, finish
làmgí	stir	cf. làm	prepare hot peanut drink

7.2.4 Other verbal extensions

In addition to synchronically productive verbal extensions (7.2.3), there appear to be a number of other extensions which have applied historically. A few of these extensions are moderately well-attested and, in some cases, the identification of a common meaning can be attempted (7.2.4.1–7.2.4.4). Others are poorly attested; their historical involvement in verbal derivation has been discriminated in reference to their tonal and (in most cases) segmental structure (7.2.4.5; see also 7.3.2.2) (cf. Dimmendaal 2000:182).

7.2.4.1 **-r**

The extension **-r** prototypically intensifies the meaning of the stems in which it is found. For a discussion of the relationship between **-r** and **-ri**, see 7.2.6. Examples of stems containing **-r** include:

dèr	chop	cf. déé	cut
gìr	insult	cf. gù	answer, accept, admit
hàr	hurry	cf. hàà	come back, go back
hàṛ	tear	cf. hàá	squeeze
nàr	drive	cf. náá	touch
zàr	tread	cf. zàà	cross

7.2.4.2 -g

Verb stems which contain the extension **-g** prototypically signal actions in which things spread out; this is reminiscent of the “extensive” extension whose meaning is described Schadeberg (1994) and whose contribution to verb stems in Mundang is presented in Elders (2000:176–9). For a discussion of the relationship between **-g** and **-gi**, see 7.2.6. Examples of stems containing **-g** include:

nìg	have diarrhea	cf. níí	defecate
tàg	sweep clean, plunder	cf. táá	stir
vbìg	elude, avoid	cf. vbíí	cut
ràg	straddle, sling	cf. ráá	spread out
'wàg	suck	cf. 'wáá	split
zàg	refuse, divorce	cf. zàà	cross

7.2.4.3 -l

The extension **-l** is moderately productive. Formally, it resembles the “separative” extension **-l** in Mundang which Elders (2000:174), based on the definition provided in Schadeberg (1982b:61), sees as describing movement away from an original position or state. Synchronically, however, this semantic value is not fully transparent in Mambay, nor is it completely consistent. Verb stems containing **-l** include the following:

ḃùl	divide	cf. ḃúú	create, sprout
dwàhl	shoot several times	cf. dwáh	shoot, sting
kìl	wander	cf. kíí	set in motion
vbìl	boil furiously, hack	cf. vbìì	cut, cut up
zàl	explain	cf. zàà	cross, pull
zòl	leave	cf. zóó	rise, greet

7.2.4.4 -zi

The extension **-zi** is modestly productive. It is formally similar to other plural morphemes, which contain **z** or **zi** (cf. 5.5, 5.9.2.1, 7.3.1.1); semantically, the data allow that it could have originated as a pluractional extension. Normally, pluractional extensions signal a plurality of verbal action; this may be performed by several agents or experienced by several patients or instruments, or it may be an action performed in several places (Newman 1990:53ff., Elders 2000:183). Verb stems containing **-zi** include the following:

lùgzí	resemble	cf. lúg	go out, sprout
n̩hzí	approach with intention	cf. n̩h	(happen) to approach
zì'zí	nibble in several places	cf. zìr	gnaw
ʔìhzí	wipe off excrement	cf. ʔìh	grunt

The fact that the verbal extension **-zi** is distinct from the verbal plural morpheme **-zí** (7.3.1.1) is demonstrated by their distribution in the following set of words:

lúg	he/she/it went out	lúgzí	he/she/it went out
lùgzí	he/she/it resembled	lùgzìzí	they resembled

7.2.4.5 Unproductive verbal extensions

The unproductive verbal extensions listed here are more difficult to establish than those found above. There are numerous cases of formally and semantically similar correlate verbs from which they may have been derived historically, but not as many as for productive extensions. Still, the inventory of unproductive extensions given here serves (at least) as a catalogue of forms which are like the more obvious verbal extensions of the same shape in their non-canonical tone melody (Class 5) and, usually, segmental composition (especially that of the coda). Unproductive extensions which are marked segmentally include: **-n** (#2), **-ɗ**, **-b**, **-m**, **-ŋ** and **-w**. There also appears to be one unproductive extension marked with glottalization, and one marked only by a tonal alternation.

The extension **-n** (#2) shares its segmental shape with the causative extension **-n** (7.2.3.1). However, it does not contribute a uniformly causative semantic value, nor does it increase the segmental content of the verb (7.2.1). Verb stems containing **-n** (#2) include the following:

hàn	render	cf. háá	come back, go back
tàn	weave, braid	cf. táá	stir
sìn	pick up tiny things	cf. sì	covet
yàn	spread out (tr.)	cf. yàà	sit, stay, be

The following verbs contain **-ɗ**:

kùɗ	study, learn	cf. kùù	gather (firewood)
'wàɗ	have a headache	cf. 'wáá	split
yàɗ	feel, rub, massage	cf. yáá	move away
zàɗ	tremble	cf. zàà	cross

The following verbs contain **-b**:

ʔàb	grill, fry	cf. ʔàà	open, lose taste
lìb	straighten	cf. lì	measure, weigh, try

ràb	hug	(no similar root)
sìb	hatch	cf. sì covet

The following verbs contain **-m**:

dè'm	comment	cf. dém	merit consideration
zò'm	fix	cf. zò	rise

The following verbs contain **-m**:

sùm	know	cf. sùù	think, crush
vbòm	divide, spread, ruin	(no similar root)	

The following verb contains **-ŋ**:

tìŋ	start	cf. tì	become, clip, serve (food)
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The following verb contains **-w**:

nà'w	spank	cf. náá	touch
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The following verb may contain a glottalization extension **-ʔ**:

kùʔ	put, store, set up	cf. kùù	gather (firewood)
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Verbal derivation may be marked only by tone (change to Class 5) in the case of a few verbs (cf. 7.3.2.2; see also Elders 2000:183 for a similar situation):

gwàʔ	disappear	cf. gwáʔ	laugh
gwàà	rob	(no similar root)	
gyàà	care for a child	cf. gyáá	take out, gather up
syàà	diminish	(no similar root)	
yàà	finish	cf. yáá	move away

Only the five verbs listed above appear to contain a tonal verbal extension. A point worth noting is that the onset in the first four verb stems is complex (cf. 2.3.3.1), and that the fifth stem starts with a complex (preglottalized) palatal consonant (cf. 2.1.5). However, no further conclusion has been reached concerning a relation between these structures and the tonal verbal extension.

7.2.5 Combinations of verbal extensions

Up to three verbal extensions may be applied to a single verb root in Mambay. An example of each attested sequence of verbal extensions is given in this section. Sequences of two extensions are as follows:

-b + -ri (iterative/intensive):	ràbrí cf. ràb	hug repeatedly hug
-d + -gi (iterative/intensive):	kùdǵí cf. kúú cf. kùd	learn continually gather (firewood) study, learn
-g + -ri (iterative/intensive):	nǵrǵí cf. nǵ	defecate diarrhea repeatedly defecate diarrhea
-l + -gi (iterative/intensive):	dwàhlǵí cf. dwáh cf. dwàhl	shoot repeatedly shoot, sting shoot several times
-'m + -gi (iterative/intensive):	dè'mǵí cf. dè'm	harmonize comment
-'m + -ri (iterative/intensive):	dè'mrǵí cf. dè'm	comment repeatedly comment
-n (#2) + -gi (iterative/intensive):	nǵngǵí cf. nǵí	defecate repeatedly defecate
-n (#2) + -n (#1) (causative):	ʔinnǵí cf. ʔíí cf. ʔìn	load marry lift, carry
-r (intensive) + -gi (iterative/intensive):	dèrgǵí cf. déé cf. dèr	cut up in pieces repeatedly chop cut off
-r (intensive) + -n (#1) (causative):	bàrnǵí cf. bàr	heal get better
-'w + -gi (iterative/intensive) or -ri (iterative/intensive)	nà'wǵí = nà'wrǵí cf. náǵ cf. nà'w	spank repeatedly touch spank

Three verb stems which appear to contain three verbal extensions have been attested. In one case (-ri), an extension is repeated for hyperbolic effect.

-g + -ri (iterative/intensive) + -ri (iterative/intensive):	hàgrǵrǵí cf. háá cf. hàg	shatter (hyperbolic) come back, go back break
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	cf. hàgrí	shatter
-l + -gi (iterative/intensive) + -ri (iterative/intensive):	dwàhlgìrí	shoot definitively and repeatedly
	cf. dwáh	shoot, sting
	cf. dwàhl	shoot several times
	cf. dwàhlgí	shoot repeatedly
-gi (iterative/intensive) + -ri (iterative/ intensive) + -n (#1) (causative):	ʔdògìrìnj	cause to set crawling repeatedly / repeatedly cause to set crawling
	cf. ʔóó	braid (rope), compress
	cf. ʔdògí	set crawling
	cf. ʔdògìrí	set crawling repeatedly
	cf. ʔdògìnj	cause to set crawling

7.2.6 Relations among the extensions **-ri**, **-gi**, **-r**, and **-g**

From a semantic as well as phonological point of view, the four verbal extensions **-ri**, **-gi**, **-r**, and **-g** (7.2.1) appear to be intimately connected. Consequently, any decision to distinguish or conflate these extensions needs to be defended.

An initial comparison of verbs with **-ri**, **-gi**, **-r** and **-g** reveals an apparent contrast among the four extensions. In the following set of words, the four verbal extensions are attached to roots which appear to be phonologically equivalent. While **-ri** and **-gi** constitute a new syllable in an extended verb stem (7.2.1), **-r** and **-g** replace the second timing unit of a long vowel in the verb root to which they are attached (7.2.1) as follows:

hààrí coil	cf. háá come back, go back
sààgí deceive, flatter	cf. sáá tell, trick, finish
hàr hurry	cf. háá come back, go back
tàg sweep, clean, plunder	cf. táá stir

However, the relationships among the four extensions are more complex than this apparent contrast suggests. In the following sections, the semantic and distributional relationships between pairs of similar forms are discussed. There, it is suggested that **-ri** and **-gi** are partially complementary, and that while **-ri** and **-r** are also partially complementary, **-gi** and **-g** should be regarded as contrastive. Finally, **-r** and **-g** demonstrate clear evidence of contrast.

*Partial complementarity of **-ri** and **-gi***

Although contrast is presented immediately above for the verbal extensions **-ri** and **-gi**, an examination of their lexical distribution, semantic value and phonological distribution reveals a surprising degree of complementarity.

Unlike the corresponding extensions **-r** and **-g** (cf. below), **-ri** and **-gi** are virtually lexically complementary in the data; a given verb root may be associated either with **-ri**

or with **-gi**, but usually not with both. The only exceptions are the following pairs of stems:

dè'mgí	harmonize
dè'mrí	comment repeatedly
cf. dè'm	comment
nà'wgí	spank repeatedly =
nà'wrí	spank repeatedly
cf. nà'w	spank

While one substitution makes a difference in meaning, the other does not.

The comparable semantic value of the extensions **-ri** and **-gi** supports a similar pattern of complementarity. Both forms signal actions which are repeated or intensified (7.2.3). Since the two extensions are typically found with complementary sets of verb roots (see previous paragraph), a direct and representative comparison of their meaning is not possible. These extensions are variously found on verbs with iterative or intensive values: on the one hand, verbs with **-ri** are about evenly divided between those which contain iterative and intensive meanings; on the other hand, verbs in which **-gi** carries an iterative meaning are arguably more common than those which are intensive, but not significantly so.

Finally, there is partial complementarity in the phonological distribution of the two extensions (7.2.3). It is true that either may be associated with a verb stem ending in a vowel or a labial consonant. However, in other environments, complementarity is clear: while on the one hand only **-ri** is found with verb roots ending in **g**, on the other hand only **-gi** is found with roots ending in an alveolar consonant or **ŋ**.

*Relationships within the extension pairs **-ri** / **-r** and **-gi** / **-g***

Although apparent contrast between **-ri** and **-r** and between **-gi** and **-g** is shown above (7.2.6), the relationship between members of these extension pairs is more complex than this.

There is an obvious structural similarity between **-ri** and **-r** and between **-gi** and **-g**. The possibility of complementarity is especially plausible in light of **i**-insertion phenomena found at morpheme boundaries elsewhere in the language: for example, the causative extension **-n** is realized as **-ni** in certain morphological contexts (7.2.3.1; for other similar examples, see 5.2.2, 7.1.2.1, 7.1.2.2 and 7.4.2.1). A further indicator of complementarity is that whenever these extensions are one of two associated with the same root, **-r** or **-g** is always placed first, while **-ri** or **-gi** is invariably placed second (7.2.5).

This evident complementarity is disrupted by the semantic values associated with each form (7.2.3–7.2.4). On the one hand, **-gi** and **-g** are semantically distinct: whereas **-gi** bears an iterative or intensive value, **-g** bears an extensive value and is clearly neither

iterative nor intensive. On the other hand, a semantic distinction is more difficult to draw between **-ri** and **-r**. Like **-gi**, **-ri** carries an iterative or intensive value. However, **-r** shares only the intensive value of **-ri** and is never iterative.

Based on these semantic considerations, and despite the partial phonological and morphological complementarity that is evident, it is necessary to posit contrast between **-ri** and **-r** and between **-gi** and **-g**.

Contrast between -r and -g

The preceding discussion shows that a partial complementarity exists between the extensions **-ri** and **-gi** as well as between members of the extension pairs **-ri** / **-r** and **-gi** / **-g**. It is therefore reasonable to consider whether the extensions **-r** and **-g** may also be partially complementary. However, this is not the case; the distribution of **-r** and **-g** is contrastive in some word pairs. Examples which show this are as follows:

sùg	sink
sùr	put in order
cf. súú	think, crush
zàg	refuse, divorce
zàr	tread
cf. zàà	cross

7.3 Verb word morphology

Verb words, along with subject pronouns (6.1.2, 7.4) and expansions of verb forms (7.6), are fundamental in furnishing morphological structures which communicate the functions of verbal inflection in Mambay (7.4). In the present section, affixational possibilities are catalogued (7.3.1) and the tonal behaviour of the verb word is discussed (7.3.2.2.3). Elements of verb classification (7.3.2) and are then followed by a description of the morphology of irregular verbs (7.3.3).

7.3.1 Affixation

Several types of affixes are found with verb words in Mambay. The most basic affixes, which are tonal inflection morphemes, are treated in the section on verb classification (7.3.2), since they fall into a number of lexically determined classes.

All of the other morphemes which are part of verb words are suffixes. Basic inflectional distinctions are expressed by the verbal plural morpheme **-zí** (7.3.1.1), reflexive suffixes (7.3.1.2) and the Perfect suffix **-rì** (7.3.1.3). Other verb suffixes are the dummy object suffix **-nà** (7.3.1.4), several object suffixes (7.3.1.5) and the directional suffix **-ìn / -n̄** 'to here' (7.3.1.6). Combinatory possibilities of verbal suffixes are listed in 7.3.1.7.

7.3.1.1 The verbal plural affix -zí

The verbal affix **-zí** is used to specify plurality for three of the five plural persons (6.1.1): first-and-second (1&2) person, third person, and third person co-referential. For the 1&2 person and the third person, its importance is obvious, since plurality is not specified for the subject pronoun; singular and plural verbal subject pronouns are identical (6.1.1.5). For plurals of these three persons, the affix **-zí** is obligatory when there is no reflexive suffix on the verb, as the following singular/plural pairs show:

nàá 1&2:IRR	hèè climb:FUT	we (you (sg.) and I) will climb
nàá 1&2:IRR	hèè-zí climb:FUT-PL	we (three or more people, inclusive) will climb
?àá 3:IRR	hèè climb:FUT	he/she/it will climb
?àá 3:IRR	hèè-zí climb:FUT-PL	they will climb
lèé 3SG.COREF:IRR	hèè climb:FUT	he/she/it (coref.) will climb
rèé 3PL.COREF:IRR	hèè-zí climb:FUT-PL	they (coref.) will climb

When third person plural or third person plural co-referential reflexive suffixes (7.3.1.2) are found on the verb word, the presence of **-zí** is optional and serves only to make the plurality of the subject explicit. This is shown in the following plural examples:

?àá 3:IRR	hèè-ré climb:FUT-3PL.REFL	they will climb
= ?àá 3:IRR	hèè-zì-ré climb:FUT-PL-3PL.REFL	they will climb
rèé 3PL.COREF:IRR	hèè-ré climb:FUT-3PL.REFL	they (coref.) will climb
= rèé 3PL.COREF:IRR	hèè-zì-ré climb:FUT-PL-3PL.REFL	they (coref.) will climb

However, there is no optional use of **-zí** to mark plurality on verbs with a 1&2 person plural reflexive suffix; plurality is already explicit in the suffix (which in turn appears to have historically subsumed the form and role of **-zí**).

nàǎ **hèè-zínzá** we (three or more people, inclusive) will climb
1&2:IRR climb:FUT-1&2PL.REFL

cf. the singular counterpart:

nàǎ **hèè-ná** we (you (sg.) and I) will climb
1&2:IRR climb:FUT-1&2SG.REFL

7.3.1.2 Reflexive suffixes

A set of reflexive suffixes is used to mark subject agreement on most intransitive (7.3.2.1) and detransitivized (7.3.2.1.2) verb forms. The suffix set, which resembles many of the other pronominal sets (6.1), is as follows:

1SG	-ní
2SG	-ń ~ -nǎm
1&2SG	-nǎ
3SG	-lé
3SG.COREF	-lé
1PL	-rí
2PL	-ró
1&2PL	-zínzá ~ -zínǎ
3PL	-ré
3PL.COREF	-ré

Third person and third person co-referential reflexive suffixes are identical. They resemble co-referential object pronouns (6.1.3), and may have originated from these historically.

Long and short forms of the 1&2 person plural reflexive suffix, **-zínzá** and **-zínǎ**, are also found in other pronominal paradigms (see 6.1.3, 6.1.4).

A number of morphophonological alternations accompany the application of reflexive suffixes to verb stems. This is evident with the second person singular reflexive suffix **-ń ~ -nǎm** (7.3.1.2.1) as well as **r**-initial and nasal-initial reflexive suffixes (7.3.1.2.2 and 7.3.1.2.3). In addition, the irregular verb **vè** ‘go’ exhibits extensive suffix-to-stem vowel assimilation (7.3.3.1).

7.3.1.2.1 The second person singular reflexive suffix **-ń ~ -nǎm**

When attached to a stem ending with a long vowel other than a glottalized vowel, the second person singular reflexive suffix is realized as **-ń**.

mù **gì-ím** you consented
2SG accept:PFV-2SG.REFL

mù **syàh-ím** you got cold
2SG get.cold:PFV-2SG.REFL

When attached to a stem ending with a glottalized vowel (Vʔ), this vowel is reinterpreted as a VʔV sequence: the glottal stop is discrete, and the second vowel, which is syllabic, echoes the first.

mù **fìʔ-ím** you revived
2SG blow:PFV-2SG.REFL

mù **tèʔ-ém** you walked
2SG walk:PFV-2SG.REFL

When the second person singular reflexive suffix is attached to a stem ending in a consonant or a short vowel, it is typically realized as **-nV́m** (where V is a vowel which echoes the final vowel of the stem).

mù **bàr-nám** you got better
2SG get.better:PFV-2SG.REFL

mù **nú-núm** you had slept
2SG sleep:PLUPERF-2SG.REFL

This includes mid vowels, which are restricted from bearing nasality in most contexts (cf. 3.1.1). This suggests that the mid quality of the vowel and/or its nasality may be an effect of its phonetic context rather than an underlying trait.

mù **ʔèr-ném** you got up
2SG get.up:PFV-2SG.REFL

mù **ròv-nóm** you scalded yourself
2SG scald:PFV-2SG.REFL

When the second person singular reflexive suffix is attached to a stem ending in a stop, it is optionally realized as **-V́m** (where V is a vowel which echoes the final vowel of the stem).

mù **bàg-nám ~ bàg-ám** you got stuck
2SG get.stuck:PFV-2SG.REFL

mù **lib-ním ~ lib-ím** you straightened up
2SG straighten:PFV-2SG.REFL

Finally, whenever the suffix is attached to an **ŋ**-final verb stem, it is realized as **-gV̄m**. This realization prevents from **ŋ** appearing in onset position (cf. 2.1.2.1).

m̀ **ḃóŋ-góm** you were revolted
2SG revolt:PFV-2SG.REFL

m̀ **dúŋ-gúm** you bent down
2SG bend.down:PFV-2SG.REFL

7.3.1.2.2 r-initial reflexive suffixes

When an **r**-initial reflexive suffix is suffixed to a verb stem ending in **r**, the resulting **r + r** sequence is shortened to a single **r**.

r̀ **ʔèr** + **-r̀** → **r̀ ʔèr̀** we (excl.) had gotten up
1PL get.up:PLUPERF -1PL.REFL

r̀ **ʔèr** + **-ró** → **r̀ ʔèró** you (pl.) had gotten up
2PL get.up:PLUPERF -2PL.REFL

∅ **ʔèr** + **-ré** → **ʔèré** they had gotten up
3:PFV get.up:PLUPERF -3PL.REFL

7.3.1.2.3 Nasal-initial reflexive suffixes

When nasal-initial reflexive suffixes follow a stem-final oral sonorant **ḃ ḍ** or **l**, the nasality of the pronoun assimilates to the left and the stem-final oral sonorant is realized as the respective nasal counterpart **'m 'n** or **n** (cf. 3.4.3.2).

m̀ **sàḃ** + **-ǹ** → **m̀ sà'mǹ** I vomited
1SG vomit:PFV -1SG.REFL

m̀ **zàḍ** + **-nV̄m** → **m̀ zà'nnám** you trembled
2SG tremble:PFV -2SG.REFL

ǹ **zòl** + **-ǹ** → **ǹ zònǹ** we (you (sg.) and I) left
1&2 leave:PFV -1&2SG.REFL

7.3.1.3 The Perfect suffix -r̀

The suffix **-r̀** is only found on transitive verbs (7.3.2.1.2), where it marks the Perfect tense (7.4.1.1.1.2). Often, Perfect forms with **-r̀** are found without an explicit object; this suggests that **-r̀** satisfies (or at least relieves) transitivity requirements.

m̀ **làà-r̀** I have eaten (something)
1SG eat:PERF-PERF

m̀ **póó-r̀** I have payed (something)
 1SG pay:PERF-PERF

The suffix **-r̀** cannot be treated as a dummy object, however, since it allows an accompanying explicit object or object pronoun (in contrast to **-n̩**; see 7.3.1.4).

m̀ **làà-r̀** **?ígà** I have eaten something
 1SG eat:PERF-PERF thing

m̀ **kó-r̀** **m̀** you have seen me
 2SG see:PERF-PERF 1SG.OBJ

Several morphophonological alternations accompany the suffixation of **-r̀** to verb stems. When **-r̀** is suffixed to a verb stem ending in **r**, the stem vowel is lengthened and the **r** of the stem disappears.

m̀ **dě** + **-r̀** → **m̀** **dèér̀** I have cut (something) off
 1SG cut.off:PERF -PERF

m̀ **wǎ** + **-r̀** → **m̀** **wàár̀** I have left (something)
 1SG leave:PERF -PERF

When **-r̀** is suffixed to a verb stem ending in either **n** or **l**, the **r** of the suffix assimilates to the stem-final consonant.

m̀ **kǎ** + **-r̀** → **m̀** **kǎnǹ** I have passed (something)
 1SG pass:PERF -PERF

m̀ **lǒ** + **-r̀** → **m̀** **lǒll̀** I have crunched (something)
 1SG crunch:PERF -PERF

When **-r̀** is suffixed to verb stems ending in a nasal consonant or a nasalized vowel, nasality spreads from the stem to the suffix.

m̀ **dún** + **-r̀** → **m̀** **dún̩r̀** I have bent (something) down
 1SG bend.down:PERF -PERF

m̀ **dě'm** + **-r̀** → **m̀** **dě'mr̀** I have commented (on something)
 1SG comment:PERF -PERF

m̀ **kúú** + **-r̀** → **m̀** **kúúr̀** I have grabbed (something)
 1SG grab:PERF -PERF

m̀ **sáá** + **-r̀** → **m̀** **sáár̀** I have swallowed (something)
 1SG swallow:PERF -PERF

7.3.1.4 The dummy object suffix -nà

The suffix **-nà** is a dummy object marker which is found with verbal nouns derived from transitive verbs, whether they are used as nouns (5.9) or used verbally (as in the Imperfective; see 7.4.1.1.2).

làá-nà eating (something)
eat:VN-OBJ

mì làá-nà I eat (something) / I am eating (something)
1SG eat:VN-OBJ

The structure and role of **-nà** is described in greater detail in reference to verbal nouns in 5.9.1.1.

7.3.1.5 Pronominal object suffixes

Three object pronouns are verb word suffixes: second person singular (7.3.1.5.1), third person singular (7.3.1.5.2), and the **-zíná** variant of the 1&2 person plural (7.3.1.5.3). In all three cases, there is morphophonological evidence of these suffixes' interdependence with the verb word; such evidence is lacking for other object pronouns (6.1.3.1).

7.3.1.5.1 The second person singular object suffix -m̐

The second person singular object is a verb word suffix **-m̐**.

mì zòò-m̐ I greet you / I am greeting you
1SG greet:VN-2SG.OBJ

?à kyàh-m̐ he/she/it loves you / he/she/it is loving you
3SG love:VN-2SG.OBJ

When **-m̐** is attached to a stem ending with a glottalized vowel (V'), this vowel is reinterpreted as a V?V sequence: the glottal stop is discrete, and the second vowel, which is syllabic, echoes the first, although it carries the High tone of the underlying suffix **-m̐**.

?à là?-ám he/she/it hears you / he/she/it is hearing you
3SG hear:VN-2SG.OBJ

When **-m̐** is attached to a consonant-final verb stem, an echo vowel is also inserted.

?à líb-ím he/she/it straightens you / he/she/it is straightening you
3SG straighten:VN-2SG.OBJ

?à bàg-ám he/she/it meets you / he/she/it is meeting you
3SG meet:VN-2SG.OBJ

ʔà sòg-óm he/she/it touches you / he/she/it is touching you
 3SG send:VN-2SG.OBJ

Nasality does not travel leftward from the suffix to the host stem:

mì kòò-ím I give birth to you / I am giving birth you
 1SG give.birth:VN-2SG.OBJ

However, echo vowels that follow a stem ending in a nasal consonant are nasalized.

ʔà bàm-ám he/she/it tramples you / he/she/it is trampling you
 3SG trample:VN-2SG.OBJ

In this context, mid echo vowels are also nasalized. Like the second person singular reflexive suffix (7.3.1.2.1), the identity of the suffix vowel and/or its nasality may be an effect of phonetic context rather than an underlying trait.

ʔà sèm-ém he/she/it avoids you / he/she/it is avoiding you
 3SG avoid:VN-2SG.OBJ

ʔà rôhm-óm he/she/it waits for you / he/she/it is waiting for you
 3SG wait:VN-2SG.OBJ

7.3.1.5.2 The third person singular object suffix -`rú

Tonally, the third person singular object suffix -`rú (which in informal speech may be reduced to -`wú; see the discussion at the beginning of 6.1.3.1) forms part of the same word as the verb stem.

∅ **bée** + -`rú ~ -`wú → **béèrú** ~ **béèwú** he/she/it_i bit him/her/it_j
 3:PFV bite:PFV -3SG.OBJ

∅ **gù** + -`rú ~ -`wú → **gùrú** ~ **gùwú** he/she/it_i answered
 3:PFV answer:PFV -3SG.OBJ him/her/it_j

It is realized as -`dú when it follows a verb stem that ends in an alveolar consonant.

∅ **dèr** + -`rú ~ -`wú → **dèrdú** he/she/it_i cut him/her/it_j off
 3:PFV cut.off:PFV -3SG.OBJ

∅ **kàn** + -`rú ~ -`wú → **kàndú** he/she/it_i passed him/her/it_j
 3:PFV pass:PFV -3SG.OBJ

7.3.1.5.3 The first-and-second (1&2) person plural object suffix variant -zíná

The -zíná variant of the 1&2 plural object zìnzá ~ -zíná (see 6.1.3.1) is also a suffix, since tonally it forms part of the same word as the verb stem.

∅ **zóó** + **-zíná** → **zóózíná** he/she/it greeted us (incl.)
 3:PFV greet:PFV -1&2PL.OBJ

∅ **kàn** + **-zíná** → **kànzíná** he/she/it passed us (incl.)
 3:PFV pass:PFV -1&2PL.OBJ

7.3.1.6 The directional suffix **-ìn** ~ **-̀ǹ**

The directional suffix **-ìn** / **-̀ǹ**, which is a shortened form of the directional adverb **hîn** ‘to here’ (8.1.1.1), attaches to the stem of intransitive verbs. Like its uncontracted counterpart, it signals an action approaching the speaker. In cases where the suffix is attached to a verb stem ending in a consonant, its underlying form **-ìn** is realized in full.

m̀ỳ háá + **-m̀** + **-ìn** → **m̀ỳ háám̀ìn** you had come back to here
 2SG come.back:PLUPERF -2SG.REFL -to.here

When it is attached to a verb stem ending in a vowel, it is realized as **-̀ǹ**.

?àà háá-̀ǹ he/she/it will come back here
 3SG:IRR come.back:FUT-to.here

?àà té'-̀ǹ he/she/it will walk here
 3SG:IRR walk:FUT-to.here

Along with a regular suffixed form, there is a complete irregular conjugation of the verb **húm** ‘come’ with **-ìn** ~ **-̀ǹ** (7.3.3.2).

7.3.1.7 Combinatory possibilities

A limited number of combinatory possibilities are available to verbal suffixes. For example, the Perfect suffix **-r̀**, with which explicit objects are permitted, may be followed by the second person singular object suffix.

m̀ỳ zóó-r̀-̀m̀ → **m̀ỳ zóór̀ím** I have greeted you /
 1SG greet:PERF-PERF-2SG.OBJ I greet you

Also, reflexive suffixes may be followed by the directional suffix **-ìn** ~ **-̀ǹ**.

m̀ỳ háá-̀m̀-ìn → **m̀ỳ háám̀ìn** you have come back to here
 2SG come.back:PFV-2SG.REFL -to.here

Finally, the verbal plural affix **-zí** is always closest to the stem, and may be found in conjunction with all other verbal suffixes, including attested combinations of these suffixes.

and “transitive” are helpful in describing the two classes, there are areas of ambiguity regarding the patterning of transitivity. Because of this, the verb classes are defined by further formal requirements specific to each. Defining characteristics of intransitive vs. transitive verbs are summarized in the following table:

Characteristics of intransitive vs. transitive verbs

intransitive verbs	transitive verbs
cannot take an object	must take an object in most contexts
Perfect form does not take the suffix -rì	Perfect verb form must take the suffix -rì
found with a corresponding irregular verbal noun	found with a corresponding regular verbal noun
corresponding verbal noun may not take dummy object suffix -nɔ	corresponding verbal noun must take dummy object suffix -nɔ when no there is no explicit object
underived	derived in some cases
transitivity achieved by application of the causitive verbal extension -n	detransitivized by reflexive verb suffixes

Each of these characteristics is addressed in the subsections below.

7.3.2.1.1 Intransitive verbs

Intransitive verbs differ syntactically from transitive verbs in that they cannot take objects.

mì ?à' I ran
1SG run:PFV

mì hèè I climbed
1SG climb:PFV

mì húm I came
1SG come:PFV

Irregular verbal nouns (5.9.1.2) correspond to intransitive verbs.

irregular verbal noun		corresponding intransitive verb stem	
gúù	flowing, flow (n.)	gúú	flow (v.)
gélà	getting lost	gé	get lost
ḍáárà	alighting	ḍàà	alight
fím̀rò	weighing	fim	weigh (intr.)
gyáárà	foaming up	gyàà	foam up

Intransitive verbs are never found with the transitive Perfect suffix **-rì** (7.3.1.3) or the dummy object suffix **-nà** (7.3.1.4) and they are never derived from other verbs or nouns (cf. 7.1.2.1). Intransitive verbs are frequently found with reflexive suffixes (7.3.1.2); for some tenses, inflection with reflexive suffixes is obligatory (7.4.1.1.1).

mì ʔá'-nì	I have run	mì ʔá'-nì	I had run
1SG run:PERF-1SG.REFL		1SG run:PLUPERF-1SG.REFL	

Intransitive verbs may be followed by complements expressing location and manner. Importantly, when such complements are nouns, there is no marking on the complement to show that it is an oblique rather than an object (objects are also unmarked; see the extended discussion in 5.13). Example locative complements are as follows:

mì gè fáh	I got lost on the path
1SG get.lost:PFV path	
mì rì' gèmnà	I entered at the entrance hut
1SG enter:PFV entrance.hut	
mì yáá fíìlò	I sat in/at the house
1SG sit:PFV house	
Ø ḍàà kpèègá	he/she/it alighted on the tree
3:PFV alight:PFV tree	

Example manner complements are as follows:

mì bàà sáà	I hardened like stone
1SG harden(intr.):PFV stone	
mì hèg kóm̀nà	I withered with hunger
1SG dry.up:PFV hunger	
mì hùm vérgà	I came like a stranger
1SG come:PFV traveller	

Ø **sòò gyâh** it was [as] hot [as] the sun
 3:PFV get.hot:PFV sun

In the end, the oblique status of the complement is confirmed only by the patterning of the verb elsewhere, since in other contexts it shows the formal characteristics of the intransitive verbs mentioned in this section.

Intransitive verbs are effectively transitivized by the application of the causative verbal extension **-n** (7.2.3.1).

intransitive verb stem		corresponding causative (= transitivized) verb stem with -n
bàà	grow (intr.), harden (intr.)	bààń grow (tr.), harden (tr.)
lóó	get tired	lòòń tire, irritate
sòò	get hot, boil (intr.)	sòòń heat, boil (tr.)

7.3.2.1.2 Transitive verbs

Transitive verbs are almost always found with a nominal (or pronominal) object, a dummy object suffix, or a reflexive suffix. Transitive verbs found with objects are shown in the following examples:

bò'msí hàhngí káálé Bo'msi lost his head
 Bo'msi forget:PFV head:3SG.C/I.POSS.INAL

mì dó byàá I drank water
 1SG drink:PFV water

twǎh bèè kǎà nà Does a snake bite the stick?
 snake bite:VN stick QM

zèèlá lòòń mí a lie bothered me
 lie tire:PFV 1SG.OBJ

The Perfect suffix **-rì** (7.3.1.3) is only found with transitive verbs.

mì kó-rì I have seen (something)
 1SG see:PERF-PERF

Ø **gù-rì** he/she/it has answered (something)
 3:PFV answer:PERF-PERF

In contrast to intransitive verbs, which are only found with corresponding irregular verbal nouns (5.9.1.2), regular verbal nouns (5.9.1.1) always correspond to transitive verbs.

verbal noun		corresponding transitive verb stem	
dâd	sowing, planting	dâd	sow, plant
gyàh	sewing, hemming	gyáh	sew, hem
gbóógì	enlarging, widening	gbòògí	enlarge, widen
púgvbì	scattering	pùgvbí	scatter
yàh	calling, inviting	yáh	call, invite

These regular verbal nouns take a dummy object suffix **-nà** if no explicit object is specified (5.9.1.1; the tonal behaviour of **-nà** is also addressed in this section).

verbal noun	verbal noun w/ dummy object	
dâd	dâd-nà	sowing, planting (something)
gyàh	gyáh-nà	sewing, hemming (something)
gbóógì	gbóógì-nà	enlarging, widening (something)
púgvbì	púgvbì-nà	scattering (something)
yàh	yáh-nà	calling, inviting (something)

A minority of transitive verb stems undergo derivation with reflexive suffixes (7.3.1.2). This contrasts with intransitive stems, with which reflexive suffixes function inflectionally (7.3.2.1.1). With transitive stems, the reflexive suffixes appease obligatory object requirements, resulting in valence reduction; in other words, transitive verbs are detransitivized. Such verbs are inflected like intransitive verbs belonging to the same tonal class.

transitive verb construction		detransitivized verb construction
mì dúṅ-rì 1SG bend:PERF-PERF <i>I have bent (something) down</i>		mì dúṅ-nì 1SG bend:PERF-1SG.REFL <i>I have bent down</i>
mì ñb-rì 1SG straighten:PERF-PERF <i>I have straightened (something)</i>		mì ñb-nì 1SG straighten:PERF-1SG.REFL <i>I have straightened up</i>

Detransitivized verbs differ from transitive verbs in that they are not found with basic Perfective (7.4.1.1.1.1) or Imperfective (7.4.1.1.2) forms. In cases where the detransitivized basic Perfective or Imperfective meaning is intended, the transitive counterpart is used with a predictable or dummy object.

transitive verb construction mì dúŋ 1SG bend:PFV <i>I bent (something) down</i> mì líb-ná 1SG straighten:VN-OBJ:VN <i>I straightened (something)</i>	transitive verb construction used in place of a detransitivized verb construction mì dúŋ ?ínù 1SG bend:PFV body <i>I bent down</i> = mì líb-ná 1SG straighten:VN-OBJ:VN <i>I have straightened up</i>
--	--

Detransitivized verbs are also distinct from intransitive verbs: reflexive verbal suffixes are optional for Future (7.4.1.2.1) and Optative (7.4.2) forms of intransitive verbs, but they are obligatory for detransitivized verbs.

intransitive verb ?àá hèè(-lé) 3:IRR climb:FUT-(3SG.REFL) <i>I will climb</i> mú hèè(-m) 2SG:OPT climb:OPT-(2SG.REFL) [you (sg.)] <i>climb!</i>	detransitivized verb construction ?àá yâà-lé 3:IRR finish:FUT-3SG.REFL <i>I will finish</i> mú yâà-m 2SG:OPT finish:FUT-2SG.REFL [you (sg.)] <i>finish!</i>
---	---

Semantic shift frequently accompanies detransitivization. And often, because the meanings of detransitivized stems are specific or part of fixed expressions, the tenses with which they may be used are limited. Stems with which this type of semantic shift has been attested are as follows:

transitive verb stem	meaning (transitive)	meaning (detransitivized)
ḃág	meet, support	get stuck
ḃéé	bite	stick together, become thin
dù	join	be related through marriage
fí'	blow	revive (intr.)
gà'	nail	stay fixed in one place
gù	answer	consent
gòò	prepare	be afraid
kpàtǵí	distance (tr.)	become distant
pá	make, do	happen, do with oneself
páá	dirty (tr.)	get dirty
sí'	fish	bloat (intr.)
yâà	finish (tr.)	finish (intr.)
?òòǵí	set crawling	drag one's feet

Detransitivized verbs pattern lexically as transitive verbs in that the regular verbal nouns to which they correspond (like that of their transitive counterparts) must take the dummy object suffix **-nà** when no other object is expressed.

verbal noun	verbal noun w/ dummy object	
ḃèè	ḃèé-nà	biting (something), sticking together, becoming thin
dìì	dìí-nà	joining (something), being related through marriage
fí'	fí'-nà	blowing (something), reviving (intr.)
gà'	gǎ'nà	nauling (something), staying fixed in one place

One context in which syntactic transitivity requirements are relaxed is with Optative verb forms in cases where an object has been previously mentioned.

mù	làà	nàmá	[you (sg.)] eat meat!
2SG:OPT	eat:OPT	meat	
... mù	làà		[you (sg.)] eat (meat)!
2SG:OPT	eat:OPT		

Transitive verbs, in contrast to intransitive verbs, may be derived from other nouns or verbs (7.1.2.1).

7.3.2.2 Tone

Tone on the verb stem is determined by the tense and the tonal class to which a stem belongs. Tone classes are accounted for in 7.3.2.2.1. Minimal tone pairs, which are uncommon among verbs, are listed in 7.3.2.2.2, and the behaviour of tone in verb words is described in 7.3.2.2.3.

7.3.2.2.1 Inventory of tone classes

There are six basic inflectional categories which are signalled by tonal distinctions on the stem: basic Perfective, Perfect, Pluperfect, Future, Optative and Imperfective, which is expressed with a verbal noun (5.9). The tonal possibilities for these categories fall into six sets, or classes (see table below).

The melodies found with the Perfect tense are unusual in two regards: first, Perfect verb words with intransitive stems from Class 1 (all shapes) and Class 2 (CVX only) contain a floating H tone on the left; and second, the melody for Perfect verb words with intransitive stems from Class 1 (CV only), transitive stems from Class 4, and all Class 5 and Class 6 stems, overrides the tone of any accompanying verb suffixes (7.3.2.2.3, 7.4.1.1.1.2).

Each of the tonal classes is fully illustrated in Appendix 2 along with transitive and intransitive verbs and all CV shapes of the stems with which it is attested. These classes are also summarized in the following table:

Tone on the verb stem

tonal verb class	example verb	PERFECTIVE	PERFECT	PLUPERFECT	FUTURE	OPTATIVE	IMPERFECTIVE (verbal noun)
1 (intr., CVX)	yáá	H	°H[L]	H	H	H	(lex.)
1 (intr., CV)	gé	H	HL*	H	H	H	(lex.)
1 (tr.)	béé	H	H	H	H	H	L
2 (intr.)	sùù	L	°H[L]	H	H	H	(lex.)
3 (intr.)	vè	L	L	L	H	L	(lex.)
4 (intr.)	hèè	L	L	L	L	L	(lex.)
4 (tr.)	gù	L	L*	L*	L	L	L
5 (intr., tr.)	yàà	L	LHL*	LHL*	LH	LH	HL
6 (intr., tr.)	?òògí	LH	LHL*	LHL*	LH	LH	HL

°H[L] = floating H tone on the left boundary of a L stem

* = replacive melody, i.e., dominates the entire verb word (see 7.3.2.2.3)

7.3.2.2.2 Minimal tone pairs

Even though there are six tonal classes, there are few minimal tone pairs among verbs, i.e., segmentally identical verbs in different tonal classes (this does not include the productively detransitivized forms described in 7.3.2.1.2). For some of the pairs (e.g., **gyáá/gyàà** and **háá/hàà**), a historical transitivity-related derivation (cf. 7.2.4.5) appears to be responsible for membership in separate classes; however, the direction of this derivation is inconsistent, and it is otherwise unproductive. Such verbs are as follows:

- Class 1: **gwá'** laugh
- Class 5: **gwà'** disappear

- Class 1: **gyáá** take out, gather up
- Class 5: **gyàà** care for a child

- Class 1: **háá** come back, go back
- Class 4: **hàà** surround (tr.)

- Class 1: **hí'** breathe (intr.); spurt (tr.)
- Class 4: **hì'** stake out (tr.)

Class 1: **sáá** shut up (intr.)
 Class 4: **sàà** tell, trick, cease (tr.)

Class 1: **súm** punt
 Class 5: **sùm** know

Class 1: **yáá** move away
 Class 5: **yàà** finish (tr.)

Class 1: **zóó** greet (tr.)
 Class 4: **zòò** rise, emerge (intr.)

The fact that all of the minimal tone pairs in the above examples involve Class 1 and Class 4 or 5 is conspicuous. However, these are the most commonly attested tonal classes; and since the formation of Class 5 verb stems is almost always accompanied by segmental derivation (7.1.2), it hardly adds to the inventory of minimal tone pairs among verb stems.

7.3.2.2.3 Tonal behaviour

The verb word bears a single tone melody, which is almost always a fusion of the tonal TAM inflection of the verb stem (7.3.2.2.1) and the tone of the suffixes (7.3.1); it initially maps from left to right, but it later shifts to the right (cf. 4.1.2.2).

Ø	hèè	→	hèè	he/she/it climbed
3:PFV	climb:PFV			
Ø	hèè-zí	→	hèèzí	they climbed
3:PFV	climb:PFV-PL			
Ø	hèè-zí-ñ	→	hèèzîñ	they climbed to here
3:PFV	climb:PFV-PL-to.here			
Ø	hèè-ré	→	hèèré	they have climbed
3:PFV	climb:PERF-3PL.REFL			
Ø	hèè-zí-ré	→	hèèzîré	they have climbed
3:PFV	climb:PERF-PL-3PL.REFL			
Ø	hèè-zí-ré-ñ	→	hèèzîrêñ	they have climbed to here
3:PFV	climb:PERF-PL-3PL.REFL-to.here			

However, the association of tone on Perfect forms (7.4.1.1.2) is problematic for verbs in three tonal classes. For intransitive verbs in Class 1 and Class 2 comprised of a heavy syllable, the tone of the Perfect verb word does not associate evenly. This situation,

which shows up clearly in verb words with more than three morae, can be explained by the presence of a floating H tone on the left edge of the Perfect verb word.

m̀	´[yâà-ní]	→	m̀ yáàní	I have moved away
1SG	move.away:PERF-1SG.REFL			
ǹ	´[yâà-zínzá]	→	ǹ yáàzìnzá	we (incl.) have gotten lost
1&2	move.away:PERF-1&2PL.REFL			
∅	´[yâà-zí-ré]	→	yáàzìré	they have gotten lost
3:PFV	move.away:PERF-3PL.REFL			

For Perfect forms of intransitive Class 1 verbs with a CV stem, a HL melody dominates the entire Perfect verb word. This can be explained as the result of a floating L tone marking the right edge of the Perfect verb word.

m̀	gé-ní]	→	m̀ géní]	I have gotten lost
1SG	get.lost:PERF-1SG.REFL-CL1CV:PERF			
ǹ	gé-zínzá]	→	ǹ gézínzà]	we (incl.) have gotten lost
1&2	get.lost:PERF-1&2PL.REFL-CL1CV:PERF			
∅	gé-zí-ré]	→	gézìrè]	they have gotten lost
3:PFV	get.lost:PERF-3PL.REFL-CL1CV:PERF			

For Perfect forms of transitive Class 4 verbs (all of which consist of a heavy syllable), a L melody dominates the entire verb word and does not allow the underlying H tone of the verbal plural morpheme -zí (7.3.1.1) to surface.

∅	laa-rì	→	lààrì	he/she/it has eaten
3:PFV	eat:PERF-PERF			
∅	laa-zí-rì	→	lààzìrì	they have eaten
3:PFV	eat:PERF-PL-PERF			

For Perfect verb words from Class 5 and Class 6, the LHL melody characteristic of a transitive source verb dominates the derived detransitivized form (cf. 7.3.2.1.2) of that verb. This is shown by the following three pairs of examples showing transitive source verbs contrasted with their detransitivized counterparts:

m̀	yaa-rì	→	m̀ yâá-rì	I have finished (tr.)
1SG	finish:PERF-PERF			
m̀	yaa-ní	→	m̀ yâá-ní	I have finished (intr.)
1SG	finish:PERF-1SG.REFL			

nà 1&2	yaa-zí-rì finish:PERF-PL-PERF	→	nà yààzírì	we (incl.) have finished (tr.)
nà 1&2	yaa-zínzá finish:PERF-1&2PL.REFL	→	nà yààzínzà	we (incl.) have finished (intr.)
∅ 3:PFV	yaa-zí-rì finish:PERF-PL-PERF	→	yààzírì	they have finished (tr.)
∅ 3:PFV	yaa-zí-ré finish:PERF-3PL.REFL	→	yààzírè	they have finished (intr.)

In addition to these Perfect forms, the tone on Imperfective forms (verbal nouns; see 7.4.1.1.2) with the dummy object suffix **-nà** is not accounted for by simple fusion of verb stem and suffix melodies.

verbal noun	verbal noun w/ dummy object	
dòg	dǒg-nà	drinking (something)
fòò	fòó-nà	spying (something)
ḅûl	ḅûl-ná	dividing (something)
dâd	dâd-ná	sowing (something)

Although this alternation may be attributed to two possible lexical tone melodies associated with verb + dummy object suffix words, alternate explanations are pursued in the section on verbal nouns (5.9).

7.3.3 Irregular verbs

There are three verbs with irregular conjugations in Mambay: **vè** ‘go’ (7.3.3.1), **húm** ‘come’ (7.3.3.2) and **tògó** ‘be’ (7.3.3.3).

7.3.3.1 **vè** ‘go’

The verb **vè** ‘go’ is morphologically irregular (7.3.3.1.1) and exhibits a Realis Future category not found with other verbs (7.3.3.1.2).

7.3.3.1.1 Morphological irregularities

In its basic Perfective form, **vè** is conjugated like other verbs: the stem is segmentally invariable (see Appendix 2). However, elsewhere **vè** has an irregular conjugation in which, among other things, the stem vowel typically assimilates to the quality of the vowel in the accompanying reflexive suffixes. This is illustrated by the following Future forms:

	IRR	FUT form w/ refl. suffixes	
person	pn.		
1SG	mùí	ví-ní	I will go
1&2SG	nàá	vá-ná	we (you (sg.) and I) will go
3SG	?àá	vé-lé	he/she/it will go
3SG.COREF	lèé	vé-lé	he/she/it (coref.) will go
1PL	ríí	ví-rí	we (excl.) will go
2PL	ròó	vó-ró	you (pl.) will go
3PL	?àá	vé-ré	they will go (short form; see 7.3.1.1)
3PL.COREF	rèé	vé-ré	they (coref.) will go (short form)

The matching of the verb's vowel quality with that of the reflexive suffix persists even when there is a synchronically intervening plural morpheme **-zí** (cf. 7.3.1.1):

3PL	?àá	vé-zí-ré	they will go (long form; see 7.3.1.1)
3PL.COREF	rèé	vé-zí-ré	they (coref.) will go (long form)

When it accompanies the verb **vè**, the 2SG reflexive suffix is **-núm** rather than (as is the case with all other verbs; see 7.3.1.2.1) **-(n)ým**.

2SG	mùú	vúnúm	you (sg.) will go (long form)
-----	------------	--------------	-------------------------------

Presumably, the underlying **u** vowel in the 2SG reflexive form of **vè** has its origin in the second person subject pronoun **mù**; however, it is no longer found contrastively with any other verbs. This historical vowel quality **u** persists on the verb stem in an alternative short 2SG conjugation, even though there is no vowel in the reflexive suffix.

2SG	mùú	vúm	you (sg.) will go (short form)
-----	------------	------------	--------------------------------

The 1&2 plural forms of **vè** are idiosyncratic. Rather than exhibiting a **zí + ná** (→ **zínzá/zíná**) suffix sequence (cf. 7.3.1.1, 7.3.1.2, 7.3.1.7), they exhibit a fused **-nzyá** or **-nzá** suffix.

1&2PL	nàá	vánzyá ~	we (incl.) will go
	nàá	vánzá	

A full paradigm of all forms of **vè** 'go' is given in Appendix 2.

7.3.3.1.2 Realis Future

The verb **vè** 'go' is unique in that it exhibits an additional Realis Future conjugation. Like Realis verb forms, it is found with a CV pronoun; this pronoun patterns in the same way as the Imperfective pronoun (7.4.1.1). However, the tone on the verb stem is that of the Future (which is normally Irrealis; cf. 7.4.1.2.1). Semantically, the Realis Future of **vè** is more certain and more immediate than the Irrealis Future.

ex. m̀ 1SG	ví-ní go:FUT-1SG.REFL	I am going to go / I am going presently / I will go now
?à 3SG:IMPFV	vé-lé go:FUT-3SG.REFL	he/she/it is going to go / he/she/it is going presently / he/she/it will go now

cf. Imperfective forms:

m̀ 1SG	vágà go:VN	I go / I am going
?à 3SG:IMPFV	vágà go:VN	he/she/it goes / he/she/it is going

cf. Irrealis Future forms:

m̀̀ 1SG:IRR	ví-ní go:FUT-1SG.REFL	I will go
?àá 3SG:IRR	vé-lé go:FUT-3SG.REFL	he/she/it will go

A full paradigm of Realis Future forms of **vè** ‘go’ is given in Appendix 2. Two expansions of verbal inflection with similar meanings use the verb **vè** ‘go’; in one case, it is in the context of a serial verb construction (7.6.3.1), and in the other case it is as an auxiliary (7.6.3.2.1).

7.3.3.2 **húm** ‘come’

The verb **húm** ‘come’ is irregular in that it allows a contracted root form when it is accompanied by the directional adverb suffix **-in** ~ **-n̄** (from **hîn**) ‘to here’ (7.3.1.6, 8.1.1.1) in certain conjugations.

Segmentally, the root form of ‘come’ is normally **húm**. However, when **-in** ~ **-n̄** ‘to here’ accompanies the verb and there is no reflexive suffix (7.3.1.2), the **hú** of the first syllable may be dropped. In addition, the quality of the stem vowel **ú**, which in the normal conjugation is echoed before **-in** ~ **-n̄** (ex. **húmûn**), is retained in the contracted forms. This is evident in future forms of **húm** with **-in** ~ **-n̄**:

		normal conjugation with -n̄	contracted conjugation with -n̄	
person	IRR pn.			
1SG	m̀̀	húmûn	~ m̄ûn	I will come here

2SG	mùú	húmûn	~ mûn	you (sg.) will come here
1&2SG	nàá	húmûn	~ mûn	we (du.) will come here
3SG	?àá	húmûn	~ mûn	he/she/it will come here
3SG.COREF	lèé	húmûn	~ mûn	he/she/it (coref.) will come here
1PL	rìí	húmûn	~ mûn	we (excl.) will come here
2PL	ròó	húmûn	~ mûn	you (pl.) will come here

With contracted forms that contain the plural affix **-zí** (7.3.1.1), it appears that **-ìn ~ -n̄** attaches twice: to the verb root as well as to **-zí**.

		normal conjugation	contracted conjugation	
person	IRR pn.	with -n̄	with -n̄	
1&2PL	nàá	húmzîn	~ múnzîn	we (incl.) will come here
3PL	?àá	húmzîn	~ múnzîn	they will come here
3PL.COREF	rèé	húmzîn	~ múnzîn	they (coref.) will come here

However, the tone melody of the contracted conjugation is simplified; rather than retaining the L tonal value of **-ìn ~ -n̄** each time it appears (***múnzîn**), the tone melody follows that of the normal conjugation (**múnzîn**).

The normal paradigm for **húm** is accounted for by the tonal Class 1 paradigm in Appendix 2. Contracted forms of **húm** with **-ìn ~ -n̄** in other conjugations are tonally regular and segmentally identical to the future forms given above.

7.3.3.3 tògó ‘be’

The morpheme **tògó** ‘be’ is an existential copula. It is like a verbal noun in that exhibits an Imperfective meaning (cf. 7.4.1.1.2).

m̄	tògó	I am / I am there
1SG	be	

However, it differs from verbal nouns in that it is not possessible (cf. 5.9).

With existential phrases that have a complement, it provides an alternative to basic verbless clauses (10.1.3).

m̄	tóg	sàà	fíílò	I am in the house
1SG	be	in	house	
=	m̄	sàà	fíílò	I am in the house
	1SG	in	house	

The existential function that it fulfills in the Imperfective is taken over by the verb **yàà** ‘sit, stay, be’ for past and future expanded verb forms (7.6.3).

mì	yáá	sáà	fíílò	I will be in the house
1SG:IRR	sit:FUT	in	house	

Like verbs, it is found with the verbal plurality suffix **-zí**. However, it differs from verbs in that it takes an independent subject pronoun (6.1.2.1) rather than a verbal one (6.1.2.2ff.).

nànzà	tòg-zí	we (incl.) are / we (incl.) are there
1&2PL:INDEP	be-PL	

It also resembles verbs in that it may be accompanied by directional adverbs (8.1.1), which in all other cases are found with verbs.

dú	tògó-̀n	he/she/it is on the way here
3SG:INDEP	be-to.here	

dú	tǒg vòró	he/she/it is on the way there
3SG:INDEP	be to.there	

A full conjugation of **tògó** is as follows:

1SG	mì	tògó	1PL	rì	tògó
2SG	mù	tògó	2PL	rò	tògó
1&2SG	nà	tògó	1&2PL	nànzà	tògí
3SG	dú	tògó	3PL	dùgí	tògí
3SG:IMPERS	?à	tògó	3PL:IMPERS	?à	tògí
3SG:COREF	lè	tògó	3PL:COREF	rè	tògí

A commonly used irregular form of **dú tògó** ‘he/she/it is / he/she/it is there’ is **tí tògó**.

The forms above show that the morpheme-final **o** of **tògó** usually disappears phrase-internally.

nànzà	tòg-zí	we (incl.) are / we (incl.) are there
1&2PL:INDEP	be-PL	

mì	tǒg	sáà	fíílò	I am in the house
1SG	be	in	house	

However, it is maintained before the directional suffix **-̀in** ~ **-̀n** ‘to here’ (7.3.1.6).

dú tògó-̀n
 3SG:INDEP be-to.here

he/she/it is on the way here

7.4 Basic verbal inflection

The basic inflectional categories in Mambay are marked by length and tone on subject pronouns (6.1.2) and tone on verb words (see 7.3.2.2 as well this section below). Mambay verb forms may be divided into Indicative (7.4.1) and Optative (7.4.2) moods. The clear majority of verb forms are Indicative, and are further subdivided according to realis value, aspect, and tense.⁸ Optative forms, in contrast, do not reflect these distinctions. This basic verb system may be schematized as follows:

Functions of basic verbal inflection in Mambay

mood	realis value	aspect	tense
Indicative	Realis	Perfective	Perfective (basic)
			Perfect
			Pluperfect
	Imperfective		
	Irrealis		Future
Optative			

Indicative verb forms are used to express events (7.4.1). Optative verb forms, in contrast, are used to express a speaker’s wishes, to express purpose in dependent clauses, and to express the effect of causation (7.4.2). Formally, the classification of Indicative vs. Optative mood corresponds to the use of the negation particles **yá** and **gá** (7.5.2) respectively. In addition, Indicative verb forms are inflected for realis value, aspect, and tense.

Indicative verb forms are specified for Realis and Irrealis values. In contrast to Optative forms, which are inherently irrealis and not marked for realis distinction, Indicative Realis (7.4.1.1) and Irrealis (7.4.1.2) forms are distinguished. Formally, this distinction is marked on the subject pronoun: Realis pronouns are short (CV), and Irrealis pronouns are long (CVV) (6.1.2). While Realis forms signal events which have happened or are happening, Irrealis forms signal events that have not already happened and which are not

⁸ In the present study, as has been common in the study of Niger-Congo generally, the term “tense” is understood in a traditional sense: “any one of the different forms or modifications (or word-groups) in the conjugation of a verb which indicate the different times (*past, present, or future*) at which the action or state denoted by it is viewed as happening or existing, and also (by extension) the different nature of such action or state, as continuing (*imperfect*) or completed (*perfect*)” (Oxford English Dictionary online 2007; cf. Doke 1935:209, Dimmendaal 2000:162 and Crystal 2003:459–60). This differs from the use of the term in Comrie (1976) and, subsequently, much of the literature (e.g. Lyons 1995:312 ff.), where event sequence (“tense”) and the internal structure of events (“aspect”) are treated as distinct categories of verb modification. In Mambay, there is no formal justification for such a distinction.

happening. The Future tense (typically; see 7.4.1.2.1) as well as negated forms of Indicative verbs (7.5) are expressed using Irrealis pronouns (this grouping is defended in 7.4.1.2). All other Indicative verb forms fall under the domain of Realis.

Among Realis verb forms, a distinction is made between Perfective (7.4.1.1.1) and Imperfective (7.4.1.1.2) aspects. Perfective forms communicate events which have been completed in reference to a given point in time, and Imperfective forms refer to events which happen but which have not been completed in reference to a given point in time. Perfective forms are represented by three distinct tenses (basic Perfective, Perfect and Pluperfect), but there is only one basic Imperfective tense. The two aspects differ formally in several respects. First of all, the segmental shape of the Perfective is the verb stem, but that of the Imperfective is the verbal noun (5.9). Secondly, while the third person is invariably marked in the Perfective with a zero pronoun, it is marked in the Imperfective with a segmental pronoun **ʔà** whenever there is no nominal subject (7.4.1.1.2). Thirdly, the negated form of the Perfective is found with a LH pronoun, but negated Imperfective forms are found with a HL pronoun (7.5.3).

The Optative and the five Indicative tenses (basic Perfective, Perfect, Pluperfect, Imperfective and Future) are distinguished from one another by contrastive tone melodies and by the inventory of verbal suffixes which may be found with each (7.3.1). The tone melodies associated with the possible forms of a given verb fall into six tonal sets or classes (7.3.2.2). If the tone melody is known for the basic Perfective, Perfect and Future, melodies for the remaining forms can be predicted. Concerning the inventory of verbal suffixes, reflexive suffixes (7.3.1.2) are obligatorily found with Perfect and Pluperfect forms of intransitive verbs, and optionally found with Future and Optative forms of intransitive verbs. Further, the Perfect forms of transitive verbs always take the suffix **-rì**, and Imperfective forms of transitive verbs must take the dummy object suffix **-nà** if there is no explicit object.

An additional minor verb form, a Realis Future, is found uniquely with the verb **vè** ‘go’ (7.3.3.1.2). It is composed of an Imperfective pronoun and a Future verb stem.

Each of the basic inflectional categories is presented in the sections below (7.4.1–7.4.2). Negative verb forms are considered separately (7.5). Criteria used for distinguishing verb forms, all of which have been presented in this section, are summarized in the following table:

Overview of structural criteria for recognizing verb forms

verb forms					structural criteria							
mood	realis value	aspect	tense	transitivity	subject pronoun	negative subject pronoun	3 pers. subject pronoun	verb shape	verb tone	reflexive suffixes	transitive verb suffix	negative particle
Indicative	Realis	Perfective	Perfective (basic)		CṼ	CṼṼ	∅	stem	PFV	—	—	yá
			Perfect	intr.	CṼ	—	∅	stem	PERF	+	—	yá
		tr.		—	—	-rì						
	Pluperfect		CṼ	CṼṼ	∅	stem	PLUPERF	+	—	yá		
	Imperfective	intr.	CṼ	CṼṼ	?à~∅	v.n.	VN	—	—	yá		
		tr.	—	—	-nà							
Irrealis		Future	intr.	CṼṼ	CṼṼ	?àá	stem	FUT	±	—	yá	
			tr.	—	—							
Optative				intr.	CṼ	CṼ	má	stem	OPT	±	—	gá
				tr.	—	—			—	—		

7.4.1 Indicative

Indicative verb forms, which are used to express events (but see 7.4.1.2.1), are specified for Realis (7.4.1.1) and Irrealis (7.4.1.2) values. While Realis forms signal events which have happened or are happening, Irrealis forms signal events that have not already happened and which are not happening.

7.4.1.1 Realis

Realis verb forms are divided into two aspects: Perfective (three tenses; 7.4.1.1.1) and Imperfective (one tense; 7.4.1.1.2). Perfective forms signal events which, in reference to a given point in time, have already happened. Imperfective forms are used for events which, in reference to a given point in time, happen but are not completed.

One formal characteristic common to Realis verb forms is a subject pronoun paradigm with a CV structure (6.1.2). Other formal features vary among the four constituent tenses.

A minor Realis Future verb form, which is found uniquely with the verb *vè* ‘go,’ is discussed in 7.3.3.1.

7.4.1.1.1 Perfective

There are three perfective tenses: basic Perfective (7.4.1.1.1.1), Perfect (7.4.1.1.1.2), and Pluperfect (7.4.1.1.1.3). Perfective verb forms have in common that they are based on the verb stem, that third person forms are invariably marked with a zero pronoun, and that negated forms are found with LH pronouns (7.5.3).

7.4.1.1.1.1 Basic Perfective

The basic Perfective tense is used for completed events. In contrast to the Perfect and Pluperfect (7.4.1.1.1.2, 7.4.1.1.1.3), it is unspecified regarding the consequences of an event for a later point in time. The basic Perfective tense is the default means of marking sequential events in narrative discourse (Anonby 2005:29–32). It is typically structured as follows:

	<u>subject pronoun</u>	+	<u>verb</u>	
	Realis pronoun (CV)		stem (Perfective tone)	
ex.	mì		hèè	I climbed
	1SG		climb:PFV	
	rò		làà	you (pl.) ate something
	2PL		eat:PFV thing	

(Transitive verbs such as **làà** ‘eat,’ shown in the above example, have object requirements (7.3.2.1.2) and are thus shown with objects in this section and following sections).

As is the case with the Perfect (7.4.1.1.1.2) and Pluperfect (7.4.1.1.1.3), third person singular and plural forms (excluding co-referential forms) of the basic Perfective are marked with a zero pronoun.

Ø	hèè	he/she/it climbed
3:PFV	climb:PFV	
Ø	hèè-zí	they climbed
3:PFV	climb:PFV-PL	

Morphologically, the basic Perfective tense is never found with reflexive suffixes. Examples of basic Perfective forms from each of the six tonal classes are as follows:

tonal class,	tone		
transitivity	melody	example	
1 (intr.)	H	yáá	he/she/it moved away
(tr.)	H	béé	he/she/it bit
2 (intr.)	L	sùù	he/she/it lay down
3 (intr.)	L	vè	he/she/it went
4 (intr.)	L	hèè	he/she/it climbed
(tr.)	L	gù	he/she/it answered
5 (intr.)	(uses tr. counterpart yàà)		he/she/it finished (intr.)
(tr.)	L	yàà	he/she/it finished (tr.)
6 (intr.)	(uses tr. counterpart ʔdògí)		he/she/it dragged his/her/its feet
(tr.)	LH	ʔdògí	he/she/it set crawling

Full paradigms are given for each class in Appendix 2. Negative forms of the basic Perfective are discussed in 7.5.

7.4.1.1.1.2 Perfect

The Perfect tense is used for previously completed events with consequences for a point in time contemporaneous with the sequence of events in a discourse (typically the present). It is structured differently for intransitive and transitive verbs. For intransitive verbs and detransitivized transitive verbs (7.3.2.1), reflexive suffixes are used:

subject pronoun + verb

Realis pronoun (CV̇) stem (Perfect tone (see 7.3.2.2.3)) + reflexive suffix

ex. **mì** **hèè-ní** I have climbed
1SG climb:PERF-1SG.REFL

rò **hèè-ró** you (pl.) have climbed
2PL climb:PERF-REFL-2PL.REFL

For typical transitive verbs, a Perfect suffix **-rì** (7.3.1.3) is used:

subject pronoun + verb

Realis pronoun (CV̇) stem (Perfect tone) + **-rì**

ex. m̀	làà-rì	ʔígà	I have eaten something
1SG	eat:PERF-PERF	thing	
rò	làà-rì	ʔígà	you (pl.) have eaten something
2PL	eat:PERF-PERF	thing	

As is the case with the basic Perfective (7.4.1.1.1) and Pluperfect (7.4.1.1.3), third person singular and plural forms (excluding co-referential forms) of the Perfect are marked with a zero pronoun.

∅	hèè-lé		he/she/it has climbed
3:PFV	climb:PERF-3SG.REFL		
∅	hèè-zì-ré		they have climbed
3:PFV	climb:PERF-PL-3PL.REFL		
∅	làà-rì	ʔígà	he/she/it has eaten something
3:PFV	eat:PERF-PERF	thing	
∅	làà-zì-rì	ʔígà	they have eaten something
3:PFV	eat:PERF-PL-PERF	thing	

Examples of Perfect forms from each of the six tonal classes (separated here for transitivity as well as CV shape when it makes a difference for the mapping of tone) are as follows:

tonal class, transitivity	v. word tone melody	example	
1 (intr., CVX)	°H[L-H]	yáà-lé	he/she/it has moved away
(intr., CV)	HL*	gé-lè	he/she/it has gotten lost
2 (intr.)	°H[L-H]	sùù-lé	he/she/it has lain down
3 (intr.)	L-H	vè-lé	he/she/it has gone
4 (intr.)	L-H	hèè-lé	he/she/it has climbed
5 (intr.)	LHL*	yàá-lè	he/she/it has finished (intr.)
6 (intr.)	LHL*	ʔòògí-lè	he/she/it has dragged his/her/its feet
1 (tr.)	H-L	ḃéé-rì	he/she/it has bitten
4 (tr.)	L*	gù-rì	he/she/it has answered

5 (tr.)	LHL*	yáá-rì	he/she/it has finished (tr.)
6 (tr.)	LHL*	?òògí-rì	he/she/it has set crawling

(°H[L-H] = floating H tone on the left boundary of a verb word composed of a L verb stem and a H suffix; * = replacive melody, i.e., dominates the entire verb word; see 7.3.2.2.3.)

Full paradigms are given for each class in Appendix 2. As is evident, the tonal nature of Perfect forms in some tonal classes is complex: while Class 1 (CVX intransitive only) and Class 2 exhibit a floating H tone on the left boundary of the verb word, some other Classes (4, transitive only; 5; and 6) exhibit a replacive melody that applies to the Perfect verb word as a whole. The tonal behaviour of these forms is reviewed in 7.3.2.2.3.

There is no negative form of the Perfect; negated Perfect constructions use negative perfective forms (7.5.1).

7.4.1.1.1.3 Pluperfect

The Pluperfect tense is used for previously completed events with consequences for a point in time subsequent to the event but prior to the point of reference in a discourse. The Pluperfect is found with intransitive verbs as well as transitive verbs that take reflexive suffixes (7.3.1.2). It is typically structured as follows:

subject pronoun + verb
 Indicative pronoun (CV̀) stem (Pluperfect tone) + reflexive suffix

- ex. m̀ yáá-ní I had moved away
 1SG move.away:PLUPERF-1SG.REFL
- r̀ yáá-ró you (pl.) had moved away
 2PL move.away:PLUPERF-2PL.REFL

cf. corresponding Perfect forms:

- m̀ yáà-ní I have moved away
 1SG move.away:PERF-1SG.REFL
- r̀ yáà-ró you (pl.) have moved away
 2PL move.away:PERF-2PL.REFL

As is the case with the basic Perfective (7.4.1.1.1.1) and Perfect (7.4.1.1.1.2), third person singular and plural forms (excluding co-referential forms) of the Perfect are marked with a zero pronoun.

- Ø yáá-lé he/she/it had moved away
 3:PFV move.away:PLUPERF-3SG.REFL

Ø **yáá-ré** they had moved away
 3:PFV move.away:PLUPERF-3PL.REFL

A distinction between Perfect and Pluperfect exists only for intransitive verbs from tonal Classes 1 and 2.

Examples of Pluperfect forms from each of the six tonal classes (separated here for transitivity) are as follows (forms in classes marked with † are identical to those used for the Perfect):

tonal class, transitivity	v. word tone melody	example	
1 (intr.)	H-H	yáá-lé	he/she/it had moved away
2 (intr.)	H-H	súú-lé	he/she/it had lain down
†3 (intr.)	L-H	vè-lé	he/she/it had gone
†4 (intr.)	L-H	hèè-lé	he/she/it had climbed
†5 (intr.)	LHL*	yàá-lè	he/she/it had finished (intr.)
†6 (intr.)	LHL*	?dògí-lè	he/she/it had dragged his/her/its feet
†1 (tr.)	H-L	ḃéé-rì	he/she/it had bitten
†4 (tr.)	L*	gù-rì	he/she/it had answered
†5 (tr.)	LHL*	yàá-rì	he/she/it had finished (tr.)
†6 (tr.)	LHL*	?dògí-rì	he/she/it had set crawling

(* = replacive melody, i.e., dominates the entire verb word; this is only found with Pluperfect forms identical to those of the Perfect. See 7.3.2.2.3 and 7.4.1.1.1.2 for discussion.)

Full paradigms are given for each class in Appendix 2. Negated forms of the Pluperfect are discussed in 7.5.

7.4.1.1.2 Imperfective

The Imperfective is used for events which, in reference to a given point in time, happen but are not completed. In addition to carrying a generic imperfective meaning, it often communicates a habitual meaning. Usually the events are anchored in the present, but as the example at the end of this section shows, they may be expressed as events in the past.

Represented by a single tense, the Imperfective is typically expressed simply by using a Realis subject pronoun (6.1.2) with a verbal noun (5.9). As is explained in the section on verbal nouns, a comparable situation is found in the well-known case of Hausa (Dimmendaal 2000:171, Newman 2000:288–92) and in Kébi-Benue languages such as Mundang (Elders 2000:327–30).

subject pronoun + verb

Realis pronoun (CV̇) verbal noun (lexical tone)

ex. **mì** **héérà** I climb / I am climbing
1SG climb:VN

rò **héérà** you (pl.) climb / you (pl.) are climbing
2PL climb:VN

When the verbal noun corresponds to a transitive verb, an object or dummy object suffix must accompany the noun (7.3.2.1).

mì **làá-nà** I eat (something) / I am eating (something)
1SG eat:VN-OBJ

mì **làà** **?ígà** I eat something / I am eating something
1SG eat:VN thing

The verbal plural affix **-zí** (7.3.1.1) is used with verbal nouns in Imperfective conjugations. With intransitive verbs, it attaches following the first syllable of the verbal noun. For monosyllabic verbal nouns, this is straightforward.

mì **yáà** I move away / I am moving away
1SG move.away:VN

nà **yáà-zí** we (incl.) move away / we (incl.) are moving away
1&2 move.away:VN-PL

With disyllabic verbal nouns, morphophonological alternations are complex. If the verbal noun has two light syllables and the vowel of the first syllable is an exact echo of the second syllable's vowel (i.e., $V_1=V_2$), the second vowel is deleted when **-zí** is added.

mì **vágà** I go / I am going
1SG go:VN

nà **vâg-zí** we (incl.) go / we (incl.) are going
1&2 go:VN-PL

Otherwise, the second syllable is maintained, and **-zí** precedes it.

mì **héérà** I climb / I am climbing
1SG climb:VN

nà **héé-zí-rà** we (incl.) climb / we (incl.) are climbing (cf. **héérà** 'climbing')
1&2 climb:VN-PL-VN

The affixation of **-zí** to some disyllabic nouns is accompanied by irregular morphological alternations—even suppletion. For example, the final syllable of a two-syllable irregular verbal noun changes to **-rV** if the original suffix is **-gV**. (This alternation corresponds the domain of vestigial noun suffixes, which are otherwise opaque. Note also that historically, the value of the final vowel has often assimilated partially to the stem; see 5.1.3.2 and Anonby 2007b:REF).

ex. mì	húmgò	I come / I am coming
1SG	come:VN	
nà	húm-zí-rò	we (incl.) come / we (incl.) are coming
1&2	come:VN-PL-VN	

cf. IV-final verbal nouns, in which **I** does not alternate:

mì	té'là	I walk / I am walking
1SG	walk:VN	
nà	té'-zí-là	we (incl.) walk / we (incl.) are walking
1&2	walk:VN-PL-VN	

In the case of a verbal noun ending in **-dV**, a similar process happens, but the **d** of the first syllable is deleted and the short vowel in the first syllable undergoes compensatory lengthening.

mì	húdfò	I die / I am dying
1SG	die:VN-PL-VN	
nà	húúzíró	we (incl.) die / we (incl.) are dying
1&2	die:VN-PL-VN	

If an irregular verbal noun ends with **-bV** or **-vV**, the final syllable's consonant is retained and the vowel **i** is epenthesized before the plural affix **-zí**. Additionally, a renewing suffix **-rV** is added to the final syllable.

mì	ʔéébà	I swim / I am swimming
1SG	swim:VN-VN	
nà	ʔééb-í-zí-rà	we (incl.) swim / we (incl.) are swimming
1&2	swim:VN-V-PL-VN	
mì	núvà	I sleep / I am sleeping
1SG	sleep:VN-PL-VN	

nà nùv-í-zí-rà we (incl.) sleep / we (incl.) are sleeping
1&2 sleep:VN-V-PL-VN

mì ʔá'rvà I run / I am running
1SG run:VN-PL-VN

nà ʔá'rv-í-zí-rà we (incl.) run / we (incl.) are running
1&2 run:VN-V-PL-VN

When the verbal noun is transitive, **-zí** precedes the object or dummy object suffix.

nà làà-zí-nà we eat (something) / we are eating (something)
1&2 eat:VN-PL-OBJ

nà làà-zí ʔígà we eat something / we are eating something
1&2 eat:VN-PL thing

When there is no nominal subject, the third person pronoun **ʔà** is used.

ʔà héérà he/she/it climbs / he/she/it is climbing
3:IMPFV climb:VN

ʔà héé-zí-rà they climb / they are climbing
3:IMPFV climb:VN-PL-VN

However, when there is a nominal subject, this pronoun is reduced to zero.

gǎm Ø héérà Gam climbs / Gam is climbing
Gam 3:REAL climb:VN

kwéé mǎ kàdá Ø héé-zí-rà Kwé and Kada climb / Kwé and Kada are climbing
Kwé with Kada 3:REAL climb:VN-PL-VN

The tone of Imperfective forms of intransitive verbs is lexically determined and unpredictable, because it is the same as that of the irregular verbal noun used in an Imperfective function (5.9.1.2). Most commonly, it is HL (for Imperfective forms corresponding to intransitive stems in any tone class; see 5.9.1.2). For transitive verbs, the tone melody of the verbal noun is uniform within a given tonal class (5.9.1.1). Examples of Imperfective forms from each of the six tonal classes (separated here for transitivity) are as follows:

tonal class, transitivity	v. word tone melody	example	
1 (intr.)	(lex.)	?à yáà	he/she/it is moving away
2 (intr.)	(lex.)	?à súngà	he/she/it is lying down
3 (intr.)	(lex.)	?à vágà	he/she/it is going
4 (intr.)	(lex.)	?à héérà	he/she/it is climbing
5 (intr.)	(uses tr. counterpart ?à yáà)		he/she/it is finishing (intr.)
6 (intr.)	(uses tr. counterpart ?à ?óógì)		he/she/it is dragging his/her/its feet
1 (tr.)	L	?à bèè	he/she/it is biting
4 (tr.)	L	?à gù	he/she/it is answering
5 (tr.)	HL	?à yáà	he/she/it is finishing (tr.)
6 (tr.)	HL	?à ?óógì	he/she/it is setting crawling

(lex. = lexically determined, i.e., exhibits the verbal noun's lexical tone; see above)

Full paradigms are given for each class in Appendix 2. Negative forms of the Imperfective, which are marked with a HL pronoun, are discussed in 7.5.

An example from the data which shows that an Imperfective may be anchored to past events in a story line is as follows:

tâw kúú sêh káálé, gbáh fâh fíí,
 Taw grab:PFV hand:LF head/on:3SG.C/I.POSS.INAL catch:PFV path home

?à lêg-ná bóm bóm.
 3:IMPFV suck:VN-OBJ:VN one one

Taw took hold of them (lit. put his hand onto it), headed (lit. grabbed the path) home, [and] sucked (lit. sucks / is sucking) them one by one.

7.4.1.2 Irrealis

Irrealis forms signal events that have not already happened and which are not happening. They have in common a CVV subject pronoun shape. Irrealis verb forms are represented by the Future tense and negated Indicative verb forms. Although this higher-level grouping could seem like an *ad hoc* device to account for a coincidental formal match, Payne (1997:244–5) and Palmer (2001:168–75) state that both future and negative forms frequently pattern as irrealis in languages that mark this distinction; Roberts (1990) gives examples of this (see especially p. 378).

While the Future tense is presented in this section, negated Indicative verb forms are addressed in 7.5.

7.4.1.2.1 Future

The Future tense is used for events which will take place subsequent to a reference point in time and, secondarily, as a means of expressing one's wishes insistently (such modal functions of the Future tense are common in the world's languages; see Comrie 1976:2 and Palmer 2001:5). The Future tense is typically structured as follows:

	<u>subject pronoun</u> +	<u>verb</u>		
	Irrealis pronoun (CṼV)	stem (Future tone) (+ optional reflexive suffix)		
ex.	mǐ́	hèè	I will climb / I <i>will</i> climb! / let me climb!	
	1SG:IRR	climb:FUT		
	ròó	hèè	you (pl.) will climb / you (pl.) <i>will</i> climb! /	
	2PL:IRR	climb:FUT	[you (pl.)] climb!	
	mǐ́	làà	ʔígà	I will eat something / I <i>will</i> eat something! /
	1SG:IRR	eat:FUT	thing	let me eat something!
	ròó	làà	ʔígà	you (pl.) will eat something / you (pl.) <i>will</i> eat something!
	2PL:IRR	eat:FUT	thing	[you (pl.)] eat something!

Optionally, Future forms of intransitive verbs may be found with reflexive suffixes.

ex.	mǐ́	hèè-ní	I will climb / I <i>will</i> climb! / let me climb!
	1SG:IRR	climb:FUT-1SG.REFL	
	ròó	hèè-ró	you (pl.) will climb / you (pl.) <i>will</i> climb! /
	2PL:IRR	climb:FUT-2PL.REFL	[you (pl.)] climb!

Although the issue has been investigated, no difference in meaning has been established between Future forms of intransitive verbs without vs. with suffixes. Both may be found without (as directly above) or with complements (cf. 7.3.2.1.1):

ex.	mǐ́	hèè-ní	zé'gà	I will climb the mountain / I <i>will</i> climb the
	1SG:IRR	climb:FUT-1SG.REFL	mountain	mountain! / let me climb the mountain!
	ròó	hèè-ró	zé'gà	you (pl.) will climb the mountain; you (pl.)
	2PL:IRR	climb:FUT-2PL.REFL	mountain	<i>will</i> climb the mountain! / [you (pl.)]
				climb the mountain!

The verb **vè** 'go' (7.3.3.1) and detransitivized verb stems (7.3.2.1.2) are exceptional in that their Future forms are always found with reflexive suffixes (see also Appendix 2). Additionally, it allows a Realis form of the Future (7.3.3.1).

Examples of Future forms from each of the six tonal classes (separated here for transitivity) are as follows:

tonal class, transitivity	v. word tone melody	example	
1 (intr.)	H-H	ʔàá y'áá(-lé)	he/she/it will move away
2 (intr.)	H-H	ʔàá súú(-lé)	he/she/it will lie down
3 (intr.)	L-H	ʔàá vè-lé	he/she/it will go (see previous paragraph)
4 (intr.)	L-H	ʔàá hèè(-lé)	he/she/it will climb
5 (intr.)	L-H	ʔàá y'âà-lé	he/she/it will finish (intr.)
6 (intr.)	L-H	ʔàá ʔòògì-lé	he/she/it will drag his/her/its feet
1 (tr.)	H	ʔàá b'ée	he/she/it will bite
4 (tr.)	L	ʔàá g'ì	he/she/it will answer
5 (tr.)	LH	ʔàá y'âá	he/she/it will finish (tr.)
6 (tr.)	LH	ʔàá ʔòòg'í	he/she/it will set crawling

Full paradigms are given for each class in Appendix 2.

Negative forms of the Future, which are found with a pronoun of the same structure as that of the negated Imperfective, are discussed in 7.5.

7.4.2 Optative

The Optative mood is attested in three contexts. In main clauses, a general Optative function prevails; prototypically, it communicates an imperative intention (7.4.2.1). It is also found in subjunctive constructions following the subordinating conjunction **kà** (7.4.2.2), and in subjunctive constructions formed with the causative auxiliary **pá** ‘make, do’ (7.4.2.3). Negative forms of the Optative are discussed in 7.5.

7.4.2.1 In main clauses

Optative verb forms are most commonly found in main clauses. In this context, a general Optative function applies, expressing a wish on the part of the speaker.

Typologically, Mambay stands out in that it has no verb form marked specifically for an imperative function. Instead, Optative verb forms in main clauses prototypically communicate an imperative intention—the idea that a member or members of an audience must do something (cf. Bybee 1985:171, Payne 1997:303, Crystal 2003:227, Palmer 2001:80). Most frequently, this audience is the second person (singular or plural), and the illocutionary force is that of a command (“you...!, you must...”).

However, in Mambay the audience of a command may also be the first or the third person (sample descriptions for which an imperative function has been described for all pronominal persons are Robertson 1934:320–30, Lakoff 1968:172–6; Roberts 1990:369 and Mounce 1994:143–8; cf. also Palmer 2001:81, who discusses the theoretical

implications of such a system). For forms in which the first person is a speaker, orders are given to oneself (the first person singular) or a group of which one is a part (first person plural and 1&2 person forms); for the singular, this has the force of resolve (“let me...,” “I must...”), and for the plural, exhortation (“let us...,” “we must...”), respectively. For the third person (singular or plural), the Optative expresses the idea that an audience which is not being directly addressed must do something; this carries an obligative (“he/she/it must...”) force. For all three persons, the formal expression of imperative constructions is equivalent; there is no formally discrete second person conjugation (cf. Dimmendaal 2000:175, Watters 2000:203, who note that in most languages the subject pronoun is omitted for second person imperatives).

More broadly, Mambay speakers use the Optative to communicate intentions other than those which are strictly imperative. For example, third person Optative verb forms may express a jussive (“may he/she/it”) force. Other more specific functions (for example, suggestion or imploring) are expressed by using TAM indicators in conjunction with the Optative forms (7.6.1).

Optative verb forms are found with all of the pronominal persons (cf. 6.1.1), and in all cases a subject pronoun is obligatory. The Optative is structured as follows:

	<u>subject pronoun</u> +	<u>verb</u>		
	Optative pronoun (CV)	stem (Optative tone) (+ optional reflexive suffix)		
ex.	mí	hèè	let me climb! / I must climb	
	1SG:OPT	climb:OPT		
	má	hèè	let them climb! / they must climb	
	3SG:OPT	climb:OPT		
	ró	hèè	[you (pl.)] climb! / you (pl.) must climb	
	2PL:OPT	climb:OPT		
	mí	làà	?ígà	let me eat something! / I must eat something!
	1SG:OPT	eat:OPT	thing	
	ró	làà	?ígà	[you (pl.)] eat! / you (pl.) must eat something!
	2PL:OPT	eat:OPT	thing	
	má	làà-zí	?ígà	let them eat something! / they must eat something!
	3PL:OPT	eat:OPT-PL	thing	

Optionally, Optative forms of intransitive verbs may be accompanied by reflexive suffixes.

ex. **mǐ** **hèè-nǐ** let me climb!
 1SG:OPT climb:OPT-1SG.REFL

ró **hèè-ró** [you (pl.)] climb!
 2PL:OPT climb:OPT-2PL.REFL

As is the case with Future verb forms (7.4.1.2.1), no difference in meaning has been established between Optative forms of intransitive verbs without vs. with suffixes. Both may be found without (as directly above) or with complements:

ex. **mǐ** **hèè-nǐ** **zé'gà** let me climb the mountain!
 1SG:OPT climb:OPT-1SG.REFL mountain

ró **hèè-ró** **zé'gà** [you (pl.)] climb the mountain!
 2PL:OPT climb:OPT-2PL.REFL mountain

The verb **vè** 'go' (7.3.3.1) and detransitivized verb stems (7.3.2.1.2) are exceptional in that their Optative forms are always found with reflexive suffixes (see also Appendix 2).

Examples of Future forms from each of the six tonal classes (separated here for transitivity) are as follows:

tonal class, transitivity	v. word tone melody	example	
1 (intr.)	H(-H)	má yáá(-lé)	let him/her/it / he/she/it must move away
2 (intr.)	H(-H)	má súú(-lé)	let him/her/it / he/she/it must lie down
3 (intr.)	L-H	má vè-lé	let him/her/it / he/she/it must go
4 (intr.)	L(-H)	má hèè(-lé)	let him/her/it / he/she/it must climb
5 (tr.)	L-H	má yâà-lé	let him/her/it / he/she/it must finish (intr.)
6 (tr.)	L-H	má ?òògì-lé	let him/her/it / he/she/it must drag his/her/its feet
1 (tr.)	H	má béé	let him/her/it / he/she/it must bite
4 (tr.)	L	má gù	let him/her/it / he/she/it must answer
5 (tr.)	LH	má yâá	let him/her/it / he/she/it must finish (tr.)
6 (tr.)	LH	má ?òògí	let him/her/it / he/she/it must set crawling

Full paradigms are given for each class in Appendix 2.

In contrast to Indicative verb forms, transitivity requirements appear to be relaxed with Optatives in cases where an object has been previously mentioned.

mǐ **làà** **nàmq** [you (sg.)] eat meat!;
 2SG:OPT eat:OPT meat

... **mú** **làà** [you (sg.)] eat (meat)!
 2SG:OPT eat:OPT

When there is no explicit object with an Optative and the verb is phrase-final, an additional vowel is appended after some consonants (there is no accompanying change in the tone melody).

mú **tàg-á** [you (sg.)] sweep (something)!
 2SG:OPT sweep:OPT-V

cf. phrase-internal distribution:

mú **tǎg** **kyǎ'** [you (sg.)] sweep the place!
 2SG:OPT sweep:OPT place

This could be a historical remnant of an object suffix (cf., for example, **-rì**; see 7.3.1.3). However, since it is only found after some consonants and disappears in phrase-internal position, it is hard to define whether its contribution is phonological, morphosyntactic, or both. After transitive verb stems ending in a stop, an identical echo vowel is appended:

mú **dèg-é** [you (sg.)] burn (something)!
 2SG:OPT burn:OPT-V

mú **ràb-á** [you (sg.)] hug (something)!
 2SG:OPT hug:OPT-V

mú **lìb-í** [you (sg.)] straighten (something)!
 2SG:OPT straighten:OPT-V

After transitive verb stems ending in other oral consonants and **n**, the vowel **i** is appended.

mú **ròv-í** [you (sg.)] scald (something)!
 2SG:OPT scald:OPT-V

mú **wàr-í** [you (sg.)] leave (something)!
 2SG:OPT leave:OPT-V

mú **kàn-í** [you (sg.)] pass (something)!
 2SG:OPT pass:OPT-V

mú **lòl-í** [you (sg.)] crunch (something)!
 2SG:OPT crunch:OPT-V

mú 2SG:OPT	sàb-í vomit:OPT-V	[you (sg.)] vomit (something)!
mú 2SG:OPT	zò'm-í fix:OPT-V	[you (sg.)] fix (something)!
mú 2SG:OPT	wàhw-í bark:OPT-V	[you (sg.)] bark (something)!

As the examples above (in particular **kàn-í** and **zò'm-í**) show, nasality spreads from a final consonant to the appended vowel.

After transitive verb stems ending in a vowel or the nasal consonants **m** and **ŋ**, no vowel is appended.

mú 2SG:OPT	yáá finish:OPT	[you (sg.)] finish (something)!
mú 2SG:OPT	kúm protect:OPT	[you (sg.)] protect (something)!
mú 2SG:OPT	kyáŋ wait:OPT	[you (sg.)] wait (for something)!

7.4.2.2 Subjunctive constructions with **kà**

Optative verb forms are also found in subjunctive constructions with the adverbializer **kà** ‘when, and then’ (10.2.2.2). Semantically, a purpose clause (‘so that, in order to’) results from the combination of **kà** and the Optative verb form. The structure of the Optative in this context is the same as that found in main clauses (7.4.2.1).

Examples of Optative verb forms used with **kà** are as follows:

Ø **kǔ'-zì-rú** **wáà kà** **má yáá** **hùù** **?éré**
3:PFV put:PFV-PL-3SG.OBJ chief and.then 3:OPT be:OPT chief:LF 3PL.C/I.POSS

they made him chief so that he would be their chief

mùú **tî** **nàbàbbá kà** **mú** **làà** **kwáà** **nà**
2SG:IRR become:FUT locust.sp and.then 2SG:OPT eat: OPT grass QM

will you become a locust so that you can eat grass?

7.4.2.3 Subjunctive constructions with **pá** ‘make, do’

Finally, Optative verb forms are found in subjunctive constructions which pattern as the object of **pá** ‘make, do’ (7.6.3). In this case, a periphrastic causitive construction results:

mì	pàg-rú	má	tè'	I make him/her/it walk /
1SG	make:VN-3SG.OBJ	3:OPT	walk:OPT	I am making him/her/it walk

mì	pá-rù	má	làà	?ígà	I made him/her/it eat something
1SG	make:PFV-3SG.OBJ	3:OPT	eat:OPT	thing	

7.5 Verbal negation

Five of the six basic inflectional categories (7.4) have corresponding negative forms (7.5.1). The segmental and tonal form of a verb word remains constant when it is negated. Verbal negation is instead marked by negative particles (7.5.2), and with Indicative verb forms, by negative subject pronouns (7.5.3). A summary of negative verbal forms is provided in 7.5.4.

7.5.1 Inventory of negative forms

The following basic inflectional categories have corresponding negative forms:

- basic Perfective
- Pluperfect
- Imperfective
- Future
- Optative

An example of each of the negative forms is found in 7.5.3 below.

There are no negative forms corresponding to the Perfect tense. In the context of discourse, when a Perfect verb is negated, a negative Perfective form is used (this is similar to the neutralization of negative “past” and “anterior” forms by many speakers of Swahili; see Dimmendaal 2000:172–3).

mì	làà-rì	?ígà		I have eaten something
1SG	eat:PERF-PERF	thing		
mìí	làà	?ígà	yá	I did not eat something /
1SG:PFV.NEG	eat:PFV	thing	NEG	I have not eaten something

7.5.2 Negation particles

There are two negation particles used with verbs: **yá** and **gá**.

The particle **yá** is used with Indicative (7.4.1) verb forms. It is also found in other negative constructions. Its use with verbs is illustrated by the following examples:

mìí	làà	?ígà	yá	I did not eat something
1SG:PFV.NEG	eat:PFV	thing	NEG	

m̩̀ **làà** **ʔígà** **yá** I am not eating something
 1SG:NONPFV.NEG eat:VN thing NEG

In terms of nasality, **yá** is a clitic, since it takes the nasal value of the last syllable of the preceding morpheme (3.4.3.6).

m̩̀ **sùù** **yá** I did not lie down
 1SG:PFV.NEG lie.down:PFV NEG

m̩̀ **làà** **nàmá** **yá** I am not eating meat
 1SG:NONPFV.NEG eat:VN meat NEG

The particle **gá** is used exclusively to negate Optative (7.4.2) verb forms. This is shown in the following examples.

m̩̀ **hèè** **gá** don't [you (sg.)] climb! /
 2SG:OPT climb:OPT NEG:OPT you (sg.) mustn't climb!

m̩̀ **hèè-zí** **gá** don't let them climb! /
 3:OPT climb:OPT-PL NEG:OPT they mustn't climb!

7.5.3 Negative subject pronouns

In addition to being marked by negative particles (7.5.2), verbal negation is marked on Indicative subject pronouns (6.1.2). Negative Indicative pronouns exhibit the CVV shape which distinguishes Irrealis verb forms, but their tonal value varies: negative Perfective verb forms are LH, and negative non-Perfective (negated Imperfective and Future) forms are HL.

Examples of negative Perfective forms are as follows:

m̩̀ **hèè** **yá** I did not climb
 1SG:PFV.NEG climb:PFV NEG

m̩̀ **yáá-ní** **yá** I had not moved away
 1SG:PFV.NEG move.away:PLUPERF-1SG.REFL NEG

cf. affirmative counterparts of the examples:

m̩̀ **hèè** I climbed
 1SG climb:PFV

m̩̀ **yáá-ní** I had moved away
 1SG move.away:PLUPERF-1SG.REFL

A third person negative Perfective pronoun **hǐǐ** may be used, apparently without a change in meaning, in place of the equivalent third person negative Perfective pronoun **ʔàá** (6.1.2.5).

hǐǐ	hèè	yá	he/she/it did not climb
3:PFV.NEG	climb:PFV	NEG	
= ʔàá	hèè	yá	he/she/it did not climb
3:PFV.NEG	climb:PFV	NEG	
hǐǐ	hèè-zí	yá	they did not climb
3:PFV.NEG	climb:PFV-PL	NEG	
= ʔàá	hèè-zí	yá	they did not climb
3:PFV.NEG	climb:PFV-PL	NEG	

Examples of negative non-Perfective (Imperfective and Future) forms are as follows:

mǐ	héérà	yá	I do not climb / I am not climbing
1SG:NONPFV.NEG	climb:VN	NEG	
mǐ	hèè	yá	I will not climb / I <i>will</i> not climb!
1SG:NONPFV.NEG	climb:FUT	NEG	

cf. affirmative counterparts of the examples:

mì	héérà	I climb / I am climbing
1SG	climb:VN	
mǐǐ	hèè	I will climb / I <i>will</i> climb!
1SG:IRR	climb:FUT	

A third person negative non-Perfective pronoun **hǐ** may be used, apparently without a change in meaning, in place of the equivalent third person negative non-Perfective pronoun **ʔáà** (6.1.2.6).

hǐ	héérà	yá	he/she/it is not climbing
3:NONPFV.NEG	climb:VN	NEG	
= ʔáà	héérà	yá	he/she/it is not climbing
3:NONPFV.NEG	climb:VN	NEG	
hǐ	héé-zí-rà	yá	they are not climbing
3NONPFV.NEG	climb:VN-PL-VN	NEG	

= **ʔáà** **hée-zí-rà** **yá** they are not climbing
 3:NONPFV.NEG climb:VN-PL-VN NEG

Negation is not marked on pronouns in Subjunctive verb forms.

mú **hèè** **gá** don't [you (sg.)] climb! /
 2SG:OPT climb:OPT NEG:OPT you (sg.) mustn't climb!

cf. its affirmative counterpart:

mú **hèè** [you (sg.)] climb! /
 2SG:OPT climb:OPT you (sg.) must climb!

7.5.4 Summary of negative verbal forms

Negative verb forms are marked with negation particles (7.5.2) and negative subject pronouns (7.5.3). These forms are summarized in the following table:

Negative verbal forms in Mambay

negative verb form	subject pronoun	verb shape and tone melody	negative particle
Perfective (basic)	PFV.NEG pronoun (C [̀] V [́] V [́])	stem + PFV	yá
Pluperfect	PFV.NEG pronoun (C [̀] V [́] V [́])	stem + PLUPERF	yá
Imperfective (basic)	NONPFV.NEG pronoun (C [́] V [̀] V [̀])	verbal noun	yá
Future	NONPFV.NEG pronoun (C [́] V [̀] V [̀])	stem + FUT	yá
Optative	OPT pronoun (C [́] V [́])	stem + OPT	gá

7.6 Expansions of verbal inflection

Expanded verb forms allow for functional enrichment of the categories in the basic inflectional system. While some are formed by means of TAM indicators (7.6.1), others are formed using possessive constructions (7.6.2) and complex inflectional constructions, including serial and auxiliary verb constructions (7.6.3).

7.6.1 TAM indicators

In addition to TAM (Tense/Aspect/Mode) marking in the basic verbal system (7.4), TAM is marked by means of TAM particles (7.6.1.1) and adverbs (7.6.1.2). Particles form a closed set and, since they bear a single mora, do not meet the minimal weight requirements for adverbs (8.1, 8.3). TAM adverbs, on the other hand, are part of the open class of adverbs (8.1).

TAM indicators are prototypically found with verbs. The syntactic distribution of each group is distinctive (and as concerns adverbs, complex), and is discussed in the individual subsections. The examples in the following subsections show that while TAM indicators expressing aspect are found with a wide range of verb forms, those which express distinctions of mood are often limited to Optative forms.

TAM indicators found with Indicative verbal forms are also attested with verbless clauses (10.1.3). Representative examples of this are as follows:

- example particle with a verbless clause:

yó ‘indeed, (affirmative particle)’ (10.1.2.2)

Kwéé	yó	it is Kwé
(personal name)	(affirmative particle)	

cf. an example of its verbal use:

mì	té’là	yó	I am indeed climbing
1SG	walk:VN	indeed	

- example adverb with a verbless clause

?àhná ‘maybe’

?àhná	mì	má	sámà	maybe I am pregnant /
maybe	1SG	with	pregnancy	I may be pregnant

cf. an example of its verbal use:

?àhná	mì	té’là	maybe I am walking /
maybe	1SG	walk:VN	I may be walking

Some TAM indicators may be found in combination with other ones; this enriches the matrix of TAM possibilities greatly. Such combinations are illustrated by the following examples:

?àhná ‘maybe’ + **nà** ‘(question particle)’

?àhná	mì	té’là	nà	perhaps I am walking...?
maybe	1SG	walk:VN	QM	

ďâh ‘go ahead...’ + **yâh** ‘for now, go ahead’

mų **ďâh** **té’** **yâh** go ahead and walk for now!
2SG:OPT go.ahead walk:OPT for.now

gíí ‘so...(plaintive), but then’ + **rè** ‘come on, (topicalizer)’

gíí **mų** **té’** **rè** so come on and walk!
so 2SG:OPT walk:OPT come.on

tà’ ‘so...(plaintive), but then’ + **yá** (Indicative negative particle)

mĭĭ **té’** **tà’** **yá** I will not walk again /
2SG:IRR walk:FUT again NEG I will never walk

7.6.1.1 TAM particles

TAM particles are divided into two groups, one of which functions with Indicative clauses (cf. 7.4.1), and the other of which functions with Optative (7.4.2) verb forms. All of these particles are consistently found in post-verbal position; the patterning of these particles in clauses is described in 10.1.2.

7.6.1.1.1 Indicative particles

TAM particles found with clauses containing Indicative verb forms have been described in greater detail in 10.1.2. These are as follows:

nà ‘(question particle)’

mų **té’là** **nà** are you walking?
2SG walk:VN QM

rè ‘(topicalization/floor-holding particle)’ (also found with Optative clauses; see 7.6.1.1.2)

mĭ **té’là** **rè** I am walking, you know...
1SG walk:VN TOPIC

yá ‘(Indicative negative particle)’ (cf. 7.5.2)

mĭĭ **té’là** **yá** I am not walking
1SG:NONPFV.NEG walk:VN NEG

yó ‘indeed, (presentational particle)’

mĭ **té’là** **yó** I am indeed walking
1SG walk:VN indeed

The question particle **nà** may be combined with either **yá** ‘(Indicative negative particle)’ or **yó** ‘indeed, (presentational particle)’:

mùù	té’là	yá	nà	aren’t you walking?
2SG:NONPFV.NEG	walk:VN	NEG	QM	

mù	té’là	yó	nà	are you indeed walking?
2SG	walk:VN	indeed	QM	

7.6.1.1.2 Optative particles

TAM particles found exclusively with clauses containing Optative verb forms are as follows:

bè ‘first’

mù	lá’	bè	listen first! / just listen!
2SG:OPT	listen:OPT	first	

gá ‘(Optative negative particle)’ (7.5.2)

mù	té’	gá	don’t walk! / you mustn’t walk!
1SG:OPT	walk:OPT	NEG:OPT	

kò ‘come on, first’ (**kò** is also used as a clause-initial conjunction ‘if, when’; see 10.2.2.2)

mù	lá’	kò	come on, listen first! / come on, listen up!
2SG:OPT	listen:OPT	come.on	

lè ‘please’ (Fulf. borr.)

mù	té’	lè	please eat!
2SG:OPT	walk:OPT	please	

One TAM particle found with clauses containing Indicative verb forms (7.6.1.1.1) may also be used with clauses containing Optative verb forms.

rè ‘come on’ (10.1.2.4)

mù	té’	rè	come on, eat!
2SG:OPT	walk:OPT	come.on	

Optative TAM particles are never found in combination with one another.

7.6.1.2 TAM adverbs

TAM adverbs constitute an open set, and there is no clear boundary between TAM adverbs and other adverbs (8.1). In addition to a majority of morphologically simple adverbs, composed and reduplicated adverbs are attested (e.g. **bóm gbúù** ‘once more’ and **dáhbì dáhbì** ‘repeatedly’).

The syntactic distribution of TAM adverbs is heterogeneous: they are found before subject pronouns, after verb words, in both of these positions and, in one case (**dáh** ‘go ahead...’), between the subject pronoun and verb word. However, consistent TAM functions are associated with each position.

Before subject pronoun

TAM adverbs found before the subject pronoun express modal information; attested items are as follows:

?àhná ‘maybe’

?àhná	mì	té’là	maybe I am walking /
maybe	1SG	walk:VN	I may be walking

bàhrá ‘better’

bàhrá	mì	té’là	it is better that I walk
better	1SG	walk:VN	

gíí ‘so...(plaintive), but then’ (cf. **gù** ‘answer, accept, admit’)

gíí	mú	té’	so (plaintive) walk! /
so	2SG:OPT	walk:OPT	so (plaintive) you must walk!

kyáh ‘need, it is necessary’

kyáh	mú	té’...	you need to walk!... /
need	2SG:OPT	walk:OPT	it is necessary that you walk...

lá’ ‘it seems; may’ (cf. **là’** ‘hear, feel, understand’)

lá’	mì	té’là	it seems that I am walking /
it.seems	1SG	walk:VN	I seem to be walking

lá’	mú	té’	may you walk!
may	1SG:OPT	walk:OPT	

làrà / làà ‘if only, almost, about to’

làrà	mì	tè’	if only I had walked / I almost walked / I was about to walk
if.only	1SG	walk:PFV	
= làà	mì	tè’	if only I had walked / I almost walked / I was about to walk
if.only	1SG	walk:PFV	

sé’ ‘must; except, only, until’

sé’	mú	té’	you must walk!
must	2SG:OPT	walk:OPT	

Between subject pronoun and verb word

A single TAM adverb has been attested between the subject pronoun and the verb word:

đâh ‘go ahead...’

mú	đâh	té’	go ahead and walk!
2SG:OPT	go.ahead	walk:OPT	

After verb word

TAM adverbs may be found after verb words.

mǐ	té’	bé’n	first, I will walk
1SG:IRR	walk:FUT	first	

If the verb takes an object, the object precedes the TAM adverb (10.1.1).

mǐ	làà	?ígà	bé’n	first, I will eat something
1SG:IRR	eat:FUT	thing	first	

TAM adverbs found after verb words are of two types: aspectual adverbs found with a range of semantically compatible verb forms and, in two cases, mood adverbs found with Optative verb forms.⁹ Attested items are as follows:

bà’ ‘right after’

mǐ	té’	bà’	I will walk right after
1SG:IRR	walk:FUT	right.after	

⁹ If you’ve been reading closely enough to find this note, I would like to take you out for a drink.

bé'n 'first'

mǐ́ té' bé'n first, I will walk
1SG:IRR walk:FUT first

bóm gbúù 'once more' (cf. **bóm** 'one'; see **gbúù** 'again' below)

mǐ́ té' bómb gbúù I will walk once more
1SG:IRR walk:FUT once.more

ǎà' '(past marker)'

mì tẹ' ǎà' I walked (PAST)
1SG walk:PFV PAST

dáhbì dáhbì 'repeatedly'

mì tẹ' dáhbì dáhbì I walked repeatedly
1SG walk:PFV repeatedly

fàà ʔéré fàà ʔéré 'repeatedly' (cf. **fàà** 'back, skin, behind (linked form),' **ʔéré** 'their (coref./impers.)')

mì tẹ' fàà ʔéré fàà ʔéré I walked repeatedly
1SG walk:PFV repeatedly

gbáŋ 'please / I beg'

mú té' gbáŋ walk, please! / walk, I beg you!
2SG:OPT walk:OPT please

gbúù / dòó-gbúù 'again'

mì té'là gbúù I am walking again
1SG walk:VN again

= **mì té'là dòó-gbúù** I am walking again
1SG walk:VN again

hùngù yá 'no longer' (cf. **yà** '(Indicative negative particle)')

mǐ́ té' hùngù yá I will not walk any longer
1SG:NONPFV.NEG walk:FUT no.longer

hùngù yô' 'never again'

m̩̀ **té'** **hùngù yô'** I will never walk again
1SG: NONPFV.NEG walk:FUT never.again

kpàṅ yá' 'never' (cf. **kpàṅ** 'different' **yá'** '(Indicative negative particle)')

m̩̀ **té'là** **kpàṅ yá'** I never walk
1SG: NONPFV.NEG walk:VN never

lǎṅ 'while waiting, also'

m̩̀ **té'** **lǎṅ** while you're waiting, walk! /
2SG:OPT walk:OPT while.waiting you also walk!

lì' 'definitively, directly, forever'

m̩̀ **té'** **lì'** I will walk directly /
1SG:FUT walk:FUT definitively I will walk forever

sò' yá' 'not yet' (cf. **yà** '(Indicative negative particle)')

m̩̀ **té'là** **sò' yá'** I am not walking yet
1SG:NONPFV.NEG walk:VN not.yet

tà' 'also'

m̩̀ **té'** **tá'** I will also walk
1SG:IRR walk:FUT also

tém yá' 'never' (cf. **tém** 'differently,' **yá'** '(Indicative negative particle)')

m̩̀ **té'là** **tém yá'** I never walk
1SG: NONPFV.NEG walk:VN never

tígì 'please, forgive me but'

m̩̀ **té'** **tígì** walk, please! / forgive me, but walk!
2SG:OPT walk:OPT please

tí' tí' 'always'

m̩̀ **té'là** **tí' tí'** I always walk / I am always walking
1SG walk:VN always

títím títím ‘repeatedly’

mì	té’	títím títím	I walked repeatedly
1SG	walk:PFV	repeatedly	

vòró ‘keep on; to there’ (cf. 8.1.1.1)

mù	té’	vòró	keep on walking! / walk there!
2SG:OPT	walk:OPT	keep.on	

Two attested positions

A handful of TAM adverbs may be found in either pre-pronoun or post verb-word position. There are semantic differences corresponding to the position of these adverbs; the differences reflect the typical function of TAM adverbs in each of the positions (pre-pronoun or post verb-word). Attested items are as follows:

bî’ ‘a little, almost’

mì	té’là	bî’	I am walking a little
1SG	walk:VN	a.little	

bî’	mì	té’	I am almost walking
almost	1SG:OPT	walk:OPT	

wîr-gíí ‘already, still; so...(plaintive)’ (cf. above: **gíí** ‘so...(plaintive), but then’)

mì	té’là	wîr-gíí	I am already walking / I am still walking
1SG	walk:VN	still	

wîr-gíí	mù	té’	so (plaintive) walk! / so (plaintive) you must walk!
so	2SG:OPT	walk:OPT	

yâh ‘for now, go ahead’ (cf. **yâh** ‘call, invite’)

mù	té’	yâh	walk for now! / go ahead and walk!
2SG:OPT	walk:OPT	for.now	

yâh	mì	té’là	for now, I am walking
for.now	1SG	walk:VN	

7.6.2 Possessive constructions

An expansion of the Imperfective (7.4.1.1.2), the Imperfective Progressive 1, is formed by placing a verbal noun in the possessor position of a possessive construction (cf. 5.3).

Imperfective Progressive 1

Structure: Realis pronoun + possessive construction with **káà** (linked form of **káálà** ‘head/on’; see 5.2.2) plus possessor verbal noun

mì	káà	té’là	I am in the process of walking
1SG	head/on:LF	walk:VN	

Note that, formally speaking, this is a verbless clause (cf. 10.1.3).

7.6.3 Complex inflectional constructions

There are two kinds of complex inflectional constructions: serial verb constructions (7.6.3.1) and verbal constructions formed by means of auxiliaries (7.6.3.2).

7.6.3.1 Serial verb constructions

Two types of serial verb constructions are commonly attested in Mambay: these have been labelled Realis Future 2 and Imperfective Progressive 2.

Realis Future 2

In Realis Future 2 constructions, two finite verbs are found together, and there is no independent person marking on the second finite verb (as per the typical serial verb constructions described in Payne 1997:308).

Structure: various forms of **vè** ‘go’ + Perfective verb word

mì	vè	tè’	I was going to walk
1SG	go:PFV	walk:PFV	
nà	vè-zí	tè’	we (incl.) were going to walk
1&2	go:PFV-PL	walk:PFV	

Imperfective Progressive 2

Structure: optional Realis pronoun + **tògó** ‘be’ (7.3.3.3) + Imperfective

ex. (mì)	tòg	mì	té’là	I am walking / I am in the
1SG	be	1SG	walk:VN	process of walking

The optional nature of the subject pronoun with **tògó** ‘be’ shows that two discrete types of constructions are used to express the Imperfective Progressive 2. When **tògó** is found with its own subject pronoun, the Imperfective Progressive 2 is a serial verb construction.

Evidence for its identity as a serial verb construction rather than an instance of juxtaposed clauses comes from two directions: first, the subject of both **tògó** ‘be’ (when it is used) and the subject of the following Imperfective verb form must be identical; and second,

tògó appears in the Imperfective Progressive 2 as **tǒg**, which is its phrase-internal realization (cf. its phrase-final realization; see 7.3.3.3; also cf. Payne 1997:308–9).

The optional nature of the subject pronoun with **tògó** ‘be’ suggests that **tògó** is in the process of being grammaticalized as a TAM adverb (7.6.1.2) with progressive meaning.

7.6.3.2 Constructions with auxiliaries

A variety of complex inflectional constructions employ auxiliaries, that is, verbs which are head of the verb phrase but which do not embody the main activity expressed by the clause (Payne 1997:84). In addition, the examples below show that auxiliaries express a meaning that is not fully compositional, that is, one which differs from the meaning found when the same verb *does* embody a clause’s main activity.

When an auxiliary is used in Mambay, the main activity or state is expressed as an object or adverbial complement of the auxiliary. Formally, there are two major types of constructions with auxiliaries: those followed by verbal nouns (7.6.3.2.1), and those followed by subordinate clauses (7.6.3.2.2).

7.6.3.2.1 Auxiliaries followed by verbal nouns

Most auxiliaries are followed by verbal nouns, which express the central event or state of a clause. This given, there are three positions in which the verbal noun accompanying an auxiliary may be found:

1. on its own;

m̀	ḍáá	té’là	I was able to walk
1SG	find:PFV	walk:VN	

2. prefixed with **k̀i-** ‘place, time, situation’ (5.1.2.4.5);

m̀	ʔèr	k̀i-té’là	I was just walking
1SG	get.up:PFV	place:PFX-walk:VN	

3. as a complement of a preposition (cf. 9.3)

m̀	t̀j̀	m̀á	té’là	I walk (habitually) /
1SG	become:PFV	with	walk:VN	I walked (habitually)

As is evident from the first and second examples here, the distribution of a verbal noun vs. a verbal noun prefixed with **k̀i-** does not appear to be semantically significant. However, in most cases a given auxiliary is syntactically limited to one of the two strategies; the reasons for the choice of one form over another are not clear. Both are found with intransitive as well as intransitive verbs, so based on transitivity requirements established elsewhere in the language (7.3.2.1), verbal nouns (with or without **k̀i-**) must be viewed variously as adverbial complements (with intransitive auxiliaries) or objects (with transitive auxiliaries).

The inflectional categories expressed by constructions have been organized according to form and labelled according to their function as follows:

- Habitual
- Potential
- Realis Future 3
- Recent Past
- Past-Imperfective 1
- Future-Imperfective 1
- Past-Imperfective 2
- Future-Imperfective 2

The structure and function of these forms is described below, and a chart summarizing the structure of all the forms is found at the end of this section.

Habitual

Structure: various forms of **t̩̩** ‘become’ + prepositional phrase composed of **má** ‘with’ and a verbal noun

ex. m̩̩	t̩̩	má	té’là	I walk (habitually) /
1SG	become:PFV	with	walk:VN	I walked (habitually)
m̩̩̩̩	t̩̩	má	té’là	I will walk (habitually)
1SG:IRR	become:FUT	with	walk:VN	

Potential

Structure: various forms of **ḍáá** ‘find, succeed, have’ + verbal noun

ex. m̩̩	ḍáá	té’là	I was able to walk
1SG	find:PFV	walk:VN	
m̩̩̩̩	ḍáá	té’là	I will be able to walk
1SG:IRR	find:FUT	walk:VN	

Realis Future 3

Structure: various forms of **vè** ‘go’ + verbal noun (without or with **kì-**)

ex. m̩̩	vè	té’là	I was going to walk
1SG	go:PFV	walk:VN	
= m̩̩	vè	kì-té’là	I was going to walk
1SG	go:PFV	place:PFX-walk:VN	

	mǐ	ví-nǐ	té'là	I will be going to walk
	1SG:IRR	go:FUT-1SG.REFL	walk:VN	
=	mǐ	ví-nǐ	kì-té'là	I will be going to walk
	1SG:IRR	go:FUT-1SG.REFL	place:PFX-walk:VN	

Recent Past

Structure: various forms of **ʔèr** ‘get up’ or **hàà** ‘come back, go back’ + verbal noun with **kì-**

ex.	mǐ	ʔèr	kì-té'là	I was just walking
	1SG	get.up:PFV	place:PFX-walk:VN	
	mǐ	ʔèr	kì-té'là	I will have just been walking
	1SG:IRR	get.up:FUT	place:PFX-walk:VN	
	mǐ	háá	kì-té'là	I was just walking
	1SG	come.back:PFV	place:PFX-walk:VN	
	mǐ	háá	kì-té'là	I will have just been walking
	1SG:IRR	come.back:FUT	place:PFX-walk:VN	

Past-Imperfective 1

Structure: Perfective of **yàà** ‘sit, stay, be’ + verbal noun with **kì-** (cf. 5.1.4.2.5)

ex.	mǐ	yàà	kì-té'là	I was walking / I have been walking / I just walked
	1SG	be:PFV	place:PFX-walk:VN	

Future-Imperfective 1

Structure: Future of **yàà** ‘sit, stay, be’ + verbal noun with **kì-**

ex.	mǐ	yáá	kì-té'là	I will be walking
	1SG:IRR	be:FUT	place:PFX-walk:VN	

Past-Imperfective 2

This construction and the parallel Future-Imperfective 2 (immediately below) are interesting in that the agent of the clause’s semantically central verb is demoted from subject position to that of the object of the auxiliary **ǎáá** ‘find, succeed, have.’

Structure: Perfective of **ǎáá** + object pronoun + verbal noun with **kì-** ‘find, succeed, have’

ex.	∅	ǎáá	mǐ	kì-té'là	I was walking (lit. it found me walking)
	3:PFV	find:PFV	1SG.OBJ	place:PFX-walk:VN	

Future-Imperfective 2

Structure: Future of **ḍáá** ‘find, + object pronoun + verbal noun with **kì-** succeed, have’

ex. **ʔàá** **ḍáá** **mí** **kì-té’là** I will be walking
 3:IRR be:FUT 1SG.OBJ place:PFX-walk:VN (lit. it will find me walking)

The following table organizes the structural characteristics of expanded verb forms constructed by means of auxiliary verbs with verbal nouns:

Structure of verb forms with auxiliary verbs followed by verbal nouns

complex verb form	auxiliary verb	clause agent as object of aux. v.	preposition	form of semantically principal verb
Habitual	t̩̩ ‘become’	—	má	VN
Potential	ḍáá ‘find’	—	—	VN
Imminent 2	vè ‘go’	—	—	VN / kì -VN
Recent Past	ʔèr ‘get up’ / hàà ‘come back, go back’	—	—	kì -VN
Past-Imperfective 1	yàà ‘sit, stay, be’ (PFV)	—	—	kì -VN
Future-Imperfective 1	yàà ‘sit, stay, be’ (FUT)	—	—	kì -VN
Past-Imperfective 2	ḍáá ‘find’ (PFV)	✓	—	kì -VN
Future-Imperfective 2	ḍáá ‘find’ (FUT)	✓	—	kì -VN

7.6.3.2.2 Auxiliaries followed by subordinate clauses

In addition to being followed by verbal nouns (7.6.3.2.1), auxiliaries may be followed by subordinate clauses. Past and Future 2 constructions are made possible by periphrastic

constructions in which the auxiliary verb **ḍáá** ‘find, succeed, have’ is followed by a subordinate clause (cf. 10.2.2.2).

Past

Structure: Perfective of **ḍáá** ‘find, succeed, have’ + subordinate clause

ex. Ø **ḍáá** **kà** **mì** **tè’** I walked (lit. it found that
 3:PFV find:PFV and.then 1SG walk:PFV I walked)

Ø **ḍáá** **kà** **mì** **té’là** I was walking (lit. it found
 3:PFV find:PFV and.then 1SG PFX-walk:VN that I walk)

Future 2

Structure: Future of **ḍáá** ‘find, succeed, have’ + subordinate clause

ex. **?àá** **ḍáá** **kà** **mì** **tè’** I will have walked (lit. it will
 3:IRR find:FUT and.then 1SG walk:PFV find that I walked)

?àá **ḍáá** **kà** **mì** **té’là** I will be walking (lit. it will
 3:IRR find:FUT and.then 1SG place:PFX-walk:VN find that I am walking)

7.7 Composite verbal expressions

Composite verbal expressions constitute an important part of the verb lexicon; well over a third of the verbs in the data (347 out of 948) are composite expressions. In contrast to verb expansions, which have to do with enrichment of the inflectional system (7.6), composite verbal expressions may be found as lexical items (Dimmendaal 2000:179). As with compound nouns (cf. 5.4), composite verbal expressions are primarily distinguished from spontaneously constructed verb phrases by recurrent usage rather than structure. As fixed collocations, they tend to express a single verbal concept; and this semantic value is often idiomatic.

The following structures have been attested for composite verbal expressions:

- verb stem + noun (7.7.1)
- verb stem + prepositional phrase (7.7.2)
- verb stem + directional adverb (7.7.3)
- verb stem + adjective (7.7.4)
- verb stem + ideophonic adverb (7.7.5)

For composite verbal expressions containing transitive verbs and whose additional element is not a noun, an object or dummy object (7.3.2.1.2) (neither of which are necessarily lexicalized as part of the composite verbal expression) must also be present.

gbàh ?ígà gbìrìz surprise something
 catch thing IDEO

7.7.1 Verb stem + noun

Composite verbal expressions most commonly exhibit a verb stem + noun structure, and the noun is usually an object.

ḍáá	syòó	sing	hèè	kángà	be initiated (males)
find	song		climb	male.circumcision	
làà	ríjvà	inherit	vúm	fyáhà	work the bellows
eat	inheritance		blow	bellows	

Some verb stems in the lexicon are limited to specific objects.

mwì'	gwá'rà	smile	vìì	hìhnà	be afraid
smile	laugh(n.)		fear(v.)	fear(n.)	
súm	?àhrá	punt	yél	káálà	trouble, amuse
punt	canoe		disturb	head	

The basic verb **pá** 'make, do' appears recurrently as part of composite verbal expressions. In such cases, objects are underived nouns which refer to activities.

pá	kì-swá'	thank	pá	vérgà	travel
make	PFX:place-thanks(n.)		make	travel(n.)	
pá	kúúrà	hunt	pá	síjnà	play
make	hunting		make	play(n.)	

A number of objects also appear recurrently as part of composite verbal expressions. These nouns, which are common objects of (primarily human) animate behaviour and physicality, are as follows: **dágà** 'mouth, edge' **káálà** 'head, reason' **nìnnú** 'bottom, meaning,' **rò'rá** 'word, issue,' **?ínù** 'body, self.' Example usage of each of these objects is as follows:

sú'	dágà	be corrupt	nàh	káálà	leave
pull	mouth		take.out	head	
gbáh	dágà	plan	déé	káálà	prevent
catch	mouth		chop	head	
kùḍ'	dágà	stutter, babble	wàh	káálà	get someone into
study	mouth		dip	head	difficulty
lòòń	dágà	annoy, bother	yèl	káálà	trouble, amuse
tire	mouth		disturb	head	

ɓà' cut	ǹ̩ǹ̩ú bottom	slander	dèrgí cut.off	rò'rá word	mumble
ɓàl split	ǹ̩ǹ̩ú bottom	explain	gì answer	rò'rá word	answer
lùgún cause.to.leave	ǹ̩ǹ̩ú bottom	reveal, betray	rí' enter	rò'rá word	imply
nà'w spank	ǹ̩ǹ̩ú bottom	spank	sáá tell	rò'rá word	tell
gbáh catch	ʔínù body	abstain	ryáh mourn	ʔínù body	complain
làà eat	ʔínù body	gossip	sàrgí lean(tr.)	ʔínù body	lean

Nouns which are part of composite verbal expressions may also act as locative, manner or purpose complements.

locative:

súú lie.down	káà head/on:LF	tâ'wgí rope:LF	bóm one	agree
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manner:

wàr leave	ʔígà thing	syâg oneself:LF	ʔéé 3SG.C/I.POSS	abandon
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purpose:

yáh take	káà head/on:LF	sòg work:VN	sòglá work(n.)	hire
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7.7.2 Verb stem + prepositional phrase

Composite verbal expressions are sometimes constituted of a verb stem and a prepositional phrase beginning with **má** 'with, and.' These constructions are structured in the same way as verbs with typical prepositional phrase complements (9.3).

ʔáh paddle	ʔígà thing	má with	fûrgá paddle(n.)	paddle
dêh bow.low	má with	káà-nà-sí'nù knee		kneel

dúú **?ígà** **má** **'màhná** kick
hit thing with foot

híí **?ígà** **má** **dágà** promise
give thing with mouth

7.7.3 Verb stem + directional adverb

Composite verbal expressions may also be constituted of a verb stem and a directional adverb.

háá **kètí** be high
come.back upward

háá **sùgú** be low
come.back downward

kàn **?ígà** **tùm** overtake something
pass thing forward

kyàh **?ígà** **hîn** borrow something
want thing to.here

7.7.4 Verb stem + adjective

Additionally, composite verbal expressions may be constituted of a verb stem followed by an adjective.

hàn **?ígà** **'wàgàgà** roughen something
render thing rough

pá **?ígà** **zèyzèy** cause something to be proud
make thing proud

7.7.5 Verb stem + ideophonic adverb

Finally, composite verbal expressions may be constituted of a verb stem followed by an ideophonic adverb.

háá **vbìgtìg** return without having accomplished anything
come.back IDEO

sòò **vbòlvbòl** boil furiously
become.hot IDEO

tè' **tégùtégu** hobble about with one's head and neck jutting out in front
walk IDEO

ʔùrní **ḃárán** right, set straight
stand IDEO

In some cases, ideophonic adverbs are bound to a specific verb stem in the lexicon.

dím **ʔígà** **kpírá** cover something by leaning over with arms or wings
cover thing IDEO

gbàh **ʔígà** **gbìrìz** surprise something
catch thing IDEO

tìg **váhb** faint
fall IDEO

tìg **'wáb** fall freely and crash (something breakable like a gourd)
fall IDEO

ADVERBS, ADJECTIVES AND IDEOPHONES

This chapter deals with adverbs and adjectives. Since ideophones comprise a majority of adverbs as well as adjectives, they are also treated here as a parallel topic with major implications for both of these word classes. The first major section (8.1) discusses adverbs, with a focus on two categories: directional adverbs and TAM (tense/aspect/mode) adverbs. The subsequent section addresses topics pertaining to ideophones in general (8.2). The description then focusses on ideophonic adverbs (8.3) as well as adjectives (8.4), the great majority of which are ideophonic. The final section treats derivational phenomena associated with ideophones from various word classes (8.5).

8.1 Adverbs

Three types of adverbs are found in Mambay: directional adverbs, TAM (tense/aspect/mode) adverbs, and ideophonic adverbs. The first two types, which constitute semantically unified sets, are discussed in the present section (8.1.1, 8.1.2). Remaining adverbs, which are consistently ideophonic in nature (8.3) and function as qualifiers as well as quantifiers (8.2), are presented after the topic of ideophones in general is introduced in 8.2.

Functions which are expressed by adverbs in some languages (such as locational and temporal functions) are commonly expressed in Mambay by nouns (5.13) and prepositional phrases (9.3) used adverbially. The following data show unambiguous noun morphology and/or syntax (alienable and inalienable possession or accompaniment by a specifier; see 5.3.3.3 and 9.2):

sìrǎ́	year, last year
mǎgá	today
sì mǎgá	this year
year:LF today	
fààlá	back, skin
fààlé	behind/after him/her/it (coref.) / behind/after it
back/after:3SG.COREF/IMPERS.POSS.INAL	

sí-nùú two days ago
sí-nùù **nùú** three days ago
 PFX-two.days.ago:LF that

However, their locational and/or temporal function is evident not only from the glosses, but also from their adverbial usage in examples such as the following:

sùrǎ zòl-lé
 year leave:PFV-3SG.REFL
he/she/it left (i.e., went away) last year

fàalé, dáá sòglá figíl
 back/after:3SG.C/I.POSS.INAL find:PFV work Figuil
after this, he/she/it found work in Figuil

sí-nùú mì lá' fámǵí ?éé
 PFX-two.days.ago:LF 1SG hear:PFV announcement 3SG.C/I.POSS.INAL
a couple of days ago I heard news of him/her/it

?àá háá sù mǵá
 3SG:IRR come.back:FUT year:LF today
he/she/it will come back this year

The following examples show prepositional phrases used adverbially:

háá-lê-n má hâr-nǎ
 come.back:PFV-3SG.REFL-to.here with hurry:VN-OBJ
he/she/it came back here hurriedly

tìg-lé bèè sùm-ní ?úúrú
 fall:PFV-3SG:REFL without know:VN-OBJ:LF 3SG.POSS
it fell unknowingly (lit. it fell without his/her knowledge)

mǎ-?ì-nǎǎ tǒǵ bǎdǵí-zí lààbá má líbà
 with-HEAD-this be peck.around:VN-PL eat:VN with evening
meanwhile, they were pecking food in the evening

má-kì-dô' **yàà-zí** **fíìlò**
 with-place:PFX-that.ANAPH sit:PFV-PL house
at that time, they lived in the house

8.1.1 Directional adverbs

There is a closed set of six directional adverbs in Mambay. These are distinct from locative nouns (5.13) as well as prepositions (9.3) in that they obligatorily co-occur with verbs. Other differences among these forms are catalogued in 9.3.3.

8.1.1.1 Inventory

Directional adverbs, which are found in three semantically opposed pairs, are as follows:

hîn ~ -ìn ~ -n̄	to here
vòró ~ vè	to there
kètí	upward
sùgú	downward
fàáàrì	backward
tùm	forward

The directional adverb **hîn** ‘to here,’ may attach directly to the verb word as **-ìn** (with consonant-final stems) or **-n̄** (with vowel-final stems) when there is no intervening object (7.3.1.6).

mù háá-r̄-în	you had come back to here
2SG come.back:PLUPERF-2SG.REFL-to.here	
= mù háá-r̄ hîn	you had come back to here
2SG come.back:PLUPERF-2SG.REFL to.here	
?àà háá-n̄	he/she/it will come back here
3SG:IRR come.back:FUT-to.here	
= ?àà háá hîn	he/she/it will come back here
3SG:IRR come.back:FUT to.here	

There is no difference in meaning between **vòró** and **vè** ‘to there.’ **vòró** appears to have its origins in the perfect verb word **vòró** ‘you (pl.) have gone,’ and **vè** appears to be derived from the simple perfective form **vè** ‘went’ (see Appendix 2 for all conjugated forms of **vè** ‘go’). While both forms are used throughout the language area, the shorter form **vè** appears to be more common in rapid speech and in dialects north of the river.

The adverb **kètí** ‘upward’ is structurally identical to the noun **kètí** ‘sky, life,’ and the adverb **fàárì** ‘backward’ is structurally identical to the ordinal noun **fàárì** ‘last’ (9.1.3). Cognates in other word classes are lacking for the other directional adverbs..

8.1.1.2 Distribution

Directional adverbs are primarily found with intransitive verbs which mark a change in position, such as **vè** ‘go,’ **húm** ‘come,’ **háà** ‘come back, go back,’ **tè** ‘walk,’ **hèè** ‘climb, go up’ and **'mí** ‘go down.’

Host verbs must be semantically compatible with accompanying directional adverbs; combinations such **vè** ‘go’ + **hîn** ‘to here’ and **hèè** ‘climb, go up’ + **sùgú** ‘downward’ are not permitted.

A directional adverb directly follows the verb it modifies. In the case of the short forms of the directional adverb **hîn** ~ **-în** ~ **-n** ‘to here’ (see 8.1.1.1 immediately above) it is suffixed to the verb; also, when there is an object, it follows that object (see the end of this subsection). Attested usages of each of the directional adverbs with intransitive verbs are as follows:

mú 2SG.OPT	tè'-n̄ walk:OPT-to.here		[you (sg.)] come here!
mú 2SG.OPT	tè' walk:OPT	vòró to.there	[you (sg.)] go there!
mú 2SG.OPT	hèè climb:OPT	kètí upward	[you (sg.)] climb up!
mú 2SG.OPT	'mí' go.down:OPT	sùgú downward	[you (sg.)] go down!
mú 2SG.OPT	vù-m̄ go:OPT-2SG.REFL	tùm forward	[you (sg.)] go forward!
mú 2SG.OPT	háá come.back/go.back:OPT	fàárì backward	[you (sg.)] go back the same [you (sg.)] go backward!

Directional adverbs are also commonly used with the defective verbal copula **tògó** ‘be’ (7.3.3.3).

dú 3SG:INDEP	tògó-n̄ be-to.here		he/she/it is on the way here
dú 3SG:INDEP	tòg be	vòró to.there	he/she/it is on the way there

mú **háá-n** **fàári** [you (sg.)] come back here!
 2SG.OPT come.back/go.back:OPT-to.here backward

mú **tè'** **vòró** **tùm** [you (sg.)] go on ahead!
 2SG.OPT walk:OPT to.there forward

8.1.2 TAM adverbs

A number of TAM (tense/aspect/mode) adverbs are found in Mambay. These constitute a small (less than forty items in the data) but apparently open morphological subclass. Most are monosyllabic, but a few disyllabic and morphologically complex items are also attested. Usually, those which express modal information are found before the subject-verb complex (7.6.1.2, 10.1.1).

làrà **mì** **tè'** if only I had walked / I almost walked /
 if.only 1SG walk:PFV I was about to walk

sé' **mú** **té'** you must walk!
 must 2SG:OPT walk:OPT

In contrast, TAM adverbs which express temporal or aspectual information are usually found after verbs (7.6.1.2, 10.1.1).

mǐ **té'** **bé'n** first, I will walk
 1SG:IRR walk:FUT first

mì **tè'** **ǎá'** I walked (PAST)
 1SG walk:PFV PAST

TAM adverbs are discussed in greater detail in 7.6.1.2.

8.2 Ideophones

In Mambay, it is appropriate to distinguish ideophones as a morphological reality. However, this grouping is “not on a par” with other word classes in the language, which are for the most part self-contained and which exhibit an essentially uniform syntactic distribution (cf. Newman 2000:249, contra Cole 1955:370). Instead, it is an open “super-class” (cf. Welmers 1973:462, Ameka 2001:26, Elders 2001:97) whose members are spread among four word classes: adverbs, adjectives, nouns, and verbs. While ideophones dominate the classes of adverbs and adjectives, they are only moderately attested among nouns and verbs.

The present study grapples with the morphological classification of ideophones in Mambay and provides a description of their structure. This focus, coupled with the richness of the topic in general, has precluded a satisfactory treatment of related topics such as the semantics of ideophones, the relationship of structural features to perceived

realities, and the role of ideophones in discourse. However, a couple of general comments are in order.

Ideophones, sometimes referred to as phonaesthemes (Dimmendaal 2000:183), distinguish themselves from other morphemes and words primarily in the way that they refer and mean. They transcend the arbitrary sound-symbol relationship characteristic of most lexical items and enrich discourse by dramatizing salient real-world phenomena as they are perceived by users of the language (Voeltz and Kilian-Hatz 2001:3): they are “descriptive of sound, colour, smell, manner, appearance, state, action or intensity...vivid vocal images or representations of visual, auditory and other sensory or mental experiences” (Cole 1955:370).

In Mambay, the distinctive structure of ideophones, which often deviates from canonical structural characteristics of the classes in which they are found (cf. Welmers 1973:462, Elders 2001:98–100), is generated by these perceptions. As the later sections of the chapter demonstrate, structural repetition is perhaps the most salient feature to result, and is an important component of morphological structure as well as derivational processes. Also, ideophones make significant use of intonation, more so than other words (4.4.1; cf. Newman 2000:242).

At the level of discourse, ideophones are a basic means of establishing the importance of an entity or an action. Anonby (2005:15) points out that in Mambay, the simple presence of an ideophone highlights an element within a discourse; conversely, only important elements are accompanied by ideophones (this is evident in all of the longer texts found at the end of this study). This tendency is especially evident in the climax of stories, where each verb is characteristically accompanied by an ideophone (p. 16). In addition to its presence, the way in which an ideophone is presented is an important means of marking emphasis. In particular, this presentation allows the speaker to regulate the degree of emphasis. For example, the pitch intervals signalling tonal register raising and lowering (4.4.1) are more drastic with ideophones than with other words. Further, repetition (e.g. 8.4.2.1.2, 8.5) and lengthening of segments (e.g. 7.1.2.2, 8.5.3), which are used as a means of echoing real-world phenomena (cf. Doke 1935:118–9, Watters 2000:196), starkly underscore the discourse elements to which the ideophones affected by these processes relate.

In the present section, methodological issues relating to the description of ideophones are addressed in further detail. The remainder of the chapter is then devoted to the structural description of ideophonic adverbs (8.3), adjectives (which appear to be inherently ideophonic; see 8.4) and a description of derivational issues pertinent to ideophones (8.5). Ideophonic nouns and verbs are treated elsewhere (5.11 and 7.1.2.2), but the principles presented in this section are applicable for these morphological subclasses.

Methodological issues

Rather than attempting an exhaustive analysis of ideophones in Mambay, the present chapter provides a basic descriptive framework for an intricate but indistinctly structured

area of the language. The study of ideophones in Mambay is problematic, and several methodological comments are in order.

First of all, ideophones are difficult to elicit (cf. Welmers 1973:461). Initially, the researcher encounters the perception among speakers of a language that since ideophones are poorly represented in the written languages with which they are familiar, they are irrelevant as linguistic data. Once this idea has been countered, a deeper issue remains: the relationship of ideophones to larger texts. A basic function of ideophones is to enrich texts, and ideophones are inseparable from these texts (Voeltz and Kilian-Hatz 2001:3). Whereas an inevitably small inventory of ideophones based on an French or English wordlist might suggest that they are peripheral to the language, an examination of natural speech, including texts such as those found at the end of this study, shows that they are integral to both the structure and the flavour of discourse (as mentioned in 8.2 above).

Secondly, unlike other morphological classes, usage of ideophones varies considerably from one person to another, and outside the context of discourse, speakers of the language are often unable to determine the meaning of ideophones used by people from other clans or villages (cf. Childs 2001:67–70). In the ideophonic lexicon, both the words used as well as the meanings of these words are variable among speakers. And even where people concur on the form and meaning of a given ideophone, they may differ regarding its admissibility in the various host word classes (adverb, adjective, noun and verb; see especially 8.5.6). Numerous speakers of Mambay have been involved in this study of ideophones; however, in order to cope with the complexity of the information, this chapter relies on data gathered from the researcher's primary language assistant.

Thirdly, it is difficult to draw a line between those words in a given class which are ideophonic and those which are not (Welmers 1973:460). Transparent sound symbolism and, secondarily, non-canonical structures provide a basis for deciding what is ideophonic. In the present analysis, such words are used as structural templates for the comparison of words whose ideophonic qualities are more difficult to establish.

The following example serves as a case in point. As stated above, ideophones dominate the word classes of adverb and adjective (cf. 8.2, introductory discussion). However, except in the case of directional adverbs (and to some degree, TAM adverbs), it is difficult to identify any adverbs or adjectives which are *not* ideophonic. Quantifiers (adverbial or adjectival) such as the following might be expected to distinguish themselves formally from ideophonic qualifiers:

bî'	a bit, slowly, almost
byâ'ŋ	halfway (measured horizontally)
gáb	halfway (measured vertically)
lô'w	very, much
tédé	completely, all, whole, together

However, in the language these quantifiers exhibit the non-canonical characteristics of ideophones outlined in the discussion above (e.g., non-canonical structure, repetition and repeatability, and highly variable intonation).

It is clear that ideophones present some fundamental challenges to morphological classification. In the following sections, ideophones whose identity is unambiguous (based on syntactic limitations) provide a structural framework for the consideration of a given class. However, morphological ambivalence is an important feature of ideophones in Mambay, and flexibility in class membership is revisited in (8.5.6) below.

8.3 Ideophonic adverbs

The first word class in which ideophones are well-represented is that of adverbs. In contrast to adjectives, which are almost completely represented by ideophones, ideophonic adverbs are one of several major categories of adverbs (8.1). Ideophonic adverbs distinguish themselves from other types of adverbs and other types of ideophones both in distribution (8.3.1) and morphological structure (8.3.2) (see also 8.4.1 for differences).

8.3.1 Distribution of ideophonic adverbs

Ideophonic adverbs are found in post-verbal position (cf. TAM adverbs; see 7.6.1.2). Clause constituents such as objects, directional adverbs and locational complements may be interposed between a verb and the ideophonic adverb which modifies it (10.1.1).

The syntactic distribution of ideophonic adverbs is illustrated by the following text (found in its entirety at the end of this study), where these adverbs are found in their typical post-verbal position at the end of three of the five clauses which have been chained together in a story's climax.

Bò'msí hàhngí káálé gbàrgàtàg
 Bo'msi forget:PFV head:3SG.C/I.POSS.INAL IDEO

Bo'msi lost his head completely,

yáh nà-gbáhngú ríí fíít fíít
 take:PFV PFX-cultivated.hibiscus.sp clean.out:PFV IDEO IDEO

took the rich hibiscus-leaf sauce, cleaned it all out with his fingers,

yáh nâ' gôm síg sùgú kpíh.
 take:PFV sauce:LF vine.sp place:PFV down IDEO

then took the bitter vine-leaf sauce and put it down with a clunk.

Syntactic differences between ideophonic adverbs and adjectives, which are structurally similar, are discussed in 8.4.1.

Probably all ideophonic adverbs are subject to semantic restrictions on the inventory of verbs with which they may be used. In fact, some may be only used with a single verb from the lexicon (7.7.5). This is the case for the following examples:

gbǎh-nà catch:VN-OBJ	gbìrìz IDEO	startling something
tígrò fall:VN	váhb IDEO	falling unconscious
vbítì-ná unroll(shutters):VN-OBJ	vbìt IDEO	unrolling shutters with a snap

8.3.2 Ideophonic adverb structure

In the following sections, the structure of ideophonic adverbs is described in terms of allowable CV shapes (8.3.2.1) and tone melodies (8.3.2.2); morphologically simple stems and morphologically complex stems are each discussed in turn.

8.3.2.1 Allowable CV shapes

As with adjectives, many CV shapes are attested among ideophonic adverbs. These shapes may be divided into those which are morphologically simple (8.3.2.1.1) and those which are complex (8.3.2.1.2).

8.3.2.1.1 Morphologically simple stems

A wide range of shapes are found among morphologically simple ideophonic adverbs. Like nouns, ideophonic adverbs are minimally comprised of a single heavy syllable (cf. 2.4.3). In the list below, attested shapes are given along with examples.

stem shape	example	
CVV	sèè	quietly, slowly
CVC	kpúz	late, far away
CCVC	byâ'ŋ	halfway (horizontally)
CVVC	fjít	(sound of wiping with fingers)
CV.CV	hári	quickly
CV.CVC	gbìrìz	frighteningly
CVV.CV	dájáru	craning one's neck and looking around
CVV.CVC	kàhràz	with heavy eyes
CVC.CV	kpángú	early
CVC.CVC	gbàntàŋ	spread out
CVC.CV.CVC	gbàrgàtàŋ	completely

8.3.2.1.2 Morphologically complex stems

A few ideophonic adverbs are complex in that they do not occur without being reduplicated. Although they exhibit a typical adjectival structure, a handful of such cases

have been found among adverbs which cannot be used adjectivally. All five attested examples are given here along with their CV patterns:

stem shape	example	
CVV+CVV	sà'-sà'	in many clumps
CVC+CVC	pád-pád	rapidly
	sà'w-sà'w	a bit, slowly
	zàhw-zàhw	hastily
CV.CV+CV.CV	tégú-tègù	with head and chin sticking out

The final word here, **tégú-tègù**, is also treated as morphologically complex because only the first half of the word is copied when it undergoes a plural derivation (8.5.1).

Other morphologically complex ideophonic adverbs formed by productive derivations are discussed in detail in (8.5).

8.3.2.2 Allowable tone melodies

Ideophonic adverbs have been attested with five different tone melodies: H, L, HL, LH and HLH. In the lists below, each tone melody is given along with the CV shapes with which it is found in the data. First, morphologically simple stems are described (8.3.2.2.1); this is followed by a comment on tone associated with morphologically complex stems (8.3.2.2.2).

8.3.2.2.1 Morphologically simple stems

H-toned morphologically simple stems include the following:

CVV	kpìh	with a clunk
CVC	'wáb	irreversibly
CV.CV	kpírá	covering with arms or wings
CVV.CV	dáájú	craning one's neck and looking around
CVC.CV	kpángú	early

L-toned morphologically simple stems include the following:

CVV	sèè	quietly, slowly
CVC	vbit	with a snap
CV.CVC	gbìrìz	frighteningly
CVV.CVC	kàhràz	with heavy eyes
CVC.CVC	kàgzàg	with a flop
CVC.CV.CVC	gbàrgàtàg	completely

HL is found on the following morphologically simple stems:

CVV	yáà	quickly
CCVC	byâ'ŋ	halfway (horizontally)
CV.CV	hári	quickly

LH is found on a single morphologically simple stem:

CVV	hǒh	fast-leaking
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HLH is also found on a single apparently morphologically simple stem: **yáàgú** ‘quickly.’ Since this word has a shape similar to and means the same as **yáà** ‘quickly,’ it is conceivable that it has been composite at some point in the language’s history, or reflects some historical derivation similar to those represented by vestigial noun suffixes (5.1.3.2). However, the word’s composition is now opaque.

The phonetic realization of these tone melodies conforms to the general patterns described for stems of the same shape (see 4.1.2.5).

8.3.2.2 Morphologically complex stems

Three of the five tonal melodies found on simple ideophonic adverb stems are also attested with morphologically complex stems:

H tone:	CVC+CVC	pád-pád	rapidly
L tone:	CVV+CVV	sà'-sà'	in many clumps
	CVC+CVC	zàhw-zàhw	hastily
HL tone:	CV.CV+CV.CV	tégú-tègù	with head and chin sticking out

Tonal association and phonetic realizations of tone on these stems are the same as those of the better-attested morphologically complex adjective stems of the same shape (8.4.2.3.2).

8.4 Adjectives

Adjectives play an important role as noun modifiers in noun phrases and attributive predicates (5.14.2, 10.1.3.3). Adjectives are syntactically distinct from nouns (8.4.1, 10.1.3.2, 10.1.3.3) and ideophonic adverbs (8.3), and although there is overlap in attested morphological structures, the frequency of these structures is very different among the classes.

Of the four word classes in which ideophones are found in Mambay, that of adjectives is the most inherently ideophonic (cf. 8.2). In fact, it is difficult to establish the existence of adjectives which are not ideophonic. In many Niger-Congo languages, the category of adjective is restricted to a small, closed set of basic vocabulary items (Creissels 2000:249). In Mambay, however, the category labelled as adjective contains an open set of items, and non-ideophonic core vocabulary is the exception rather than the norm. The

following items could be considered “real” adjectives, since they express core concepts and since it is hard to establish an ideophonic contribution to their phonological structure:

fyàh	free, cheap
gáà	simple, only
syáà	female

Importantly, however, there is no discernable syntactic or morphological distinction between such adjectives and those whose ideophonic nature is transparent. It is true that all the adjectives in the above list are monosyllabic; however, this selection is as likely as not a result of the fact that the ideophonic nature of monosyllabic adjectives in Mambay is harder to identify because there is little or no place for repetition, a phenomenon which is otherwise common among ideophones.

Considering the overwhelmingly ideophonic nature of the class of adjectives as a whole, and considering the structural similarity among core and peripheral members of the adjective lexicon, all adjectives are addressed together in this section.

8.4.1 Distribution of adjectives

Adjectives are used in two positions: first, in the dependent position of a noun phrase (5.14.2); and secondly, as an attributive predicate (10.1.3.3). In this section, both possibilities are compared with nouns found in an equivalent position. They are also compared with adverbs which, although they are structurally similar to adjectives, have a distinct syntactic distribution.

Adjectives are syntactically distinct from nouns, which are also used to express noun attributes. It is true that in noun phrases, it is not possible to distinguish nouns and adjectives syntactically (5.14.1, 5.14.2):

noun + adjective:	bàh rain:LF	mǐz-mǐz drizzly	drizzly rain
noun + noun:	bàh rain:LF	pàh wetness	wet rain

However, the difference between adjectives and nouns may be deduced from attributive predicate constructions: an adjective is juxtaposed with the noun it modifies (10.1.3.3), but an attributive noun is always connected to the noun it modifies with the copula **ká** (10.1.3.2):

adjective:	?à 3IMPERS	mǐz-mǐz drizzly	it is drizzly
noun:	?à 3IMPERS	ká ATTRIB	pàh it is wet wetness

The situation is comparable for adjectives and ideophonic adverbs (8.3). Although there are many structural similarities between these two classes, there are differences in syntactic distribution. As shown above and repeated in the following examples, adjectives are found in the dependent position of a noun phrase or in an attributive predicate.

dependent position: **bàh** **mǐz-mǐz** drizzly rain
rain:LF drizzly

attributive predicate: **ʔà** **mǐz-mǐz** it is drizzly
3IMPERS drizzly

Adverbs, on the other hand, modify a verb or an entire clause. They come after the verb and can only be followed by a particle (10.1.1).

yâá-rì **hàrì** **nà ?**
finish:PERF-PERF quickly QM
has he/she/it finished quickly?

Following a nominal object, adjectives as well as adverbs may be found. If the post-object item in question is an adjective which describes the object, the object displays linked noun morphology (5.2.2).

tìgín **nâ'** **lùrbùg**
drop:PFV sauce:LF sticky
he/she/it dropped the sticky sauce

However, if the item is an adverb, the object lacks this morphology since the adverb modifies the verb or clause rather than the object.

tìgín **nâ'rà** **kpǎh**
drop:PFV sauce IDEO
he/she/it dropped the sauce with a clunk

This morphology usually serves to identify the word class of the post-object word, even when the word in question is an ideophone showing flexibility between adjectival and adverbial class membership (8.5.6).

sèm **nà-pùgzí** **tédé**
avoid:PFV PFX-person:PL:LF all
he/she/it avoided all of the people

sèm nà-pùgzá tédé
 avoid:PFV PFX-person:PL completely
he/she/it avoided the people completely

However, in cases where the object noun is of a structure whose linked form is identical to its free (unmarked) form (5.2.2), the distinctiveness of the flexible ideophone as adjective vs. adverb is neutralized.

sèm sáà tédé
 avoid:PFV stone:LF all
he/she/it avoided all of the stones / the whole stone

sèm sáà tédé
 avoid:PFV stone completely
he/she/it avoided the stone(s) completely

8.4.2 Adjective structure

In the following subsections, the structure of adjectives is outlined. First, the distinction between adjective stem and morphologically complex adjective stem is examined in reference to the structural repetition which is common among adjectives (8.4.2.1). Adjectival structure is then presented in terms of allowable CV shapes (8.4.2.2) and tonal melodies (8.4.2.3).

8.4.2.1 Structural repetition

Structural repetition is a pervasive feature of adjectives in Mambay, where it has been observed only in adjectives with more than one syllable. It is evident in repetition of segments (8.4.2.1.1) as well as partial and full reduplication (8.4.2.1.2). A review of these phenomena shows that while co-occurrence patterns and partial reduplication must be considered inherent to the adjectival root, full reduplication is the result of a morphological template associated with the root (8.4.2.1.2), even when no derivation may be identified. Consequently, in the discussion on adjective structure, monomorphemic adjective stems will be considered separately from morphologically complex adjective stems.

8.4.2.1.1 Repetition of segments

Repeated segments are found in almost every adjective with more than one syllable. In the data, for example, vowels within an adjective are overwhelmingly identical.

bóró	deep, far away
kpírǐ	low
làrbàg	flat-nosed
yérkétég	round

Formally, the limitation of adjectives to a single vowel place quality is slightly less strict (since vowels in the adjective may still be unevenly subject to modifications such as length and pharyngealization). However, it is found with extreme regularity.

fàhlàm	flat
gáhlàṅ	faceted
gbòòrò	bald, bare
póhṅógóṅ	narrow

There are only a handful of exceptions to this tendency, as shown by the following items:

gàmzù	long-legged
gbùhrì	snotty
kwì'gà	bent-up
kpé'fú	shallow

In addition to a consistent vowel place quality, coda consonants within an adjective are usually identical. The overlapping of these two tendencies means that entire syllable rhymes are, more often than not, repeated. This could alternatively be viewed as variation of the onset with a constant rhyme.

dòldòl	very hot
gírgír	rigid
làṅtàng	flexible and bouncy
vbìgtìg	unsuccessful

8.4.2.1.2 Reduplication of syllables

Additionally, the composition of three-syllable adjectives in particular reveals repetition of entire syllables; this brings to mind reduplication of a greater scope than simple repetition. In most examples of three-syllable adjectives, the final two syllables are identical.

rùgùgù	slow
vbàhtátá	strong and healthy
wágágá	healthy, cool

(but cf. **kpìmsìrì** 'thick, fat')

And for typical two-syllable adjectives—including those for which a derivation (8.5) is not identifiable—it appears that full reduplication has applied, resulting in adjective stems composed of a single repeated syllable.

kpó'-kpó'	dry
lòr-lòr	shiny with baldness
pyúú-pyúú	pointed, sharp

Several derivational processes (8.5) are available to provide evidence as to whether or not such words are morphologically complex stems derived from a monosyllabic root. One derivation in particular, that of ideophonic emphasis (8.5.2), is used here to explore this question. The intensified forms of the two-syllable CVC.CVC and CVV.CVV adjectives are as follows:

kpí-kpó'	very dry
lì-lòr	very shiny with baldness
pí-pyúú	very pointed, very sharp

In these forms, only one of the two syllables is used as a source for the derivation. However, when three-syllable adjectives undergo the same derivation, all segmental information is preserved:

	base form	emphatic form ('very ...')
slow	rùgùgù	rû-rúgúgú
strong, healthy	vbàhtátá	vbû-vbáhtátá
healthy, cool	wágágá	wû-wágágá

Further specifications are needed to accurately delineate these patterns. First, the two-syllable adjective **bàbà** 'shy,' which is of an uncommon CV.CV shape, is exceptional in that its emphatic form **bû-bábá** does not pattern with the typical two-syllable adjectives above, but with other adjectives, whose segmental information is copied in its entirety. Second, the single attested four-syllable adjective **kírì-kìrì** 'spherical' does not have a derived emphatic form; this makes the determination of its morphological composition problematic. However, since adjectives and ideophonic adverbs undergo some of the same derivational processes, it is possible to argue that the derivation of an ideophonic adverb of the same shape (see 8.5.4.2 in particular) provides evidence for a morphological complexity similar to that of typical two-syllable adjectives.

tégú-tègù	with head and chin sticking out
tégú tègù tégú	back and forth, with head and chin sticking out

In sum, the data presented here suggest that typical two-syllable adjective stems with identical reduplicated syllables (CVC.CVC and CVV.CVV) are morphologically complex. In contrast, other stems in which the last two syllables are identical appear to be morphologically simple stems whose repetition is a function of their ideophonic identity rather than a morphological process.

8.4.2.2 Allowable CV shapes

Based on the principles outlined in section (8.4.2.1.2) above, allowable shapes for adjectives are divided into those that consist of morphologically simple stems (8.4.2.2.1), and those that occur as morphologically complex stems (8.4.2.2.2).

8.4.2.2.1 Morphologically simple stems

The following shapes have been attested among adjectives found as morphologically simple stems:

stem shape	example	
CVV	gáà	simple, only
CVC	yôm	enough
CCVV	syáà	female
CCVC	vyǎhɛ	distant, isolated
CVVC	fááw	light (weight)
CV.CV	vébé	short
CV.CVC	gùlùg	hollow
CCV.CVC	swáráɲ	straight
CVV.CV	gbòòrò	bald, bare
CVC.CV	kpùgrù	medium-sized and thick (tuber)
CVV.CVC	kpòhròm	blunt
CVC.CVC	lùrbùg	shiny with baldness
CV.CV.CV	dòròrò	pitiable, appalling
CCV.CV.CV	gyòròrò	teary
CVC.CV.CV	lèmtéré	flat
CVC.CV.CVC	yérkétéɲ	round
CVC.CVC.CVC	póhɛgòhɛgòhɛ	narrow

8.4.2.2.2 Morphologically complex stems

Adjectives consisting of morphologically complex stems are frequent, but only the following shapes have been attested: C(C)VV+C(C)VV, C(C)VC+C(C)VC and CV.CV+CV.CV.

stem shape	example	
C(C)VV+C(C)VV	kpó'-kpó' pyúú-pyúú	dry pointed, sharp
C(C)VC+C(C)VC	bíl-bíl ryáɲ-ryáɲ	filthy long, straight and thin
CV.CV+CV.CV	gòrò-gòrò kírì-kírì	loose spherical

Morphologically complex adjectives which share the same shapes, but which are derived from monosyllabic ideophonic adverbs, are discussed in (8.5.4.2.2, 8.5.5).

8.4.2.3 Allowable tone melodies

Adjectives are found with four different tone melodies: H, L, HL and LH. In the lists below, adjectives associated with each tone melody are given along with each attested stem shape. First, morphologically simple stems are described (8.4.2.3.1); this is followed by a discussion of tone associated with morphologically complex adjective stems (8.4.2.3.2).

8.4.2.3.1 Morphologically simple stems

H-toned morphologically simple stems include the following:

CVV	gbí'	unconscious
CVC	pít	adulterous, promiscuous
CV.CV	ḃóró	deep, very far away
CV.CVC	ḃélén	intelligent
CCV.CVC	swárán	straight
CVC.CV	vbérgé	runt-like
CVV.CVC	béhlég	small
CVC.CVC	ḃúndún	dwarf, withered
CV.CV.CV	gúrúru	deep
CVC.CV.CVC	yérkétén	round
CVC.CVC.CVC	póhngóngón	narrow

L-toned morphologically simple stems include the following:

CVV	bàà	hard
CVC	kpàŋ	different
CCVV	rwà'	abundant, cheap
CV.CVC	gùlùg	hollow
CVV.CV	gbòòrò	bald, bare
CVC.CV	kpùgrù	medium-sized and thick (tuber)
CVV.CVC	?ìhrìz	right beside
CVC.CVC	lùrbùg	sticky
CV.CV.CV	dòròrò	pitiable, appalling
CVC.CV.CV	lèmtèrè	flat
CVC.CV.CVC	kùŋkùrùŋ	hunched

HL is found on the following morphologically simple stems:

CVV	gáà	simple, only
CVC	gbîm	short
CVVC	fááw	light (weight)
CVV.CVC	gáhlàn	facet-eyed

LH is found on the following morphologically simple stems:

CVV	bǒ'	ugly
CVC	kpǎŋ	salty
CCVC	vyǎhŋ	distant, isolated
CV.CV	'màyá	fast
CVV.CV.CV	vbàhtátá	strong and healthy

Tonal associations on these morphologically simple adjective stems are for the most part the same as those found with words from other classes having the same stem shape (see 4.1.2.5). However, on the single three-syllable LH stem in the data (**vbàhtátá** ‘strong and healthy’), the tone does not map as L.L.H (as would other words of the same shape; see 4.1.2.2) but rather as L.H.H. This could be viewed as a violation of standard (i.e. noun-like) tonal mapping patterns, nonetheless available to ideophones; alternatively (and in contradiction to the evidence presented in 8.4.2.1.2 above) this tonal mapping could be regarded as the product of a tonal reduplication that accompanies a partial segmental reduplication found in this word.

8.4.2.3.2 Morphologically complex stems

All four tonal melodies found on simple adjective stems (H, L, HL and LH) are also attested with morphologically complex stems:

H tone:	CVV+CVV	kpó'-kpó'	dry
	CVC+CVC	gír-gír	rigid
	CCVV+CCVV	pyúú-pyúú	pointed, sharp
	CCVC+CCVC	ryáŋ-ryáŋ	long, straight and thin
L tone:	CVV+CVV	gàà-gàà	equal
	CVC+CVC	ɗàg-ɗàg	flat
	CV.CV+CV.CV	gòrò-gòrò	loose
HL tone:	CVV+CVV	póó-pòò	wailing
	CV.CV+CV.CV	kírí-kìrì	spherical
LH tone:	CVC+CVC	kǎy-kǎy	restless

H and L melodies associate straightforwardly. For complex adjectives with HL tone, there is a single contour; each of the two reduplicated parts bears its own tonal unit (H on the first and L on the second). In contrast, for complex adjectives with LH tone, each of the two reduplicated parts bears a LH melody.

8.5 Ideophonic derivation

Although productive ideophonic derivation is uncommon (cf. Welmers 1973:461–2), a number of derivational possibilities are available to ideophones in Mambay. Class-preserving derivations include a plural derivation (8.5.1) as well as two emphatic

source morpheme		derived ideophone
$C_1VX\dots$	\rightarrow	$C_1\hat{u}+C_1VX\dots$

The process is illustrated below with both adjectives and adverbs, and simple stems are treated separately from complex stems.

8.5.1.1 Ideophonic adverbs

Ideophonic adverbs, including simple stems and complex stems, are derived with this template.

Simple stems:	source ideophone	plural ideophone
---------------	------------------	------------------

quietly, slowly	sèè	sî-sée
quietly, slowly	sà'm	sî-sá'm
with heavy eyes	kà'wrì	kî-ká'wrì
rife with	tùglùg	tî-túglúg

Complex stems:

in many clumps	sà'-sà'	sî-sá'
rapidly	pád-pád	pî-pád
with head and chin sticking out	tégú-tègù	tî-tégú

8.5.1.2 Adjectives

Adjectives are derived in exactly the same way.

Simple stems:	source ideophone	plural ideophone
---------------	------------------	------------------

intense (red)	kèè	kî-kée
open	vòŋ	vî-vóŋ
light, agile	fáyáŋ	fî-fáyáŋ
runt-like	vbérgé	vbî-vbérgé
small	béhlég	bî-béhlég
thick	kpìgzim	kpî-kpìgzim
slow	rùgùgù	rî-rúgùgù

Complex stems:

equal	gàà-gàà	gî-gáá
filthy	bìl-bìl	bî-bíl

8.5.2 Emphatic template

As with plural derivation, emphatic derivation may be applied to ideophonic adverbs, adjectives, and words of the same class likewise result. Mambay speakers are unclear concerning the exact purpose of this process, but have suggested that it gives additional emphasis to an ideophone (cf. 8.2).

The morphological template for emphatic derivation copies the initial consonant and the first tonal value of the source morpheme, appends the vowel **i** as a host for this tone, and prefixes this information to the source morpheme:

Source morpheme	Derived ideophone
$C_1V_{(\alpha \text{ tone})}X\dots$	$\rightarrow C_1i_{(\alpha \text{ tone})}+C_1V_{(\alpha \text{ tone})}X\dots$

This process is illustrated below with both ideophonic adverbs (8.5.2.1) and adjectives (8.5.2.2), and simple stems are treated separately from complex stems.

8.5.2.1 Ideophonic adverbs

Ideophonic adverbs, including simple stems and complex stems, are derived with this template.

Simple stems:	source ideophone	emphatic ideophone
quietly, slowly	sèè	sì-sèè
all	fét	fí-fét
quickly	hàri	hí-hàri
all	pádág	pí-pádág
rife with	tùglùg	tì-tùglùg

Complex stems:

in many clumps	sà'-sà'	sì-sà'
rapidly	pád-pád	pí-pád

8.5.2.2 Adjectives

Adjectives are derived in exactly the same way.

Simple stems:	source ideophone	emphatic ideophone
open	vòŋ	vì-vòŋ
light (weight)	fááw	fí-fááw
light, agile	fáyán	fí-fáyán
like a runt	vbérgé	vbí-vbérgé
small	béhlég	bí-béhlég

source morpheme derived ideophone

$C_1V_1X_1\dots \rightarrow C_1V_1X_1\dots + C_1V_1X_1\dots (+C_1V_1X_1\dots)$

An example derivation is:

sèè ‘quietly, slowly’ → **sèè sèè** ‘very quietly, slowly and repeatedly’
or: **sèè sèè sèè** ‘very quietly, slowly and repeatedly, on and on’
or: (etc.)

Although the morphological template for invariable repetition is structurally comparable to the template that derives two-syllable adjectives from monosyllabic ideophonic adverbs (8.5.5), including the way in which tones are mapped, it differs in that its input may be adjectival or adverbial (not uniquely adverbial), and its output is always adverbial (rather than adjectival).

The derivational process of invariable repetition is illustrated here with ideophonic adverbs (8.5.4.1.1), adjectives (8.5.4.1.2) and numerals (8.5.4.1.2).

8.5.4.1.1 Ideophonic adverbs

Examples of invariable repetition applied to ideophonic adverbs are as follows:

bî'	a bit
bî' bî'	a little bit
sà'	a bit
sà' sà'	a little bit
gbàhŋ	always, forever, a lot
gbàhŋ gbàhŋ	always, for ever and ever, a whole lot
fíít	wiping with fingers
fíít fíít	wiping repeatedly with fingers
hàrí	quickly
hàrí hàrí	very quickly
yáàgú	quickly
yáàgú yáàgú	early, very quickly
pádág	completely
pádág pádág	absolutely completely
kà'wrì	with heavy eyes
kà'wrì kà'wrì	with very heavy eyes

gbàṅtàn	spreading out
gbàṅtàn gbàṅtàn	spreading out everywhere

8.5.4.1.2 Adjectives

Examples of invariable repetition applied to adjectives are as follows:

ḃàḃà	timid
ḃàḃà ḃàḃà	very timidly
tù'ṅà	jelly-like, fully of liquid
tù'ṅà tù'ṅà	moving around like jelly
béhlég	small
béhlég béhlég	very little
ḃìl-ḃìl	filthy
ḃìl-ḃìl ḃìl-ḃìl	very filthily
làṅtàn	flexible and bouncy
làṅtàn làṅtàn	very flexibly and bouncily
rùgùgù	slow
rùgùgù rùgùgù	very slowly
vbàhtátá	strong and healthy
vbàhtátá vbàhtátá	very strongly and solidly

8.5.4.1.3 Numerals

The data contain a few examples of numerals which are derived by invariable repetition into an ideophonic adverb with distributive meaning (cf. 9.1.1.2):

bóm	one
bóm bóm	one by one, here and there
zódôm	ten (numeral or adverb)
zódôm zódôm	ten by ten

8.5.4.1.4 Multiple application of invariable repetition

For the following ideophones, invariable repetition may be applied more than once:

sèè	quietly, slowly
sèè sèè sèè	very quietly, slowly and repeatedly, on and on

tùglùg in large quantity
tùglùg tùglùg tùglùg in enormous quantity

8.5.4.2 Repetition with tonal alternation

An additional template exhibits repetition with tonal alternation. This template first doubles the segmental information of the root morpheme. Regardless of the tone of the source morpheme, the first morpheme of the derived ideophone is H, and the second is L. This resulting stem may itself be copied—seemingly without limit—when textual emphasis warrants it. Automatic downstep, which applies almost everywhere else in the language (4.3.2), is suspended within this environment (cf. 4.3.2.4). The template then adds a single root morpheme to the end bearing a H tone (which is, like almost all other H tones in the language following a L tone, automatically downstepped). The entire derivational process may be symbolized as follows:

source morpheme	derived ideophone
$C_1V_1X_1\dots$	$\rightarrow (C_1\acute{V}_1X_1 + C_1\grave{V}_1X_1)_1^n + C_1\acute{V}_1X_1$

Example derivation:

kǎy ‘restlessly’	\rightarrow kǎy kǎy [‘] kǎy	‘restlessly and repeatedly’
	or: kǎy kǎy [no ‘] kǎy kǎy [‘] kǎy	‘restlessly and repeatedly, on and on’
	or: (etc.)	

This process is illustrated below with both ideophonic adverbs (8.5.4.2.1) and adjectives (8.5.4.2.2).

8.5.4.2.1 Ideophonic adverbs

Examples of repetition with tonal alternation applied to ideophonic adverbs are as follows:

zàhw-zàhw	hastily
záhw zàhw záhw	hastily and repeatedly
pád-pád	rapidly
pád pàd pád	rapidly and repeatedly
tégú-tègù	with head and chin sticking out
tégú tègù tégú	back and forth, with head and chin sticking out

The ideophonic adverb **vbúm vbùm vbúm**, which describes the inherently repetitive sound made by a waterfall, is realized with repetition with tonal alternation even though it has no independent base stem.

8.5.4.2.2 Adjectives

Examples of repetition with tonal alternation applied to adjectives are as follows:

gàà-gàà	equal
gáá gàà gáá	equally and repeatedly
gír-gír	rigid
gír gír gír	rigidly and repeatedly
kpà'-kpà'	in constant motion
kpá' kpà' kpá'	in constant motion and repeatedly
ryáŋ-ryáŋ	long, straight and thin
ryáŋ ryàŋ ryáŋ	in a craning-out manner and repeatedly
vbérgé	runt-like
vbérgé vbèrgè vbérgé	lolling about like a runt or rag doll
vbà'ŋgà	like a reptile
vbá'ŋgá vbà'ŋgà vbá'ŋgá	moving like a reptile

8.5.5 Adjectival template

A moderately productive class-changing derivation changes monosyllabic ideophonic adverbs into adjectives.

The morphological template for adjective derivation reduplicates a monosyllabic ideophonic adverb. The inventory and realization of tonal melodies on derived adjectives is a subset of those associated with adjectives of the same shape (8.4.2.3.2). Examples of adjectival derivation are as follows:

gír	rigidly
gír-gír	rigid
(note irregular adverb/adjective tonal correspondence)	
kăy	restlessly
kăy-kăy	restless
kpàŋ	differently
kpàŋ-kpàŋ	different
tém	differently
tém-tém	different

A set of examples which illustrates this contrastive usage is as follows:

ʔà 3SG:IMPFV	té'là walk: VN	tém differently	he/she/it walks differently / he/she/it is walking differently
ʔà 3IMPER	tém-tém different		it is different
ʔígzi thing:PL:LF	tém-tém different		different things

8.5.6 Flexible class membership

The description of ideophones in previous sections has focussed on examples whose syntactic behaviour and morphological classification is unambiguous; however, as many ideophones are used in more than one syntactic context, a description of class membership possibilities is essential.

Specifically, a minority of ideophones may be used variously as adjectives, ideophonic adverbs and—to a lesser degree—ideophonic nouns, and are structurally identical regardless of usage. This could be viewed as pervasive zero-derivation; however, because of overlap in possible base structures, the direction of such a derivational phenomenon is in many cases indeterminate. More appropriate is a recognition of flexible class membership possibilities available to ideophones.

The following are representative examples of ideophones found in more than one word class:

ideophone	adverbial usage	adjectival usage	nominal usage
dòhlòm	—	round and thick	round, thick object
'nám	well	good	—
fyág	abundantly	abundant	—
kéhy-kéhy	restlessly	restless	restlessness
kpó'-kpó'	—	dry	dryness
lô'w	a lot, very	much, many	—
ràh	—	sad	sadness
tédé	completely	all	—
'wíh-'wíh	achily and restlessly	achy and restless	—

(In addition the structural and derivational tendencies outlined in previous sections, ideophonic adverbs have been distinguished from adjectives based on their dependence on the presence of a verb (rather than a neighbouring noun) and their relegation to post-verbal position. Adjectives have been distinguished from nouns based on the syntactic criteria outlined in 8.4.1.)

Patterns of flexible class membership deserve further investigation. A cursory observation on flexibly used ideophones in the data (which is, incidentally, borne out in the examples immediately above) reveals that while some ideophones used as adjectives share distribution with adverbs or nouns, nouns and adverbs never share distribution unless an adjective is also implicated. This supports the idea that in Mambay, adjectives are situated on a morphological continuum between ideophonic adverbs and ideophonic nouns.

In some cases, derived ideophones also show flexible word class membership. The most complete example of derivational potential is that of word **kàhm** ‘rapidly, with agility.’ In each of three separate derivations, this morpheme exhibits distributional potential as adjective, ideophonic adverb, and noun. All of the following forms and usages are possible:

derivational strategy	derived ideophone	adjectival usage	adverbial usage	nominal usage
plural (8.5.1)	kû-káhm	rapid, agile (pl.)	rapidly, with agility (pl.)	rapidity, agility (inherent plurality of action)
emphatic (8.5.2)	kì-kàhm	very rapid, very agile	very rapidly, with great agility	much rapidity, much agility
adjectival (8.5.5)	kàhm-kàhm	rapid, agile	rapidly, with agility	rapidity, agility

MINOR WORD CLASSES

In the present chapter, three minor word classes are introduced: numerals (9.1), specifiers (9.2), and prepositions (9.3).

Structurally, these three word classes resemble the major word classes of nouns (Chapter 5) and verbs (Chapter 7) as well as adverbs and adjectives (Chapter 8) in that their members are typically comprised of at least one heavy syllable or two light syllables (cf. 2.4.3); this sets them apart from particles, which are uniformly comprised of a single light syllable (2.4.3, 10.1.2). However, they diverge in that whereas nouns, verbs, adverbs and adjectives are lexically open classes, numerals, specifiers and prepositions are represented by closed lexical sets.

9.1 Numerals

In Mambay, as in other languages, numerals are words used for counting. Numerals often modify nouns, whether as a dependent element in a noun phrase or as a predicate of a verbless clause (9.1.1.1). Occasionally, they appear to function adverbially (9.1.1.2); in addition, they can fulfill mathematical operations even when there is no syntactic head in view (9.1.1.3). Basic numerals (9.1.2.1), which are used for values from one to ten, are as follows:

one	bóm
two	bàtì
three	bì-sáh
four	bì-nàh
five	bì-zápé'
six	bì-gírò
seven	tàrnágà
eight (short form)	fwàrnágà (Chadian dialect: fwàrnâh)
(long form)	wàr séhná fà-gbàhɲ bātì
nine (short form)	sêh-bóm (dialects north of the Mayo Kebbi: sê'-bóm)
(long form)	wàr séhná fà-gbàhɲ bóm
ten (short form)	zódôm
(long form)	séhná kírib

Differences in the usage and structure of long vs. short forms are discussed in 9.1.1.3 and 9.1.2.1.2.

sìì **bì-sáh** the three years
 year:LF NUM-three

sìì **bì-sáh** **?ì-náá** **pá** **kô'** **dùg-rú**
 year:LF NUM-three HEAD-here do:PFV there ruin:PFV-3SG.OBJ

the three years that happened there ruined him/her/it

cf. parallel typical count constructions

sììŕá **bì-sáh** three years
 year NUM-three

pá **kô'** **sììŕá** **bì-sáh**
 do:PFV there year NUM-three

three years happened there

Usually, as in the above examples, plurality is not marked explicitly on a noun which is modified by a numeral. However, it may be marked. This occurs more commonly with human nouns (5.5.1.3).

nà-pùgzá **bàtì** two people
 PFX-person:PL two

For non-human nouns in particular, the pluralization of a counted noun puts its plural nature into focus (5.5.1.3).

bòlzá **bàtì** two wooden clubs
 wooden.club:PL two

In addition to their use as noun modifiers in a noun phrase, numerals may appear as the predicate of a verbless clause (9.1.1.1). Thus, when the noun + numeral constructions given above stand alone, they constitute a clause:

kágà **bàtì** there are two chickens (lit. 'the chickens are
 chicken two two')

nààŕá **tàrnáàgà** there are seven clouds (lit. 'the clouds are
 cloud seven seven')

9.1.1.2 Adverbial function

Although numerals are most commonly used to modify nouns (9.1.1.1), there are a few cases in the data where they appear to be used adverbially:

hùm-ré **bì-sáh**
come:PERF-3SG.REFL NUM-three

the three of them have come (Fr. ils sont venus à trois)

sígò **hǐj** **đùù** **byàá** **nìn** **bàhàà** **bàt** **yá**
crocodile 3:NONPERF.NEG hit:VN water in.presence:LF ibis.sp. two NEG

a crocodile doesn't strike the water twice in the presence of an ibis

Regarding the second example, note that the usual way of saying “twice” (or any other multiplicative) is expressed as follows (cf. 7.6.1.2):

fàà **?éré** **bàtì** twice
back:LF 3PL.C/I.POSS two

9.1.1.3 Absolute (mathematical) function

In addition to their other functions, numbers may also be used in an absolute way. In contexts which use mathematical operations—for example, school, counting games and the calculation of money—numbers relate to one another rather than to a syntactic head.

In cases where both short and long forms are found (cf. 9.1), short forms rather than long forms are used for mathematical operations.

eight (short form)	fwàrnáàgà (Chadian dialect: fwàrnàh)
(long form)	wàr séhná fà-gbàhɛ̀ bātì
nine (short form)	séh-bóm (dialects north of the Mayo Kebbi: sé'-bóm)
(long form)	wàr séhná fà-gbàhɛ̀ bóm
ten (short form)	zódôm
(long form)	séhná kírib

Note that there appears to be a shift away from the use of the long forms by younger speakers of the language, even for modifying nouns. For the numerals ‘eight’ and ‘nine,’ this shift is partial. However, for the numeral ‘ten,’ the shift is complete: the long form is known only to older speakers of the language.

9.1.2 Numeral categories

The Mambay numeral system is decimal, i.e., numeric place holding is based on the number 10. While most basic numerals are underived (9.1.2.1.1), words used for higher numerals are derived from other parts of speech or borrowed from other languages (9.1.2.1.2–9.1.2.4).

9.1.2.1 Basic numerals: 1 to 10

Most of the basic numerals are underived (9.1.2.1.1). The remaining items have been historically derived from other constructions (9.1.2.1.2).

9.1.2.1.1 Underived basic numerals

The numerals from one to seven and the short forms of the numerals ‘eight’ and ‘ten’ are underived.

one	bóm
two	bàtì
three	bì-sáh
four	bì-nàh
five	bì-zápé’
six	bì-gírò
seven	tàrnáǵà
eight (short form)	fwàrnáǵà (Chadian dialect: fwàrnàh)
ten (short form)	zódôm

These items differ from other numerals in that they are not identifiably derived (cf. 9.1.2.1.2 and 9.1.2.2) or borrowed (9.1.2.4). They are structurally comparable to nouns, exhibiting a subset of the CV shapes (5.1.1.1) and tone melodies (5.1.1.2) found with them.

Although they are not derived from other word classes, some of these numerals exhibit morphological complexity as a result of obligatory co-occurrence with the prefix **bì-**.

three	bì-sáh
four	bì-nàh
five	bì-zápé’
six	bì-gírò

A comparison with cognates in other Kébi-Benue languages and neighbouring Chadic languages (Boyd 1989b:172) shows that this prefix is unique to Mambay. The possibility that **bì-** has originated as a numeral classifier is supported by its use elsewhere in the language as part of the interrogative count pronoun **bì-ʔán** ‘how much? / how many?’ (6.2).

bì-ʔán
NUM-how?

Three of the underived numerals (**bàtì** ‘two,’ **tàrnáǵà** ‘seven’ and **fwàrnáǵà** ‘eight’) exhibit contracted forms reminiscent of nouns subjected to a linked noun template (5.2.2). However, in contrast to the linked noun template, contraction of these numerals has no grammatical significance. Rather, it is a predictable phenomenon which applies in non phrase-final position. In each case, the final vowel is dropped and the tone melody remains stable. Example alternations are as follows:

kágà	bàt	náǵ	these two chickens
chicken	two	this	

cf. kágà	bàtì		two chickens	
chicken	two			
bì-gírò,	tàrnâg,	fwàrnágà	six, seven, eight (counting; cf. 9.1.1.3)	
six	seven	eight		
cf. bì-gírò,	tàrnágà		six, seven (counting)	
six	seven			
káálà	fwàrnâg	sóm	bóm	eighty-one
head/ten	eight	plus	one	
cf. káálà	fwàrnágà			eighty
head/ten	eight			

9.1.2.1.2 Derived basic numerals

Of the numerals from one to ten, the short form of ‘nine’ and the long forms of ‘eight,’ ‘nine’ and ‘ten’ have been derived. Of these, three of the numbers are derived from clauses, and one from a noun phrase (in another dialect, it is derived from a prepositional phrase).

The meanings of component morphemes are semantically transparent, referring to hand motions used in counting. Dialect differences in the short forms of ‘nine’ stem from use of contrasting senses of the word **syâh** (linked form: **sêh**; see 5.2.2.2.2): ‘hand’ / ‘finger.’ These derived numerals are as follows:

eight (long form), derived from a clause:

wàr **séhná** **fà-gbàhɲ** **bàtì**
 leave:PFV hand/finger:1&2SG.POSS.INAL PFX-outside two

lit. *he/she/it left our fingers outside [the hand] twice / there remain our fingers outside [the hand] twice*

nine (short form, dialects south of the Mayo Kebbi), derived from a noun phrase:

sêh-bóm
 hand/finger:LF-one

lit. *the one finger [outside the hand]*

nine (short form, dialects north of the Mayo Kebbi), derived from a prepositional phrase:

9.1.2.3 Multiples of ten

Multiples of ten from twenty to ninety are formed regularly by the addition of a multiple from two to nine to the noun **káálà** ‘head,’ which as a numeral carries the extended meaning ‘ten.’

káálà head/ten	ɓàtì two	twenty		
káálà head/ten	bì-sáh NUM-three	thirty		
káálà head/ten	bì-nàh NUM-four	forty		
káálà head/ten	wàr leave:PFV	séhná hand/finger:1&2SG.POSS.INAL	fà-gbàhɲ PFX-outside	bóm one

ninety

When a basic numeral is added to a multiple of ten from twenty to ninety, it is joined to the numeral with the preposition **má** ‘with, and.’

káálà head/ten	bì-zápé’ NUM-five	má with	bìgírò six	fifty-six
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That **káálà** ‘head, ten’ is acting as a numeral rather than a noun in count constructions is demonstrated by the non-application of linked noun morphology (cf. 5.2.2.2) which would be present with the head noun if **káálà** were functioning as a noun (see discussion at beginning of 9.1).

kágà chicken	káálà head/ten	ɓàtì two	twenty chickens
cf. kág chicken:LF	káálà head/ten	ɓàtì two	two-headed chicken / hundred-franc chicken (see 9.1.4)

káálà ‘head, ten’ may be used with the preposition **má** ‘with, and’ (9.3) after a numeral to communicate the idea of ‘a few more tens.’

gàmbù bag/thousand	má with	káálà head/ten	a thousand, and a few more tens
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Along with **káálà ɓàtì**, two other terms for the numeral twenty have been attested among older Mambay speakers. Unlike **káálà**, they are not used as a base for numerals higher than twenty. The terms are:

If George Orwell's novel *1984* were translated into Mambay, it would be advantageous to write the title using digits rather than orthographic words.

Exactness in counting with a higher numeral is achieved when a lower numeral modifies it.

gàmbù	bóm	one thousand
thousand	one	
gàmbù	má bóm	one thousand and one
thousand	with one	
cf. gàmbù		a thousand
thousand		

9.1.2.5 Proportions

In Mambay, fractions are used to express approximate numeric proportions, and comparison of whole numerals expresses exact proportions.

The following fractions expressing approximate proportions of nouns have been attested:

dágà	bóm	a bit, a part
mouth/edge	one	
fin	bóm	a side, a half
toward	one	
vbá'là	bóm	a part, a section
chunk	one	

These fractions accompany whole numerals, to which they are joined using the preposition **má** 'with, and.'

tàrnágà	má fin	bóm	seven and a half
seven	with toward	one	

The borrowed fraction **réétà** (cf. Fulfulde *reeta*) is sometimes used to express the idea of 'half' more exactly. Eguchi (1971:165) also gives the term **réétì réétà** (lit' 'half of half') for the concept of 'one quarter'; however, this term has not been accepted by Mambay speakers in the context of the present research.

Two adverbs are also used to express fractional proportion:

gáb	halfway (measured vertically)
byá'ŋ	halfway (measured horizontally)

ex. **mì tè' byâ'ŋ** I walked halfway
 1SG walk-PFV halfway.horizontally

Exact proportions are expressed using whole numerals; comparison is made using the terms **sàà** ‘inside’ or **sígzò** ‘middle’ (linked form: **sígzi**; cf. 5.2.2)

káálà **bì-gíró** **sàà** **tèémééré** sixty in one hundred / sixty per cent
 head/ten NUM-six inside hundred

bì-sáh **sígzi** **bì-zápé'** three of five
 NUM-three middle:LF five

ex. **nà-kààrà** **bì-sáh** **sàà** **zódôm** **sóm bàtì** three of the twelve disciples
 PFX-disciple NUM-three inside ten plus two

9.1.3 Ordinal nouns

Ordinal nouns are, prototypically, nominalized numerals (9.1.2) which express the place of a noun within a series. In Mambay, most ordinal nouns are formed by adding the ordinal suffix **-rì** to a numeral. Ordinal nouns range from ‘first’ to ‘tenth’ and also include the word ‘last.’ They are given here, alongside the numerals to which they correspond (when relevant):

digit	numeral	ordinal noun	gloss of ordinal noun
1	(bóm)	dâg tômná	first
2	bàtì	baári	second
3	bì-sáh	bì-sáhrì	third
4	bì-nàh	bì-nàhrì	fourth
5	bì-zápé'	bì-zápé'rì	fifth
6	bì-gíró	bì-gírrì	sixth
7	tàrnágà	tàrnággì	seventh
8	fwàrnágà / fwàrnâh	fwàrnággì / fwàrnáhrì	eighth (short form)
	wàr séhná fâ-gbàhŋ bàtì	wàr séhná fâ-gbàhŋ baári	eighth (long form)
9	sêh-bóm / sê'-bóm	sêh-bómrì / sê'-bómrì	ninth (short form)
	wàr séhná fâ-gbàhŋ bóm	wàr séhná fâ-gbàhŋ bómrì	ninth (long form)
10	zódôm	zódómrì	tenth
—	—	fàarì	last

Some Mambay speakers do not use the form **zódómrì** ‘tenth.’ Where two forms are given on the same line in the list above (e.g., **fwàrnágà / fwàrnâh**), this reflects a dialect difference (1.2.3.3).

Except for **dâg tômná** ‘first’ (9.1.3.1), ordinal nouns are found in head (initial) position in the noun phrases in which they are found (cf. 5.2, 5.14).

ḃáárì	kágà	the second chicken
two:ORD:LF	chicken	
bì-sáhrì	kágà	the third chicken
NUM-three:ORD:LF	chicken	
cf. kâg	dâg tômná	the first chicken
chicken:LF	first	

Even though they are nouns, ordinal nouns are never pluralized (cf. 5.5.1.2).

When an ordinal noun is derived using the ordinal suffix **-rì**, the tone melody of the numeral and the suffix are fused:

bì-sáh	+	-rì	→	bì-sáhrì	third
NUM-three		ORD			
bì-gírò	+	-rì	→	bì-gúurì	sixth
NUM-six		ORD			

The tonally idiosyncratic ordinal noun ‘second’ constitutes an exception to this pattern.

ḃàtì	+	-rì	→	ḃáárì	second
two		ORD			

Irregularities associated with the ordinal nouns ‘first’ and ‘last’ are discussed in 9.1.3.1, and segmental alternations are examined in 9.1.3.2. Ordinal values for numerals beyond ten are presented in 9.1.3.3.

9.1.3.1 ‘First’ and ‘last’

The ordinal nouns for ‘first’ and ‘last’ differ from other members of the series.

The ordinal noun **dâg tômná** ‘first’ is a compound noun made up of the nouns **dágà** ‘mouth, edge’ and the word **tômná**, which is used only in this context. It differs from other ordinal nouns in that it is not derived from its corresponding numeral (in this case, **bóm** ‘one’). Additionally, it differs in that it is typically found in a dependent rather than head position (cf. 5.2).

kâg	dâg tômná	the first chicken
chicken:LF	first	
cf. ḃáárì	kágà	the second chicken
two:ORD:LF	chicken	

The ordinal noun **fàárì** ‘last’ differs from the other ordinal nouns in that there is no specific numeral to which it corresponds. In contrast, it is probably derived from the noun **fààlá** ‘back, skin, place’ (linked form: **fàà**; see 5.2.2). However, its membership in the ordinal noun series is underlined by the fact that it contains the ordinal suffix **-rì**.

9.1.3.2 Segmental alternations

In four cases, the derivation of numerals with the ordinal prefix suffix **-rì** results in morphophonological alternation. For two of the numerals (**bàtì** ‘two’ and **bì-gírò** ‘six’), this derivation is multi-faceted and may be represented as follows:

		bàtì ‘two’	bì-gírò
‘six’			
1) the vowel of the final syllable of the numeral is dropped;		bàt + rì	bì-gír + rì
2) the alveolar- r sequence is disallowed;		bà + rì	bì-gí + rì
3) the final vowel of the numeral root is lengthened to compensate for this loss.		báá + rì	bì-gíí + rì

The resulting tone melody on **báárì** ‘second’ is idiosyncratic; see 9.1.3.

In the other two cases (**tàrnágà** ‘seven’ and **fwàrnágà** ‘eight’), the final vowel of the numeral is dropped and the **r** in the suffix **-rì** assimilates to the numeral’s final **g**.

tàrnágà	+	-rì	→	tàrnággì	seventh
seven		ORD			
fwàrnágà	+	-rì	→	fwàrnággì	eighth
eight		ORD			

9.1.3.3 Ordinal values for numerals beyond ten

It is not possible to express numerals beyond ten using an explicitly ordinal strategy. Items may be ordered, however, by a simple count. Resulting ‘ordinal’ constructions are identical to typical count constructions (9.1.1.1).

kágà	zódôm	sóm	bóm	the eleventh chicken / eleven chickens
chicken	ten	plus	one	
kágà	káálà	bàtì		the twentieth chicken / twenty chickens
chicken	head/ten	two		

9.1.4 Other nouns with numeric values

In addition to nouns used as numerals (9.1.2) and nouns derived from numerals (9.1.3), there are a few nouns which, even when used as nouns, refer to a certain quantity of an item.

word	basic meaning	numeric value
dàlà (Fulf. borr.)	a sum of money	five francs
dù'ló	enclosure	a hundred domestic animals in an enclosure
gàmbù (Fulf. borr.)	bag	a thousand francs (see 9.1.2.4)
hâh	stick	a hundred cows
súúlò	herd	a hundred (any animal)

If these nouns are modified by a numeral, their numeric value is interpreted as exact.

hâh	bóm	one hundred cows
stick	one	
cf. hâh		a hundred cows
stick		
gàmbù	tàrnágà	seven thousand
bag/thousand	seven	
cf. gàmbù		a thousand
bag/thousand		

9.2 Specifiers

In Mambay, there is a small class of specifiers. Three demonstratives and an indefinite article make up this class. Members of this class are used to situate participants within a discourse, and have in common a restricted distribution: they are only found at the very end of a noun phrase (5.14) headed by a linked (5.2.2) noun.

kâg	nájá	this chicken		
chicken:LF	this			
kâg	ɓiltɪŋ	bàt	nájá	these two dirty chickens
chicken:LF	dirty	two	this	

More precisely, specifiers are represented by two proximity demonstratives (9.2.1), one long-distance anaphoric demonstrative (9.2.2), and an indefinite article (9.2.3). The long-distance anaphoric demonstrative may be used with either of the proximity demonstratives (9.2.2), but other combinations are not permitted.

9.2.1 Proximity demonstratives

Two demonstratives are, in addition to their specifying function, used to signal the degree of an item's proximity to a reference point (prototypically, the reference point is the location of the speaker). Examples of the use of the proximal demonstrative **náá** 'this' and the distal demonstrative **núú** 'that' are as follows:

proximal demonstrative:	kâg chicken:LF	náá this	this chicken [here]
	kágzì chicken:PL:LF	náá this	these chickens [here]
distal demonstrative:	kâg chicken:LF	núú that	that chicken [there]
	kágzì chicken:PL:LF	núú that	those chickens [there]

With the third person singular independent pronoun **đú** (6.1.2.1), the morphemes indicating these demonstrative values exhibit irregular forms.

dáṅgáá 3SG.INDEP:this	he/she (this person [here])
dúṅgúú 3SG.INDEP:that	he/she (that person [there])

cf. the third person plural independent pronoun:

dùṅzì 3PL.INDEP	náá this	they (these people [here])
dùṅzì 3PL.INDEP	núú that	they (those people [there])

9.2.2 The anaphoric demonstrative **đô'**

A third type of demonstrative, represented by **đô'** 'that/those (anaphoric),' is used to make long-distance (i.e., in separate sentences) anaphoric references to a previously-mentioned participant in a discourse (Anonby 2005:37).

kâg chicken:LF	đô' that.ANAPH	that chicken (that was mentioned previously)
kágzì chicken:PL:LF	đô' that.ANAPH	those chickens (that were mentioned previously)

Like other specifiers, the anaphoric demonstrative **dô'** cannot be used without an explicit head noun; the participant to which it refers must be repeated along with it. The following text demonstrates its usage in two instances:

ɗáá páà vérgì bîn, tògó, lóò-lé,
found:PFV man:LF travel:LF certain be get.tired:PERF-3SG.REFL

yáà-lé sùgú.
sit:PERF-3SG.REFL down

There was found a certain traveller, he is there, he has gotten tired, he has sat down.

ɓáŋ ʔílé mǎ tí-sùú wágà.
wrap:PFV body:3SG.C/I.POSS.INAL with PFX-fabric:LF neck

He wrapped himself in a robe.

mùn tí-vínà bè lèé bǒr yèr dô'
then AUG-woman QUOT 3SG.LOG:IRR undo:FUT clothing:LF that.ANAPH

ʔín páà dô' rè.
body/at:LF man:LF that.ANAPH TOPIC

A woman then [came] saying she would take those clothes from that man...

The proximity demonstratives **nǎǎ** 'this/these' and **núú** 'that/those' may be used in conjunction with **dô'**.

kâg dô' nǎǎ that (anaph.) chicken here
chicken:LF that.ANAPH this

kágzì dô' núú those (anaph.) chickens there
chicken:PL:LF that.ANAPH that

9.2.3 The indefinite article **bîn**

In addition to its specifying function, the demonstrative **bîn** '(an)other, (a) certain' contributes an indefinite meaning to the noun it modifies.

kâg bîn another chicken / a certain chicken
chicken:LF other/certain

kágzì bîn other chickens / certain chickens
chicken:PL:LF other/certain

In discourse, **bîn** is used to introduce minor participants.

ḍáá páà vérgì bîn.
found:PFV man:LF travel:LF certain

There was found a certain traveller.

When **bîn** is used with indefinite but semantically plural referents, it is preceded by the inherently plural noun **gyàáŕì** ‘ones.’

gyàáŕì bîn vè-zì-ré vòró kúù.
ones certain go:PERF-PL-3PL.REFL to.there bushland

Certain ones had gone out to the bushland.

9.3 Prepositions

Although members of several word classes in Mambay are used for locational functions, prepositions are the only class devoted to these functions. True prepositions, which are found as heads of prepositional phrases, constitute a closed word class of only seven items. Of these, two appear to be borrowed. Mambay prepositions are, in alphabetical order:

bèè	without
háá ~ háá	until, up to, all the way to (cf. Fulfulde <i>haa</i> , Mundang <i>hàá</i>)
lá'	like, as
má	with, and, by, during
sáà	inside, in
sé' ~ séy'	except, only, not until (cf. Fulfulde <i>sey</i>)
yâg	to, for

All seven prepositions are monosyllabic. While the commonly used preposition **má** ‘with, and, by, during’ is comprised of a light syllable, the other prepositions are comprised of a heavy syllable (cf. 2.4.3).

The structure and syntactic distribution of prepositional phrases are presented in 9.3.1 and 9.3.2. The use of other word classes for locational functions is discussed in 9.3.3; there, the distribution of these classes is contrasted with that of prepositions.

9.3.1 Prepositional phrase structure

Prepositions head prepositional phrases, where they are located at the phrases’ left edge (in this regard, prepositional phrases resemble noun phrases, which are also left-headed; see 5.14). A preposition is always followed by a noun or a noun-phrase complement.

bèè túrà without millet
without millet

háá ~ hááj until	kpèègá tree	all the way to the tree
lá' like	kwéé Kwe	like Kwe
máj with	ḡḡ ʔúúrú child:LF 3SG.POSS	with his/her child
sáj inside	fíílò house	inside the house
sé' except	rógò tomorrow	not until tomorrow
yâg to/for	sí-kètí AFX-God	to God / for God

When the complement of most of the prepositions is a pronoun, it is an independent pronoun (6.1.2.1).

bèè without	dú 3SG.INDEP	without him/her
háá ~ hááj until	dú 3SG.INDEP	up to him/her
lá' like	dú 3SG.INDEP	like him/her
máj with	dú 3SG.INDEP	with him/her
sáj inside	dú 3SG.INDEP	inside him/her
sé' ~ séy' except	dú 3SG.INDEP	except him/her

Uniquely, in the case of the preposition **yâg** 'to, for,' which hosts a verb's second object, an object pronoun (6.1.3.1) is used.

yâg to/for	mí 1SG.OBJ	to me / for me
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yâg-rú to him/her / for him/her
to/for-3SG.OBJ

This distribution sets prepositions apart from nouns, which are accompanied by possessive pronouns (5.3, 6.1.4).

káání my head / on me
head/on:1SG.POSS.INAL

káàrú his/her head / on him/her
head/on:3SG.POSS.INAL

9.3.2 Prepositional phrase distribution

Prepositional phrases are typically found as verbal modifiers in post-verbal position. As the following clauses show, they contribute information on manner and/or location:

tìglé **bèè** **sûm-ní** **ʔúúrú**
fall:PERF without know:VN-OBJ:VN:LF 3SG.POSS
it has fallen without his/her knowledge

ʔà **té'là** **háá** **káàkààlá**
3:IMPFV walk:VN until Kaakaala
he/she/it walks / is walking all the way to Kaakaala

gbáh **kágà** **lá'** **mààrà**
take:PFV chicken like gift
he/she/it took a chicken as a gift

mǐ **háá-n** **má** **súmù**
1:IRR come.back:FUT-to.here with night
I will come back at night

mǐ **kóg-óm** **sé'** **rógò**
1:IRR see:FUT-2SG.OBJ except/not.until tomorrow
I will not see you until tomorrow

rò'zí **sàà** **kôhm-ní** **ʔéré** **bè ...**
say:PFV-PL inside gather.together:VN-OBJ:VN:LF 3PL.C/I.POSS QM
they said in their meeting that...

mù hí byàá yâg-rú
 2SG:OPT give:OPT water to-3SG.OBJ
give water to him/her/it

If they occur in a verbal clause with directional adverbs and/or objects, they are found after these constituents (10.1.1).

má yáh-zí gííbò vòró má b̀̀l rù'gó
 3:OPT take:OPT-PL alcoholic.drink to.there with child:PL:LF clay.water.jar
they must take alcoholic drinks down there with small clay water jars

Prepositional phrases may also be found clause-initially; information in this position locates a clause within the temporal or logical framework of a discourse (10.1.1).

má rùgà vérgà m̀̀n-z̀̀n b̀̀-�áh
 with morning traveller come:PFV-PL-to.here NUM-three
in the morning, three travellers came here

Prepositional phrases may further be used as predicates of verbless clauses (10.1.3.5).

m̀̀ má dú 1SG with 3SG.INDEP	I am with him/her/it
m̀̀ b̀̀è túrà 1SG without millet	I have no millet (lit. I am without millet)
dú s̀̀à r̀̀'rá 3SG.INDEP inside word/issue	he/she is caught up in an issue

Finally, prepositional phrases may be found as modifiers of the head noun in noun phrases (5.14.5):

tí-vín PFX:AUG-woman:LF	má káálà with head	intelligent woman
páà man:LF	b̀̀è s̀̀ùzò without hair	hairless person / person with a shaven head
k̀̀t sky/life:LF	s̀̀à byàá inside water	the underwater world

9.3.3 Use of other word classes for locational functions

Adverbial functions, including those which are locational, are not restricted to prepositions. In fact, nouns and directional adverbs are more commonly used to express

location (together with direction) than are prepositions. In addition, a number of high frequency verbs express such information.

In Mambay, there are several types of locational nouns (this is described in greater detail in 5.13). Most locational nouns pattern like prepositions in that they require a dependent element to follow when they are used locatively (otherwise, they may stand alone). For locational nouns, however, the dependent element is a possessor noun or possessive pronoun rather than a complement (9.3.1).

n̄n eye/in.presence:LF	gyâh sun	in the sun (cf. n̄n̄ȳ ‘eye, face, life’)
n̄lé eye/in.presence:3COREF/IMPERS.POSS.INAL		in his/her/its (coref.) presence / in its presence

The locational sense is an extension of the central meaning of a noun (usually a body part), and there is no structural contrast between the two senses (5.13). There are, in contrast, no non-locational nouns corresponding to true prepositions. As Hagège (1975:155–6) points out in the context of the Kébi-Benue languages, these differences are sufficient to treat locational nouns and prepositions as belonging to separate grammatical classes.

Remaining locational nouns (5.13) are not derived from corresponding non-locative nouns but fail to conform to the distributional criteria for prepositions in at least one of two ways. First, like the locational nouns above, some have discrete linked forms (5.2.2) and/or may be found with possessor nouns (5.3.2) and possessive pronouns (6.1.4) rather than complements (as shown in 9.3.1 above).

s̄gz̄ì middle:LF	káàf̄íló village	middle of the village (cf. s̄gz̄ò ‘middle’)
f̄in toward:LF	?ánzá 1&2PL.POSS	the place where we (incl.) come from
ḡâh midst:LF	?óró 2PL.POSS	your (pl.) midst

Second, a few locational nouns without a corresponding non-locative sense may be found without any following dependent element. Examples of such nouns are:

f̄à-gbàh̄ŋ	outside
k̄ă’	here (i.e., this place)
k̄ȳ’	there (i.e., that place)
làbí	left side

Locational nouns also show minor structural differences from prepositions. For one thing, a noun's minimal shape is a heavy syllable (5.1.1.1) rather than a light syllable (cf. 9.3), and may exceed one syllable (5.1.1.1). Also, attested tone melodies of prepositions are more often than not H or L, unlike the usual HL or LH melody of canonical nouns (5.1.1.2).

Like prepositions, directional adverbs (8.1.1) are also used to express locative concepts. However, they differ from prepositions in that they may not themselves take a complement (cf. 9.3.1), and in that they are always found with a verb.

mù	tè'	vòró	[you (sg.)] go there!
2SG.OPT	walk:OPT	to.there	

mù	hèè	kètí	[you (sg.)] climb up!
2SG.OPT	climb:OPT	upward	

Finally, a number of high frequency verbs express locational information.

hèè	climb (i.e., go up)
lúg	go out
'mì'	go down
rì'	enter (i.e., go in)
?èr	get up, go from

In particular, the verb **?èr** 'get up, go from' expresses a concept which in many other languages is expressed by a preposition meaning 'from.'

?èr	káàkààlá	vè	dág	byàá
get.up:PFV	Kaakaala	go:PFV	mouth/edge:LF	water

he/she/it went from Kaakaala to the river's edge

CLAUSES AND CLAUSE COMBINATIONS

The present chapter deals with clauses (10.1) and clause combinations (10.2) in Mambay. While these topics are treated in greater detail within the context of an analysis of Mambay discourse (Anonby 2005), an overview of major patterns is given here.

10.1 Clauses

The following aspects of clause structure are covered in this section: constituent order (10.1.1), clause and clause constituent particles (10.1.2), verbless clauses (10.1.3) and single-word utterances (10.1.4).

10.1.1 Constituent order

In Anonby (2005:8–13), constituent order in Mambay is detailed, and the effects of changes in order are also examined. In the present study, a basic summary is provided.

In Mambay, the basic (unmarked) order of major constituents in verbal clauses is rigidly SVO (subject–verb–object).

tí-gérêm	ɗáɗ-zí	túra	the women sowed millet
AUG-woman:PL	sow:PFV-PL	millet	
S	V	O	

mǐ	yáh	pìzá	I will take the horse
1SG:IRR	take:FUT	horse	
S	V	O	

Constituent order in verbless clauses is uniformly S–Pred (subject–predicate; see 10.1.3).

mù	kwéé	you are Kwe
2SG	Kwe	
S	Pred	

bígà	sàù	màh	the child is in the granary
child	inside	granary	
S	[Pred]	

In a verbal clause with two objects, one object is typically a patient and the other a recipient. Two strategies are available in such situations, and in both cases, the more salient object in the discourse follows the other object. If the more salient object is a patient, it simply follows the recipient:

Ø **híí** **mí** **sòblá** he/she/it gave me *an axe*
 3:PFV give:PFV 1SG.OBJ axe

If the more salient object is a recipient, it is introduced after the patient with the preposition **yâg** ‘to, for.’

Ø **híí** **sòblá yâg mí** he/she/it gave *me* an axe
 3:PFV give:PFV axe to 1SG.OBJ

In both cases, object pronouns (6.1.3.1) are used for a pronominal recipient.

Subsequent to the SVO complex, the following order is exhibited: directional adverb – locative (spatial or temporal) adverbial complement – aspectual or descriptive adverbial complement – particle. Examples which illustrate this ordering are as follows:

má yáh-zí gííbò vòró
 3:OPT take:OPT-PL alcoholic.drink to.there

nìlè má bël rù'gó
 bottom/under:3SG.COREF/IMPERS.POSS.INAL with child:PL:LF clay.water.jar
they must take alcoholic drinks down there with small clay water jars

mì té'là tí' tí' nà
 1SG walk:VN always QM

do I always walk? / am I always walking?

Discourse-orienting elements such as topic nouns, modal adverbs (7.6.1.2) and connective locational (spatial and temporal) constructions are placed before the SVO complex.

kwéé rè, Ø yáá kâ'
 Kwe TOPIC 3:PFV stay:PFV here

as for Kwe, he stayed here

bàhrá mì té'là
 better 1SG walk:VN

it is better that I walk

rógò má rúgà mǐ gòg-ní
 tomorrow with morning 1SG.IRR fly:FUT-1SG.REFL
tomorrow morning I will fly

10.1.2 Clause and clause constituent particles

A small number of particles are used in reference to clauses and clause constituents. (Particles which are used to define relations between clauses are discussed separately in 10.2.2).

Unlike adverbs, which are minimally comprised of a heavy syllable, clause- and clause constituent-modifying particles uniformly exhibit a light (CV) syllable.

These particles fall into three groups: Indicative particles, Optative particles, and an attributive copula **ká**. While Indicative particles are treated in the present section, Optative particles are described in the chapter on verbs (7.6.1.1.2), and the attributive copula is described in the context of verbless clauses (10.1.3.2).

Four Indicative particles are found in Mambay:

nà (question particle; see also 4.4.2.3)
yó (affirmative particle)
yá (negative particle)
rè (topicalization particle)

Indicative particles are used in reference to clauses as well as clause constituents. Since the core of a clause is prototypically a verb, applying a particle to a verbal clause is formally and functionally equivalent to applying it to the verb (see 7.6.1.1 for examples). In the following section, each of the Indicative particles is shown (whenever attested) in a verbless clause, with an Indicative verb, and with at least one other clause constituent.

10.1.2.1 The question particle **nà**

When the question particle **nà** is juxtaposed with a noun, an interrogative clause results.

kwéé nà is it Kwe?
 Kwe QM

The particle **nà** may also be applied to complete verbless clauses (10.1.3.1).

mù kwéé nà are you Kwe?
 2SG Kwe QM

cf. **mù kwéé** you are Kwe
 2SG Kwe

Further, **nà** is frequently used with verbal clauses (7.6.1.1.1).

mù	vúm	nà	are you about to go?
2SG	go:FUT:2SG	QM	
cf. mù	vúm		you are about to go
2SG	go:FUT:2SG		

The use of **nà** with interrogative pronouns is discussed in 6.2. The following serves as an example:

wíí	pá-lè	nà	what has happened?
what?	happen:PERF-3SG.REFL	QM	

10.1.2.2 The affirmative particle **yó**

The affirmative particle **yó** ‘indeed’ has the effect of affirming a clause or putting focus on an Indicative clause constituent. When it is simply juxtaposed with a noun, a presentational clause or an answer results.

kwéé	yó	here is Kwe / it is Kwe
Kwe	indeed	

With the exception of interrogative pronouns (6.2), sentences consisting of a single word are not permitted; thus, in cases where a noun is used to answer a question—as shown by the preceding example—it is always accompanied by **yó**.

The particle **yó** may also be applied to complete verbless clauses (10.1.3).

mù	kwéé	yó	you are indeed Kwe
2SG	Kwe	indeed	
cf. mù	kwéé		you are Kwe
2SG	Kwe		

An example of **yó** applied to a verbal clause is as follows (cf. 7.6.1.1.1):

mì	té’là	yó	I am indeed walking
1SG	walk:VN	indeed	

Finally, **yó** may be used to put focus on a subject.

mì	yó	páà	só’lé	<i>I am the boss / I am the Lord</i>
1SG	indeed	man:LF	greatness	
wíí	yó	pá-lè	nà	<i>what has happened?</i>
what?	indeed	happen:PERF-3SG.REFL	QM	

10.1.2.3 The negative particle *yá*

Negation is always signalled by the clause-final negative particle *yá* along with some additional indicator. For negation of an equivalence clause, *yá* is found in conjunction with a third person negative non-Perfective pronoun *h̃̀* (6.1.2.6) in initial subject position.

h̃̀	wáà	yá	he/she/it is not the chief
3:NONPFV.NEG	chief	NEG	
cf. dú	wáà		he/she/it is the chief
3SG.INDEP	chief		

For absence/non-existence clauses, a third person negative Perfective negative pronoun *h̃̀́* (6.1.2.5) is used directly before *yá*.

wáà	h̃̀́	yá	the chief is not there / there is no chief
chief	3:PFV.NEG	NEG	
cf. wáà	tògó		the chief is there / there is a chief
chief	be		

The negative particle *yá* is most commonly found with verbs (7.6.1.1.1) and, like the other Indicative particles, is found clause-finally; the marking of negation in this position is an areal feature (Watters 2000:207). Here, *yá* is accompanied by a modification of the structure of subject pronouns, which mark realis value (see 6.1.2).

m̃̀	té'là	yá	I am not walking / I do not walk
1SG:NONPFV.NEG	walk:VN	NEG	
cf. m̃̀	té'là		I am walking / I walk
1SG	walk:VN		

Objects may also be negated: modifications in tonal and segmental structure similar to those applied to subject pronouns signal that negation concerns an object rather than the verb or clause. This negation has the effect of focus on the object, and indicates that the object is different item than the one which the listener expects. In the following cases, the object's final syllable is lengthened and a low tone is associated with it.

m̃̀́	kó	bígàà	yá	I didn't see the <i>child</i>
1SG:PFV.NEG	see:PFV	child:EMPH	NEG	
cf. m̃̀́	kó	bígà	yá	I didn't see the child
1SG:PFV.NEG	see:PFV	child	NEG	

mìj	kó	pìzáà	yá	I didn't see the <i>horse</i>
1SG:PFV.NEG	see:PFV	horse:EMPH	NEG	
cf. mìj	kó	pìzá	yá	I didn't see the horse
1SG:PFV.NEG	see:PFV	horse	NEG	

The structural effect of object negation has yet to be investigated with nouns of other CV shapes and tone melodies.

10.1.2.4 The topicalization particle **rè**

The prototypical use of the particle **rè** is to strongly topicalize constituents, that is, to centralize relevant known information in the context of a discourse (cf. 7.6.1.1.1).

mì	rè,	mì	yáá	kâ'	as for me, I stayed here
1SG	TOPIC	1SG	stay:PFV	here	
kyăh	rè,	ʔà	ká	gêhngá	as for fish, it is delicious
fish	TOPIC	3IMPERS	ATTRIB	sweetness	

kà	mù	héh-rì	kùl-nà	rè,
if/when	2SG	stop:PERF-PERF	plow:VN-OBJ	TOPIC

mù	kěhl	páà	bîn
2SG:OPT	look.for:OPT	man:LF	other

when you have finished plowing, look for another person

Another important use of **rè** is as a floor-holding device (cf. Payne 1997:358): it shows that a speaker intends to continue an utterance (cf. the expectancy marker in 4.2.2).

rè !
TOPIC

let me finish!

pàrà	rò'	ʔéé	kyàg	ʔîn	kágà	rè
goodness!	issue	3SG.POSS.C/I	hurt:VN	body/at:LF	chicken	TOPIC

goodness! how this issue troubles the chicken ...

The particle **rè** is also found with Optative verb forms, where it is used to express mild supplication (7.6.1.1.2).

10.1.3 Verbless clauses

Verbless clauses (chains) are common in Mambay. Except in the case of interrogative pronouns, they must contain another element in addition to a noun or noun phrase (6.2,

10.1.2.2). Verbless clauses are constructed by combining a subject noun phrase (minimally consisting of a noun or pronoun) with one of the following elements:

- particle (10.1.3.1);
- noun (phrase) (0);
- adjective (10.1.3.3);
- numeral (10.1.3.4); or
- prepositional phrase (10.1.3.5).

The structure and, in some cases, function of each type of construction are considered in the following subsections.

10.1.3.1 Noun + particle

The simplest verbless clauses are those comprised of a (pro)noun and an Indicative particle (10.1.2).

mù nà is it you?
2SG QM

libà yó it is a guineafowl
guineafowl indeed

rò' párà yó it is well said (lit. 'it is a good word')
word:LF goodness indeed

10.1.3.2 Noun + noun (phrase)

Equivalence-type (A is B / A is a kind of B / A is identified by B) clauses are constructed by juxtaposing a (pro)noun with another noun or noun phrase.

mì kwéé I am Kwe
1SG Kwe

libà zòògí kùù the guineafowl is [a kind of] wild bird
guineafowl bird:LF bushland

fíìlò páhnà the house is [made of] mud
house mud

Locative clauses may be constructed in the same way, except that the second noun necessarily refers to a place. This leads to structural ambiguity which may be resolved by appealing to discourse-internal references as well as the text-external referential realm.

mì fíìlò I am at the house (/I am the house)
1SG house

Káǎǎ káàkààlá
Kada Kaakaala

Kada is in Kaakaala (/Kada is Kaakaala)

When the predicate of a verbless clause is a noun which describes the quality of the subject, the subject and the predicate noun are linked by the attributive copula **ká**. Although this particle may have originated historically from a preposition (cf. Elders 2000:243), in Mambay it is not used synchronically in any other context.

?à **ká** **bààǎ** it is hard
3IMPERS ATTRIB hardness

ná'rà **ká** **kpâhǎǎ** the sauce is salty/tasty
sauce ATTRIB saltiness

In verbless clauses with human subjects, an attributive predicate noun may be pluralized (cf. 5.5).

dùǎǎ **ká** **zóǎǎ** they are great/large/important
3PL.INDEP ATTRIB greatness:PL

10.1.3.3 Noun + adjective

Clauses in which an adjectival predicate modifies the subject are constructed by juxtaposing a subject (pro)noun and an adjective.

?à **báráǎ** it is straight
3IMPERS straight

ná'rà **lùrbùǎ** the sauce is sticky
sauce sticky

10.1.3.4 Noun + numeral

Count clauses may be constructed using a (pro)noun and a numeral.

dùǎǎ **bì-gíró** there are six of them
3PL.INDEP NUM-six

béla **bì-sáh** there are three children
child:PL NUM-three

10.1.3.5 Noun + prepositional phrase

In addition to being found with a noun + noun structure (10.1.3.2), locational clauses may be constructed by juxtaposing a subject with a prepositional phrase headed by the prepositions **sáǎ** 'inside, in,' **má** 'with/and' or **bèè** 'without' (9.3).

mì sàà fíìlò I am in the house
 1SG inside house

hùùrì sàà mậ the hyena is in the granary
 hyena inside granary

When the prepositional phrase is headed with **mậ** ‘with/and,’ the idea of ‘have’ is understood; when it is headed with **bèè** ‘without,’ the idea of ‘have not’ is communicated.

tí-vịnậ mậ túrà the woman has millet
 AUG-woman with millet

tí-vịnậ bèè túrà the woman does not have millet
 AUG-woman without millet

10.1.4 Independent utterances other than clauses

In some cases, a word or phrase may in itself constitute a complete utterance even though it does not meet the minimal formal requirements for a clause (i.e., subject plus predicate). While its significance is bound to the discourse of which it is a part, it is syntactically independent. Items which typically pattern in this way in Mambay include interjections, swear words, commands, vocatives and formulae as well as affirmative and negative markers. The following serve as examples:

hắắ/?ậậhắắ ha! aha! you see? (gloating)
hắy oh my! (astonishment)
kây of course not!; of course! (being taken aback) (cf. Fulf. *kay*)
?áhyyáà woe is me! (horror, grief)

'mậậ really! (sincerity, astonishment; lit. ‘truth’)
pàrà goodness! (astonishment; cf. **pàrà** ‘goodness’)
sú'ậ damn! (frustration, regret)

nậậ come! get over here! (cf. **nậậ** ‘touch’)
swá' go! rah rah rah! (cf. **swá'** ‘encourage’)

káđá Kada! (cf. 5.12.1)
pậậ Pana!

kậvậw “the end”
kì-swá' thankyou! hello! (cf. **kì-** ‘place,’ and **swá'** immediately above)

?ậậ yes
?áá, ?á?à, ?áá?à no

ʔààyéé, ʔàyyéé	yes, indeed! (cf. Chadian Arabic <i>ayyē</i> ‘yes’)
ʔìhî	yes, that’s right
̀̀mhm̀̀	yes
̀̀òwó, ̀̀wwó, ̀̀òó	yes (cf. Fulf. <i>ooho</i>)
(nasal click)	yes (acquiescence) (see 2.1.7.3)

10.2 Clause combinations

In Mambay, clauses are related within a sentence by means of coordination (10.2.1) and subordination (10.2.2). In the present discussion, a description of clause combinations is carried out with an emphasis on the morphemes as well as the syntactic structures that make relations between clauses possible.

10.2.1 Coordination

Clauses of equal grammatical status may be coordinated by juxtaposition or with a conjunction. Juxtaposition is the more common way that this is achieved.

nà-pùgzá lùg-zí, kó-zì-rú the people went out, and they saw him
 PFX-person:PL go.out:PFV-PL see:PFV-PL-3SG.OBJ

băh hùm, nà-táállá gyáá the rain came, and the ants swarmed
 rain come:PFV PFX-ant.sp. foam.up:PFV

m̀̀y ǹ̀a, m̀̀y ǹ̀a is it you, or is it me?
 2SG QM 1SG QM

Within a sentence, conjunctions may also be used to coordinate clauses. **m̀̀n** is used to coordinate sequential clauses.

fààlé, vè bú’ m̀̀r h̀̀yùrí
 back/after:3SG.COREF/IMPERS.POSS go:PFV gather.up:PFV excrement:LF hyena

m̀̀n tààgí s̀̀à m̀̀h v̀̀ù v̀̀ù
 then whip:PFV inside:LF granary IDEO IDEO

after, he/she/it went and gathered up the hyena excrement and then splashed the inside of the granary with it vuu vuu

Two forms of a conjunction **m̀̀à ~ m̀̀á** ‘or’ are used to present alternative possibilities within a sentence. In the first example, which uses **m̀̀à**, the coordinated clauses stand on their own:

làà-rì kyăh ǹ̀a m̀̀à zăg-lè
 eat:PERF-PERF fish QM or refuse:PERF-3SG.REFL

has he/she/it eaten the fish or has he/she/it refused?

In a second example, the form **má** ‘or’ (which represents a special function of the preposition **má** ‘with, and’) coordinates two clauses which are themselves subordinated (10.2.2) to a following clause:

sí-kètí **gù-lé** **má** **gù** **yá,**
 PFX-God consent:PERF-3SG.REFL with/and/or consent:PFV NEG

mìí **gòg-ní** **rógò**
 1SG.IRR fly:FUT-1SG.REFL tomorrow

[whether] God has consented or not, I will fly tomorrow

Precise factors influencing the contrastive usage of **má** vs. **màà** have not been determined, but are likely motivated by considerations of emphasis (cf. 6.1.5, 10.1.2.3), realis value (cf. 6.1.2, 7.4), and/or subordination (10.2.2) (either inherent to each of the forms or reflecting those of the discourse context).

10.2.2 Subordination

Clauses may be combined so that one clause is the main clause and another clause is subordinate. Subordinate clauses are of three types: complement (10.2.2.1), adverbial (10.2.2.2), and relative (10.2.2.3).

10.2.2.1 Complement clauses

In Mambay, object complement clauses are found following the verb (as is any other object; see 10.1.1), and are introduced by the complementizers **bè** and **bàh**. While these complementizers are typically used as quotation markers with speech verbs, they may also be found with verbs of cognition and performance (see below).

The first quotation marker, **bè**, is the more common of the two; it typically signals a quotation (indirect as well as direct speech).

Indirect speech:

ró' **bè** **lè** **vé-lé** **dâg** **byàá**
 say:PFV QUOT 3SG.COREF go:FUT-3SG.REFL mouth/edge water

he/she/it said that he/she/it_i was about to go to the water's edge

Direct speech:

ró' **bè** **mì** **ví-ní** **dâg** **byàá**
 say:PFV QUOT 1SG go:FUT-3SG.REFL mouth/edge water

he/she/it said, "I am about to go to the water's edge"

Often, the speech verb is dropped, but **bè** implies its existence.

Note the use of the second person object pronoun (cf. 6.1.1) for the quotation addressee in the final example (see also Anonby 2005:42).

10.2.2.2 Adverbial clauses

Adverbial clauses are used to express a range of adverbial information pertaining to a main clause. Attested functions include time, purpose, concession and condition. The following adverbializers are used introduce these adverbial clauses:

kà	when, if; and then, before, so that, in order to
kò	when, if
kòò	even if, whether
má-kì-nàá	while, when, even though (cf. má ‘with, and,’ kì- ‘place, situation,’ nàá (relativizer))

As the subsequent discussion shows, all of the adverbializers are found clause-initially.

The adverbializer **kà** functions differently depending on where the subordinate clause in which it occurs is placed. When the subordinate clause comes before the main clause, **kà** means ‘when’ (simultaneous time) or ‘if’ (condition). In this position, it is only attested in the data with Indicative verb forms.

kà vérgà hùm-lé, dǔg gbàh kágà
 when/if traveller come:PERF-3SG.REFL 3GEN catch:VN chicken
when a traveller has come, they catch a chicken

kà sí-kètí gù-lé, rógò má rúgà
 when/if PFX-God consent:PERF-3SG.REFL tomorrow with/and morning

mǐ gòg-ní
 1SG.IRR fly:FUT-1SG.REFL

if God has consented, tomorrow morning I will fly

However, when the subordinate clause follows the main clause, **kà** means ‘and then, before’ (sequential time; with an Indicative verb form) or ‘so that’ (purpose; with an Optative verb form).

kà in a subordinate clause with an Indicative verb form:

mǐ làà bé'n kà mǐ mún
 1SG.IRR eat:FUT first and.then 1SG.IRR come:FUT:to.here

I will eat first before I come / I will eat first and then I will come

kà in a subordinate clause with an Optative verb form:

mǐ **làà** **bé'n** **kà** **mǐ** **mùn**
1SG.IRR eat:FUT first and.then 1SG.OPT come:OPT:to.here

I will eat first so that I might come

The adverbializer **kò** differs from **kà** in that it is only found in subordinate clauses that precede the main clause. There, it performs the same function as **kà**, meaning ‘when’ or ‘if.’

kò **vérgà** **hùm-lé,** **dǔg** **gbàh** **kágà**
when/if traveller come:PERF-3SG.REFL 3GEN catch:VN chicken

when a traveller has come, they catch a chicken

kò **sí-kètí** **gù-lé,** **rógò** **má** **rúgà**
when/if PFX-God consent:PERF-3SG.REFL tomorrow with/and morning

mǐ **gòg-ní**
1SG.IRR fly:FUT-1SG.REFL

if God has consented, tomorrow morning I will fly

The adverbializer **kò** is also distinctive in that, unlike **kà**, it has an emphatic counterpart **kóò** ‘even if’ (concession and condition). If **kóò** is used with more than one coordinated construction, it carries the sense ‘whether.’

kóò **bígà** **hùm-lé,** **dǔg** **gbàh** **kágà**
even.if child come:PERF-3SG.REFL 3GEN catch:VN chicken

even if a child has come, they catch a chicken

kóò **rò** **tì** **káàlàw,** **kóò** **rò** **tì** **káàkààlá,**
even.if 2PL COLL:HEAD Kaalaw even.if 2PL COLL:HEAD Kaakaala

ró **lá'** **kwǐ** **'nám**
2PL:OPT listen:OPT neck/voice:1SG.POSS.INAL well

*whether you are people from Kaalaw, or whether you are people from Kaakaala,
listen well to my voice*

One final adverbializer, which is found before a sentence-initial subordinate clause, is **má-kì-nàá** (lit. ‘with-[the]place-that’). It typically means ‘while, when’ (simultaneous time).

má-kì-nàá **mù** **làá-nà,** **mìí** **kyáŋ-gám**
 while 2SG eat:VN-OBJ 1SG:IRR wait:FUT-2SG.OBJ

while you are eating, I will wait for you

ɓà' **ɓà'** **má-kì-nàá** **sí-kètí** **ɓó'** **kètí** **má** **tí-sìgró,**
 PAST PAST while PFX-God create:PFV heaven with AUG-earth

nàmzá **gâh** **ʔéré** **má** **nà-pùgpùgá**
 animal:PL midst:LF 3PL.C/I.POSS with PFX-humankind

long ago, when God created heaven and earth, the animals dwelt with humankind

If the main clause is inherently counter-expectational with respect to the subordinate clause, **má-kì-nàá** admits the sense ‘even though’ (concession).

má-kì-nàá **mìí** **lá'** **'nám yá,**
 while 1SG:PERF.NEG listen/understand:PFV well NEG

mì **hûm-ní**
 1SG come:PERF-1SG.REFL

even though I did not understand, I have come

Major adverbial functions which could be expressed in other languages with adverbial clauses are in some cases relegated to adverbial noun and prepositional phrases in Mambay. This is true of manner, reason and some time constructions:

manner:

mì **hûm-ní** **má** **á'rvà**
 1SG come:PERF-1SG.REFL with run:VN

I have come running (lit. I have come with running)

reason:

mì **hûm-ní** **káà** **súŋgì** **ʔám**
 1SG come:PERF-1SG.REFL head/reason:LF lie.down:VN:LF 2SG.POSS

I have come because you were lying down (lit. I have come [for the] reason of your lying down)

time (the two clauses are also expressed in separate sentences):

mì lá'-rì. fàalé, mì mún
1SG hear:PERF-PERF back:3SG.C/I.POSS.INAL 1SG come:PFV:to.here

I heard. After this (lit. Its back), I came.

10.2.2.3 Relative clauses

Relative clauses, which function as noun modifiers, are uniformly postnominal: they follow the linked form (5.2.2) of the noun they modify and the invariable relativizer **nàá** (cf. 5.14.6).

páà nàá Ø nú-lé káám dâg tômná
man:LF REL 3:PFV sleep:PFV-3SG.REFL head/on:2SG.POSS.INAL first

the person that has gone to sleep first ahead of you

?îg nàá ?àá pá-lé
thing:LF REL 3SG:IRR happen:FUT-3SG.REFL

what (lit. the thing that) will happen

Relative clauses in Mambay are versatile: there appear to be few restrictions on the distribution of TAM in relative clauses, and the antecedent nouns they accompany may function as their subjects, objects or locative/temporal complements.

First of all, subject relative clauses—those for which the antecedent noun is the subject of the relative clause—are common (relative clauses are shown in square brackets).

páà [nàá Ø nú-lé káám dâg tômná]
man:LF REL 3:PFV sleep:PFV-3SG.REFL head/on:2SG.POSS.INAL first

?à kpûg káám tùm
3:IMPFV wake.up:VN head/on:2SG.POSS.INAL forward

the person that has gone to sleep first ahead of you wakes up before you

mì kó ?îg [nàá Ø pá-lé]
1SG see:PFV thing:LF REL 3:PFV happen:PFV-3SG.REFL

I saw what (lit. the thing that) happened

Object relative clauses, that is, those for which the antecedent noun is the object of the relative clause, are also well-attested. Inanimate objects are typically represented by a gap within the relative clause.

mì sá' ?ig [nàá mì kyáh]
1SG buy:PFV thing:LF REL 1SG want:PFV

I bought what (lit. the thing that) I wanted

gbíí-zí ?ig [nàá Ø yáh-zí vòró kô']
abandon:PFV-PL thing:LF REL 3:PFV take:PFV to.there there

they abandoned what (lit. the thing that) they took there

Traces of animate objects, however, often surface as object pronouns in the relative clause.

vè mà páà [nàá rò sùm-rú]
go:PFV with person:LF REL 2PL know:VN-3SG.OBJ

he/she/it went with a person that you know

Finally, an antecedent noun may also function as locative (spatial or temporal) adverbial complement (cf. 10.1.1) of a relative clause.

kèhl kè' [nàá hùùrí nì mírà]
look.for:PFV place:LF REL hyena defecate:PFV excrement

he/she/it looked for the place that the hyena defecated

gêh [nàá Ø záh-zí-rì bíg wáà],
day:LF REL 3:PFV tread:PERF-PL-PERF child:LF chief

?àá mûn má lóózìrá káà dùgú
3:IRR come:FUT:to.here with difficulty head/on:LF 3PL.POSS.INAL

the day that they have trampled the chief's child, he will come with hardship

TEXTS

This section contains a selection of five Mambay texts representing various genres. The texts, which are transcriptions of recordings of the main collaborator Oussoumanou Bouba, are as follows:

1. Song: **hùrtìgóhm** ‘The locust’
2. Song: **wàhwàh** ‘Hubbub’
3. Legend: **táwsóò yáh gwààrè** ‘Tawsoo took the sickle’
4. Fable: **kágà mǎ líbà** ‘The chicken and the guineafowl’
5. Hortatory text: **nà-tú** ‘Proverbs’

The texts are presented with an interlinear translation. In the first line, the Mambay text is found; morpheme boundaries are marked with hyphens. The second line gives a literal translation of each morpheme or, when relevant, its grammatical function. In the third line, an idiomatic translation is provided in italics.

1. Song: **hùrtìgóhm** ‘The locust’

hùrtìgóhm mù húm “
locust.sp.1 2SG come:PFV EXPECT
Locust, did you come...

zà’rá kǎ’ nà.
dance:VN here QM
to dance here?

mù húm nà-kógrà “
2SG come:PFV PFX-look(n.) EXPECT
You came to watch, didn’t you?

mù ?ùr káà sàà yáŋ “,
2SG stand:PFV head/on:LF stone IDEO EXPECT
You stood on the stone unperturbed,

mù ‘náj kǔm dáájú.
2SG stretch:PFV neck:2SG.POSS.INAL IDEO
you stretched your neck, craning it and looking all around.

mùú tì nà-bàbbá
2SG.IRR become:FUT PFX-locust.sp.2
Will you become a grasshopper

kà mú là kwáà nà.
and.then 2SG.OPT eat:OPT grass QM
so that you can eat grass too?

2. Song: **wàhwàh** ‘Hubbub’

wàhwàh! zèlà lòón mǐ.
hubbub lie:VN bother:PFV 1SG.OBJ
Hubbub! A lie bothered me.

zèlì wǐ lòón páà dō’ nà, páà dō’ nà.
lie:VN:LF what? bother:VN man:LF ANAPH QM man:LF ANAPH QM
What rumour is bothering that man, that man?

tí-gérêm wàđ đăđ-zí túrà kúù.
AUG-woman.PL:LF chief sow:PFV-PL millet bushland
The wives of the chief sowed millet in the fields.

băh [ʔàá]¹⁰ đáá yá, băh [ʔàá]¹ đáá yá.
rain 3:PFV.NEG succeed:PFV NEG rain 3:PFV.NEG succeed:PFV NEG
The rain did not come, the rain did not come.

gúú-zí nǐrè vòró fàà sá’bà
pull.back:PFV-PL bottom:3PL.C/I.POSS.INAL to.there back/place:LF traditional.salt
They [the women] bent over at the place where the salt is

kì-gòò nà-rígrílè, nà-rígrílè.
place:PFX-prepare:VN PFX-gourd.seed PFX-gourd.seed
to roast gourd seeds, gourd seeds.

kyéé ró’ lé bè lé gbáh ‘màrà
mother-3SG.C/I.POSS.INAL talk:PFV 3SG.C/I.OBJ QUOT 3SG.C/I.OPT catch:OPT friend

¹⁰ This pronoun is absent in the song, but Oussomanou maintains that it is obligatory in normal speech; cf. 7.5.

má bǒ'm-bò'msí,
with Bo'm-Bo'msi

[She_i said] her_i mother_j / the mother_j told her_i that she_{i/j} must become friends with Bo'm-Bo'msi,

bò'msí hàhngí káálé gbàrgàtàng
Bo'msi forget:PFV head:3SG.C/I.POSS.INAL IDEO
but Bo'msi lost his head completely,

yáh nà-gbáhgú ríí fíí[t]¹¹ fíí[t]
take:PFV PFX-cultivated.hibiscus.sp. clean.out:PFV IDEO IDEO
took the rich hibiscus-leaf sauce and cleaned it all out with his fingers,

yáh nà' gôm síg sùgú kpíh.
take:PFV sauce:LF vine.sp. place:PFV downward IDEO
took the bitter vine-leaf sauce and put it down with a clunk.

lòòrí yá, lòòrí yá.
lick:PFV NEG lick:PFV NEG
He didn't lick it, he didn't lick it.

kwéé ", mú tì páà hùr tùúrì.
Kwe EXPECT 2SG.OPT become:OPT man:LF eat.powder:VN *boule*
Kwe, be the one who eats the dry boule.

kwéé ", múyù nìn bèè délà yá,
Kwe EXPECT 2SG.NONPFV.NEG eye:LF without mature:VN NEG
Kwe, you are like eyes without maturity,

kwéé ", mú yáh tùúrì mú lòòrí.
Kwe EXPECT 2SG.OPT take.OPT *boule* 2SG.OPT lick:OPT
Kwe, take the boule and lick it.

¹¹ The final **t** of this ideophone is absent in the song, but Oussomanou maintains that it is used in normal speech.

3. Legend: **táwsòò yáh gwààrè** ‘Tawsoo took the sickle’

lǎh má yáá káà tí-sìgró gbàntàŋ.

story 3:OPT sit/be:OPT head/on:LF AUG-land IDEO

May this story live on throughout the wide world.

đáŋ pádpád.

spread.out:OPT/PFV IDEO

[Audience:] [May it] spread out rapidly / It spread out rapidly.

táwsòò yáh gwààrè.

Tawsoo take:PFV sickle

Tawsoo took the sickle.

táwsòò yáh gwààrè ”, bè lè vé-lé wàà tùgló.

Tawsoo take:PFV sickle EXPECT QUOT 3SG.C/I go:FUT-3SG.REFL diminish:VN hedge

Tawsoo took the sickle, intending to go and trim the hedge.

tùgló vbíi sêhrú.

hedge cut:PFV hand:3SG.POSS.INAL

The hedge cut his hand.

kàr dágé káà ryăh.

set:PFV mouth:3SG.C/I.POSS.INAL head/reason/on:LF cry(n.)

He opened his mouth with a cry.

nâ-gbóglà hùr ”, háá hé’ kètí.

PFX-toad jump:PFV EXPECT until bang:PFV sky

The toad jumped, so high that he banged into the sky.

băh húm ”, nâ-táállá gyàà.

rain come:PFV EXPECT PFX-ant.sp. foam.up:PFV

The rain came, and the ants swarmed.

nà-vbérgà bè lè sàr-nà.
PFX-agama.lizard QUOT 3SG.C/I devour:VN-OBJ
The agama lizard intended to devour them.

nà-táállá bè gû mù sàr ré ?án lá' náá' ".
PFX-ant.sp. QUOT but.then 2SG devour:VN 3PL.C/I.OBJ how? like this EXPECT
The ants said, But how could he devour them like this?

nà-vbérgà bè léè sàr ró yá ",
PFX-agama.lizard QUOT 3SG.C/I:NONPFV.NEG devour:VN 2PL.OBJ NEG EXPECT

rò gyàà gyáàrì bágá nà.
2PL foam.up:PFV foam.up:VN:LF a.little QM
The lizard said, [How could it be that] he not devour them? Did they only swarm a little swarming?

bè réè gyàà yá, báh hóm hómgi
QUOT 3PL.C/I:NONPFV.NEG foam.up:FUT NEG rain come:PFV come:VN:LF

bágá nà ".
a.little QM EXPECT
They said, [How could it be that] they will not swarm? Did the rain only come a little coming?

báh bè léè hóm yá, ná-gbóglà hè' kèti
rain QUOT 3SG.C/I:NONPFV.NEG come:FUT NEG PFX-toad bang:VN sky

hè'-nì bágá nà.
bang:VN-OBJ:LF a.little QM
The rain said, [How could it be that] it will not come? Was the toad only banging the sky a little banging?

ná-gbóglà bè léè hé' yá, táwsòò sàh rèh
PFX-toad QUOT 3SG.C/I:NONPFV.NEG bang:FUT NEG Tawsoo rip:VN cry(n.):LF

bágá nà ".
a.little QM EXPECT
The toad said, [How could it be that] he will not bang [into the sky]? Was Tawsoo only letting loose a little cry?

táwsòò bè léè sàh yá, tùgló vbíí lé
Tawsoo QUOT 3SG.C/I:NONPFV.NEG rip:FUT NEG hedge cut:PFV 3SG.C/I.OBJ

vbìi-nì bágá nà.
cut:VN-OBJ:LF a.little QM

Tawso said, [How could it be that] he will not let loose [a cry]? Did the hedge only cut him a little cutting?

tùgló bè léè vbíí-m yá, mù wàà lé
hedge QUOT 3SG.C/I:NONPFV.NEG cut:FUT-2SG.OBJ NEG 2SG diminish:VN 3SG.C/I.OBJ

wàà-nì bágá nà ".
diminish:VN-OBJ:LF a.little QM EXPECT

The hedge said, [How could it be that] it will not cut him? Was Tawsoo only trimming him a little trimming?

táwsòò bè léè wáá-m yá, lé wǎr
Tawsoo QUOT 3SG.C/I:NONPFV.NEG diminish:FUT-2SG.OBJ NEG 3SG.C/I.OPT leave:OPT

dâg tí-?ázè vòŋ nà ".
mouth/door:LF AUG-member.of.ʔàzgàrà:3SG.C/I.POSS.INAL open QM EXPECT

Tawso said, [How could it be that] he will not trim it? Must he leave his mother-in-law's door open?

bè tí-?ázàm pàg wíí yâg-ám nà.
QUOT AUG-member.of.ʔàzgàrà:2SG.POSS.INAL make:VN what? to-2SG.POSS.INAL QM
[The hedge] said, what does his mother-in-law do for him?

bè tí-?ázè kòò vínà yâg lé.
QUOT AUG-member.of.ʔàzgàrà:3SG.C/I.POSS.INAL bear:PFV woman to 3SG.C/I.OBJ
He said, His mother-in-law gave birth to a wife [woman] for him.

vínà pàg wíí yâg-ám nà.
woman make:VN what? to-2SG.POSS.INAL QM
...And what does the wife do for him?

vínà kòò vínà yâg lé.

woman bear:PFV woman to 3SG.C/I.OBJ

...The wife [woman] gave birth to a girl [woman] for him.

bígà pàg wíí yâg-ám nà?

child make:VN what? to-2SG.POSS.INAL QM

...And what does the child do for him?

bígà nì mírà, nà-kùró lêg-nà.

child defecate:VN excrement PFX-vulture suck:VN-OBJ

...The child keeps the vultures happy (lit. the child craps, and the vultures suck it up).

bíg vínà yáh rù'gó ", bè lè vé-lé

child:LF woman take:PFV clay.water.jar EXPECT QUOT 3SG.C/I go:FUT-3SG.REFL

dág byáá, kpùr 'màhlé tí-kpéhpèhw.

mouth/edge:LF water bump:PFV foot:3SG.C/I.POSS.INAL AUG-IDEO

The girl took the clay water jar, intending to go to the water's edge, and bumped her foot throwing her right off balance.

rù'gó hùg-lé, hàn dágé bè

clay.water.jar break:PFV-3SG.REFL put.back:PFV mouth:3SG.C/I.POSS.INAL QUOT

The clay water jar shattered, and she let out a groan, saying:

sù'nì, mì yàà kà' wàà zàhmbà, mì háá

damn! 1SG stay/be:PFV area.outside.gate:LF chief IDEO 1SG come.back:PFV

má sàlá kpàhwwà.

with cowrie.shell IDEO

"Damn! I was outside the chief's gate all beautifully ornamented, and I came back with the tinkling of cowrie shells."

bíg támbúúrà ", ?óó bíg lóólà ",

child:LF pigeon EXPECT braid:PFV child:LF rope EXPECT

ʔóó bîg lóólà kàrwàhz ʔ.

braid:PFV child:LF rope IDEO RES

The little pigeon, it braided a little rope, it braided a little rope abruptly and desperately...

kàvbậw ʔ, lăh mú túú káání gá,

the.end EXPECT story 2SG:OPT partake:OPT head:1SG.POSS.INAL NEG.OPT

mú túú káà tâw gbòòrò ʔ.

2SG:OPT partake:OPT head:LF Taw(:LF) bald EXPECT

The end!...Tale, don't take [any hair] from my head; take it from Taw's bald head / take it from Bald Taw's head...

4. Fable: **kágà má líbà** ‘The chicken and the guineafowl’

ʔíg nàǎ pá-lé **”, kágà ”, dúú**
thing:LF REL happen:PFV-3SG.REFL EXPECT chicken EXPECT 3SG.EMPH

tì zòògì fíí, líbà ”, dú zòògì kúú.
become:PFV bird:LF home guineafowl EXPECT 3SG.INDEP bird:LF bushland

This is how it happened that the chicken, he became a domestic bird, and the guineafowl, [became] a wild bird.

ɓà’ ɓà’ màkìnàǎ sí-kètí ɓó’ **kètí má tí-sìgró ”,**
PAST PAST while PFX-God throw/create:PFV heaven with PFX-earth EXPECT

nàmzá ”, gâh ʔéré má nà-pùgpùgá.
animal:PL EXPECT dwelling:LF 3PL.C/I.POSS with humankind

Long ago when God created heaven and earth, the animals, their dwelling was with humankind.

gyààrì bîn ”, nâh-zí kááré **vòró**
ones:LF certain EXPECT take.out:PFV-PL head:3PL.C/I.POSS.INAL to.there

kúú ”, mûn tì-zí nàmzì kúú.
bushland EXPECT then become:PFV-PL animal:PL:LF bushland

Certain ones departed for the bush, and then became wild animals.

tì nàǎ pèè-zì-ré **fíí ”,**
COLL:HEAD REL be.limited:PFV-PL-3PL.REFL home EXPECT

nà yâh-zí dùgú bàh nàmzì fíí.
1&2 call:VN-PL 3PL.OBJ QUOT.REP animal:PL:LF home

Those confined to habitations, we call “domestic animals.”

tì má g̃hǎ lǎǎ ”, pá-lé **lá’ dòógbúú.**
COLL:HEAD with pinion.feather also EXPECT happen:PFV-3SG.REFL like again

And for those with feathers, this happened similarly.

ʔì-náá ʔ, **ná** **lá'-zí** **ʔíḡ** **nàá**
HEAD-this EXPECT 1&2:OPT hear:OPT-PL thing:LF REL

pá-lé ʔ, **kà** **kágà** **má** **pèè-lé** **fíí.**
happen:PFV-3SG.REFL EXPECT and.then chicken 3:OPT be.limited:OPT-3SG.REFL home
This thing, let's listen to the thing that happened, whereby the chicken was confined to habitations.

rò' **náá** **ʔèr** **ʔín** **líbà** **má** **kágà,**
word:LF this get.up:PFV body/at:LF guineafowl with chicken

dùgzí **bàrgúú** **zòògì** **sáà** **kwéré:**
3PL.INDEP both bird:LF inside fence
This issue arose for the guineafowl and the chicken, both of them birds in captivity:

kà **ʔù'-lé** **vâḡ** **vérgà** ʔ, **nà-pùḡpùgá** **gbàh**
when arrive:PFV-3SG.REFL go:VN:LF travel(1er) EXPECT PFX-humankind catch:VN

kágà **lá'** **ʔíḡ** **nìì** **séh** **káà** **pàḡ** **mààrà.**
chicken like thing:LF bottom:LF hand(adv.) head/reason:LF make:VN:LF gift
When it has come about to go on a trip, people take a chicken as something in hand to give as a gift.

kà **vérgà** **hûm-lé** ʔ, **dũḡ** **gbàh** **kágà,**
when travel(1er) come:PERF-3SG.REFL EXPECT 3GEN catch:VN chicken

káá **gòó-nà** **yâḡ-rú.**
head/reason:LF prepare:VN-OBJ to-3SG.OBJ
When a traveller has come, they catch the chicken to cook it for him.

pàrà **rò'** **ʔéé** **kyàḡ** **ʔín** **kágà** **rè.**
goodness! word 3SG.C/I.POSS hurt:VN body/self:LF chicken TOPIC
Goodness! This issue pains the chicken himself...

gêh-náá ʔ, **tòḡ** **bádḡì-zí** **lààbá** **má** **líbà,**
day:LF-this EXPECT be peck.around:VN-PL eat:VN with evening

mùn kágà ”, ró’ líbà bè
come:PFV:to.here chicken EXPECT talk:PFV guineafowl QUOT

One day, when they were pecking food in the evening, the chicken came along, and he said to the guineafowl:

'már ?íí, mú lá' ?íng kyàg dígní.
friend:LF 1SG.POSS 2SG.OPT hear:OPT thing:LF hurt:VN liver:1SG.POSS.INAL

“My friend, listen to what is distressing me.

kà nà-pùgá vé-lé vérgà ”, ?à gbàh
when PFX-person go:FUT-3SG.REFL travel(1er) EXPECT 3:IMPFV catch:VN

mí ”, mǐí dòógbâh.
1SG.OBJ EXPECT 1SG:EMPH always

“When a person is about to go travelling, he catches me, always me.

kà vérgà hùm-lé hín ?índú,
when travel(1er) come:PERF-3SG.REFL to.here body/at:3SG.POSS.INAL

?à gbàh mí ”, káà pàg ná'rà yâg-rú.
3:IMPFV catch:VN 1SG.OBJ EXPECT head/reason:LF make:VN sauce to-3SG.OBJ

“When a traveller_i has come here to his_j place, he_j catches me, in order to make sauce for him_i.

rógò ”, má rúgá pímpím, mǐí gòg-ní ”,
tomorrow EXPECT with morning very.early 1SG:IRR fly:FUT-1SG.REFL EXPECT

mǐí ví-ní kúù.
1SG:IRR go:FUT-1SG.REFL bushland

“Tomorrow, early in the morning, I will fly, and I will go to the bush.”

líbà gù bè ?ààyéé ”, lá' ?ì-dó' ”, 'már ?íí.
guineafowl answer:PFV QUOT indeed! EXPECT like HEAD:ANAPH EXPECT friend 1SG.POSS

The guineafowl replied, “Indeed! So be it (lit. Like that), my friend.

gû ”, kà mù zǒn-nòm, gû mǐí ”,
but.then EXPECT when 2SG.S leave:PERF-2SG.REFL but.then 1SG:EMPH EXPECT

mìí yáá má víínà.

1SG.FUT stay:FUT with who?:QM

“But then...when you have left, but then what about me? Who will I stay with?”

kà sí-kètí gù-lé rógò má líbà ”

when/if PFX-God consent:PFV-3SG.REFL tomorrow with evening EXPECT

mìí gòg-ní.

1SG:IRR fly:FUT-1SG.REFL

“If God has consented, tomorrow evening...I will fly.”

kágà bè káá ?íg kín mù yàh yìh

chicken QUOT head/reason:LF thing:LF which? 2SG.S call:VN name:LF

sí-kètí sàà nà ”.

PFX-God inside QM EXPECT

The chicken said, “For what reason are you calling the name of God into this?”

sí-kètí gù-lé má gù yá mìí gòg-ní

PFX-God consent:PFV-3SG.REFL with accept:PFV NEG 1SG:IRR fly:FUT-1SG.REFL

rógò má rúgà.

tomorrow with morning

“Whether God has consented or not, I will fly tomorrow morning.”

nìí rúgà pá-lé kágà dúú gìhgìlé ”,

bottom:LF morning happen:PFV-3SG.REFL chicken hit:PFV wing:3SG.C/I.POSS.INAL EXPECT

gìh ?ílé bè lè gógrà ”,

strive:PFV body/self:3SG.C/I.POSS.INAL QUOT 3SG.C/I fly:VN EXPECT

pèè-lé káá kwéré ” kàgzàg.

be.limited:PFV-3SG.REFL head/on:LF fence EXPECT IDEO

When the first light came, the chicken [kaga] flapped his wings, made a great effort intending to fly, but petered out on top of the fence...with a flop [kagzag].

má rúgà “, **nà-pùgzá lùg-zí, kó-zì-rú bè**
with morning EXPECT PFX-person:PL go.out:PFV-PL see:PFV-PL-3SG.OBJ QUOT

?áhyyáà, ?ì-náá kágà yóò “, **?ì-náá kágà yóò.**
oh.dear! HEAD-this chicken indeed:EMPH EXPECT HEAD-this chicken indeed:EMPH

In the morning, the people went out and saw him [and they said], “Oh dear! This is the chicken, this is the chicken.”

gbăh-zì-rú “, **hăn-zì-rú hîn sàà kwèrè.**
catch:PFV-PL-3SG.OBJ EXPECT put.back:PFV-PL-3SG.OBJ to.here inside fence

They caught him, and put him back here inside the fence.

gyâh hàg-lé “, **libà rô'-rú bè 'mâr ?íí,**
sun break:PFV-3SG.REFL EXPECT guineafowl say:PFV-3SG.OBJ QUOT friend 1SG.POSS

libà yáh-rì káálé hîn “, **kà sí-kètí**
evening take:PERF-PERF head:3SG.C/I.POSS.INAL to.here EXPECT when/if PFX-God

gù-lé mǐj gòg-ní vòró kúù rè.
consent:PFV-3SG.REFL 1SG:IRR fly:FUT-1SG.REFL to.there bushland TOPIC

When the sunlight had diminished, the guineafowl said to him, “My friend, evening has joined us here...if God has consented I will fly out to the bush...”

libà pá-lé “, **libà ?ì-zòògá ?in**
evening happen:PFV-3SG.REFL EXPECT guineafowl HEAD-bird lift:PFV

?ílé bè sí-kètí, yáh 'màhlé
body/self:3SG.C/I.POSS.INAL QUOT PFX-God take:PFV foot:3SG.C/I.POSS.INAL

sà' sà', gòg-lé “, **vbírèrèrèrèrè, kàn-lé**
IDEO IDEO fly:PFV-3SG.REFL EXPECT IDEO pass:PFV-3SG.REFL

kpúz ì'.
far.away definitively

Evening [liba] came, and the guineafowl [liba] which is a bird lifted himself saying “God,” slowly and jerkily pulled each of his legs up, flew...with a great whirr and went far away forever.

kágà kàgzàg tị zòògì fíí, líbà “ zòògì kúù.
chicken IDEO become:PFV bird:LF home guineafowl EXPECT bird:LF bushland

So Flop the Chicken [kaga kagzag] became a domestic bird, and the guineafowl a wild bird.

?ígà kpá’ “, mú yáh yíh sí-kètí,
thing all EXPECT 2SG:OPT call:OPT name:LF PFX-God

?àá pá-lé yâg-ám.
3:IRR happen:FUT-3SG.REFL to-2SG.OBJ

For everything, call the name of God, and it will happen for you.

5. nà-tú' 'Proverbs'

twǎh bɛ̀è kǎ̀à nà ʔ.

snake bite:VN stick QM EXPECT

Does a snake bite the stick?

explanation: A snake doesn't bite the stick, but rather the person holding the stick. In the same way, one should not attack a messenger for bringing bad news.

nà-táállá bò' páà zèlǎ tùm.

PFX-ant.sp. throw:VN man:LF lie:VN forward

The ant throws the rumour-monger in front.

explanation: Like the ant that returns to the colony with a report about food and is obliged to lead the way back to the food, a person who makes a claim will have to prove it.

nà-kǎhrì páà kóm̀nà rúrà nì gàmbù.

PFX-fruit.sp.:LF man:LF hunger ripen:VN bottom:LF bag

The fruit of a hungry man ripens at the bottom of his bag.

explanation: A hungry person carefully watches over his or her food supply.

kágà ʔ bɛ̀ vyàh tǔr sùmù ʔ sé' hìg sùgò.

chicken EXPECT QUOT winnow:VN millet:LF night EXPECT must give:VN ear

The chicken says, "[Is someone] winnowing night millet? [One] must listen carefully."

explanation: Like a chicken that listens carefully for the sound of food at night, people should be alert for unseen things that might benefit them.

kà mù hí-rì nǎ̀nù yâg páà bìn ʔ

when 2SG give:PERF-PERF eye to man:LF other EXPECT

ʔà ʔà̀-ín kòg kyǎ'.

3:IMPFV surpass:VN-2SG.OBJ see:VN place/situation

When you have given your eyes to another man, his view surpasses yours.

explanation: People exaggerate what they actually see.

nà-mùrì sù mù té'là mà héélà nà ”.

PFX-jinn:LF night walk:VN with whistling QM EXPECT

Does the night jinn whistle when it walks?

explanation: If someone is doing something wrong, he or she will do it stealthily.

sígò ” hǐ ðù byáá n̄n b̄hàà

crocodile EXPECT 3:NONPFV.NEG hit:VN water eye/in.presence.of:LF ibis.sp.

bàtì yá.

two NEG

The crocodile, it doesn't stir the water near an ibis twice.

explanation: Like a bird that has been frightened by a crocodile's attack on another bird, a watchful person cannot be overtaken by danger.

páà n̄á n̄-lé káám ðág t̄m̄n̄á ”

man:LF REL sleep:PFV-3SG.REFL head/on:2SG.POSS.INAL first EXPECT

?à kp̄g káám t̄m̄.

3:IMPFV wake.up:VN head/on:2SG.POSS.INAL forward

The man who is asleep ahead of you, he wakes up before you.

explanation: A person that prepares early has an advantage over those who do not.

ðǔg hǐ n̄h kp̄áávirá káà páṅn̄i ?éé

3GEN 3:NONPFV.NEG take.out:VN bulb.plant.sp.:LF head/on:LF site:LF 3SG.C/I.POSS

téde yá.

all NEG

One doesn't take out all the plant bulbs from where they are situated.

explanation: People should look after what they may need in the future.

páà n̄á lá'-rì káà n̄-tú'zì n̄á ”

man:LF REL understand:PERF-PERF head/meaning:LF PFX-proverb:PL:LF this EXPECT

?àà sóg ?ǐg n̄á mì s̄g-n̄à n̄i b̄el r̄ógò.

3:IRR send:FUT thing:LF REL 1SG send:VN-OBJ bottom/for:LF child:PL:LF tomorrow

The man that has understood the meaning of these proverbs, he will pass on what I pass on for the children of tomorrow.

explanation: A wise person will teach his or her wisdom to the next generation.

Appendix 1: Inalienable possession paradigms

This appendix provides an inventory of inalienable possession paradigms, which are attested in noun-pronoun possessive constructions.

Nouns which may participate in inalienable noun-pronoun possessive constructions (5.3.4.1) are listed in the following table and divided into groups based on the CV shape and tonal melody of their linked forms (5.2.2.1). In each group, inalienable possessive constructions are formed in the same way for all nouns in the group. Nouns exhibiting idiosyncratic paradigms are also listed.

linked form type	noun	linked form (cf. 5.2.2)	gloss
Group 1a: CVV-final, L tone	fààlá	fàà	back, skin
	gǎh	gǎh	beard
	(káà) nǎ-wâdnǎnú	(káà) nǎ-wâdnǎ	buttocks
	mùhnǎ	mùh	vulva
	'màhnǎ	'màh	foot
	nǎ-nǎnú	nǎ-nǎ	bum
	nǎnú	nǎ	bottom
	vbààlá	vbàà	testicle
	wàhlá	wàh	nape (of neck)
Group 1b: CVV-final, HL tone	káálà	káà	head
	vbyâh	vbêh	cheek
Group 2: CVC-final (where final C is a consonant other than n), HL tone	dágà	dâg	mouth
	súgò	sûg	ear
	sábà	sâb	tail
Group 3a: CVC-final (where final C is n), L tone	gǎhgǎnú	gǎhgǎn	wing, fin
	gùùgùnú	gùùgùn	gill
	tǎnú	tǎn	front, genitals
Group 3b: CVC-final (where final C is n), HL tone	fǎnú	fǎn	forehead
	?ǎnú	?ǎn	body, self
	kpánǎ	kpân	penis
	nǎ-vǎnú	nǎ-vǎn	co-wife
	nǎnú	nǎn	eye, face, life
	zǎnú	zǎn	tooth, tusk

Group 4a: CV'n-final, L tone	gì'nú	gì'n	small of back
	tè'nú	tè'n	side (of body)
Group 4b: CV'n-final, HL tone	kàà nà-sí'nú	kàà nà-sí'n	knee
	nà-kànsí'nú	nà-kànsí'n	shadow, soul, spirit
	nà-kànsí'nú	nà-kànsí'n	kneecap, fontanelle
Group 5: CVhn-final, L tone	kìhnú	kìhn	waist, hip
Group 6a: CVVn-final, L tone	hùùnú	hùùn	thigh
Group 6b: CVVn-final, HL tone	síjùnú	síjùn	horn, antenna
Group 6c: CVVn-final, HLH tone	sùjùnú	sùjùn	younger in-law
Group 7: CVgn-final, HL tone	dígnú	dígn	liver
	nì nà-rígnú	nì nà-rígn	underarm
Group 8a: CV-final, L tone	fààzì	fààzì	member of fààzàrà (see Glossary)
Group 8b: CV-final, 2-mora, HLH tone	?ázi´	?ázi´	member of àzgàrà (see Glossary)
Group 8c: CV-final, 3-mora, HLH tone	fàhzi	fàhzi	member of fàhzàrà (see Glossary)
Idiosyncratic constructions	dwǎ'	(multiple forms; see paradigms below)	belly
	kwàá		neck, voice
	kyáá-rìnná		paternal aunt
	márnà		eldest sibling
	'márá		friend
	nàábà		colleague
	nàná´		maternal uncle
	nà-púrà		navel
	nà-rìnnú		tongue
	pàà		father
	pàá-nà-rìnná		paternal uncle
	pàà vaa		husband
	syâh		hand
	túù		mother
wáà	nose		

Inalienable noun-pronoun possessive construction paradigms are given on the following pages for an example noun from each group in the table above as well as for all nouns with idiosyncratic forms. The third person plural forms are not, morphologically speaking, part of the paradigms (see 6.1.4.2); however, they are included because they complete the semantic inalienable sets, and because they show the linked form of each of the nouns in alienable possessive constructions.

pronoun gloss	inalienable possessive pronoun	Group 1a: fààlá 'back, skin'	Group 1b: káálà 'head'	Group 2: súgò 'ear'	Group 3a: tìnú 'front, genitals'
1SG	-í	fààní	káání	súgí	tìní
2SG	-m	fààm	káám	súgúm	tìním
1&2SG	-ná	fààná	kááná	súgná	tìná
3SG	-rú	fààrú	káárú	súgrú	tìndú
3SG.L/I	-lé	fààlé	káále	súgé	tìlé
1PL	-rí	fààrí	káárí	súgrí	tìrí
2PL	-ró	fààró	kááró	súgró	tìró
1&2PL	-zínzá	fààzínzá	káázínzá	súgzínzá	tìnzínzá / tìnzá
3PL	(dùgú)	(fàà dùgú)	(káà dùgú)	(súg dùgú)	(tìn dùgú)
3PL.L/I	-ré	fààré	kááré	súgré	tìré

	Group 3b: nínù 'eye, face, life'	Group 4a: tè'nù 'side (of body)'	Group 4b: káà nà-sì'nù 'knee'	Group 5: kìhnù 'waist, hip'
1SG	níní	tè'ní	káà nà-sì'ní	kìhní
2SG	níním	tè'ém	káà nà-sì'ím	kìhm
1&2SG	níná	tè'ná	káà nà-sì'ná	kìhná
3SG	nìndú	tè'ndú	káà nà-sì'ndú	kìhndú
3SG.L/I	nìlé	tè'lé	káà nà-sì'lé	kìhlé
1PL	nírí	tè'rí	káà nà-sì'rí	kìhrí
2PL	nìró	tè'ró	káà nà-sì'ró	kìhró
1&2PL	nínzínzá / nínzá	tè'nzínzá / tè'nzá	káà nà-sì'nzínzá / káà nà-sì'nzá	kìhnzínzá / kìhnzá
3PL	(nìn dùgú)	(tè'n dùgú)	(káà nà-sì'n dùgú)	(kìhn dùgú)
3PL.L/I	nìré	tè're	káà nà-sì're	kìhré

	Group 6a: hùùnù 'thigh'	Group 6b: sìínù 'horn, antenna'	Group 6c: sùùnì 'younger in-law'	Group 7: dìgnù 'liver'
1SG	hùùnì	sìínì	sùùnì	dìgnì
2SG	hùùm	sìím	sùùm	dìgním
1&2SG	hùùná	sìíná	sùùná	dìgná
3SG	hùùndú	sìínndú	sùùndú	dìgìndú
3SG.L/I	hùùlé	sìínlé	sùùlé	dìglé
1PL	hùùrí	sìírí	sùùrí	dìgrí
2PL	hùùró	sìíró	sùùró	dìgró
1&2PL	hùùnzínzá / hùùnzá	sìínzínzá / sìínzá	sùùnzínzá / sùùnzá	dìgìnzínzá/ dìgìnzá
3PL	(hùùn dùgú)	(sìín dùgú)	(sùùn dùgú)	(dìgìn dùgú)
3PL.L/I	hùùré	sìíré	sùùré	dìgré

	Group 8a: fààzí 'member of fààzàrà' (see Glossary)	Group 8b: ?ázi 'member of ?àzgarà' (see Glossary)	Group 8c: fâhzi 'member of fâhzàrà' (see Glossary)	Idiosyncratic: dwá' 'belly'
1SG	fààzí	?ázi	fâhzi	dwí'
2SG	fààzám	?ázám	fâhzám	dò?óm
1&2SG	fààzìná	?ázìná	fâhzìná	dò'ná
3SG	fààzirú	?ázirú	fâhzirú	dò'rú
3SG.L/I	fààzé / fààzilé	?ázé / ?ázilé	fâhzé / fâhzilé	dwéy'
1PL	fààzirí	?ázirí	fâhzirí	dò'rí
2PL	fààziró	?áziró	fâhziró	dò'ró
1&2PL	fààzìnzá	?ázìnzá	fâhzìnzá	dò'zìnzá
3PL	(fààzi dùgú)	(?ázi dùgú)	(fâhzi dùgú)	(dò' dùgú)
3PL.L/I	fààzìré	?ázìré	fâhzìré	dò're

	Idiosyncratic: kwáá 'neck, voice'	Idiosyncratic: kyáá-rìnná 'paternal aunt'	Idiosyncratic: márnà 'eldest sibling'	Idiosyncratic: 'màrà 'friend'
1SG	kwíí	kyáá-rìnní	mární	'márí
2SG	kũm	kyáá-rìnm	—	'máram
1&2SG	kùunná	kyáá-rìnná	—	—
3SG	kùurrú	kyáá-rìnnú	—	'márdú
3SG.L/I	kùùlé	kyáá-rìllé	—	—
1PL	kùurí	kyáá-rìnrí	—	—
2PL	kùuró	kyáá-rìnró	—	—
1&2PL	kùùzìnzá	kyáá-rìnzìnzá / kyáá-rìnnzá	—	—
3PL	(kùù dùgú)	(kyáá-rìnn dùgú)	(márn) dùgú)	('már dùgú)
3PL.L/I	kùùré	kyáá-rìrré	—	—

	Idiosyncratic: náábà 'colleague'	Idiosyncratic: nánà 'maternal uncle'	Idiosyncratic: nà-púrà 'navel'	Idiosyncratic: nà-rìmnú 'tongue'
1SG	náání	nánà	nà-púrí	nà-rìmní
2SG	náám	nánám	nà-púram	nà-rìmním
1&2SG	—	nánà	—	nà-rìmná
3SG	náárú	nánú	nà-púrdú	nà-rìmrú
3SG.L/I	náále	nánè / nále	—	nà-rìmlé
1PL	—	nánrì	nà-púrí	nà-rìmrí
2PL	—	nánrò	nà-púró	nà-rìmró
1&2PL	—	nánzìnzá / nánzá	—	nà-rìmnìzìnzá
3PL	(nááb) dùgú)	(nán' dùgú)	(nà-púr dùgú)	(nà-rìmn) dùgú)
3PL.L/I	—	nánrè	nà-púré	nà-rìmré

	Idiosyncratic: páá 'father'	Idiosyncratic: páá-ná-rìnná 'paternal uncle'	Idiosyncratic: páà vǎà 'husband'	Idiosyncratic: syáh 'hand'
1SG	páy	páá-rìnní	páà vǎy	síh
2SG	pám	páá-rìnm	páà vǎm	sáhm
1&2SG	pááná	páá-rìnná	páà vǎnná	séhná
3SG	páàrú	páá-rìnnú	páà vǎàrú	sêhrú
3SG.L/I	páy	páá-rìlé	páà vǎy / páà vǎalé	séhlé
1PL	páárí	páá-rìrírí	páà vǎàrírí	séhrírí
2PL	pááró	páá-rìró	páà vǎàró	séhró
1&2PL	páázínzá	páá-rìnzínzá / páá-rìnzá	páà vǎàzínzá	séhzínzá
3PL	(páà dùgú)	(páá-rìnn dùgú)	(páà vǎà dùgú)	(sêh dùgú)
3PL.L/I	pááré	páá-rìré	páà vǎàré	séhré

	Idiosyncratic: túù 'mother'	Idiosyncratic: wǎà 'nose'
1SG	tíí	wíí / húúnní
2SG	túm	húúnm
1&2SG	kyááná	húúnná
3SG	túùrú	húúnrú
3SG.L/I	kyéé	húúnlé
1PL	kyáárí	húúnrírí
2PL	kyááró	húúnró
1&2PL	kyáázínzá	húúnzínzá / húúnnzá / wǎnzá
3PL	(túù dùgú)	(húù dùgú)
3PL.L/I	kyááré	húúré

Appendix 2: Verb conjugations

This appendix contains conjugations of the six tonally contrastive verb classes (7.3.2.2.1). Paradigms are given for tenses which are signalled tonally (7.4): Perfective, Perfect, Pluperfect, Imperfective, Future, Optative and, in the case of the verb *vè* ‘go,’ Realis Future (7.3.3.1.2). Since morphology is different for intransitive and transitive verbs (7.3.2.1), and since tone is mapped on verb stems based on their CV shape (7.3.2.2.3), verbs which illustrate these distinctions are shown when they are found in the data.

The order of the conjugations given in this appendix is as follows:

tonal class	transitivity	CV shape of stem	example verb
1	intransitive	C(C)VX C(C)V	yáá ‘move away’ gé ‘get lost’
	transitive	C(C)VX C(C)V	ḃéé ‘bite’ pá ‘make, do’
2	intransitive	C(C)VX	sùù ‘lie down’
3	intransitive	C(C)V	vè ‘go’
4	intransitive	C(C)VX	hèè ‘climb, go up’
	transitive	C(C)VX	gù ‘answer, accept, admit’
5	intransitive	C(C)VX	yââ ‘finish (intr.)’ (derived)
	transitive	C(C)VX	yââ ‘finish (tr.)’
6	intransitive	C(C)VX.CV	?dògí ‘drag one’s feet’ (derived)
	transitive	C(C)VVC	yâân ‘cause to finish (tr.)’
		C(C)V.CVC	dògón ‘cause to drink (tr.)’
		C(C)VX.CV	?dògí ‘set crawling’
		C(C)VX.CV.CV C(C)VX.CV.CV.CV	?dògìní ‘cause to set crawling’ ?dògìnrí ‘cause to set crawling repeatedly / cause repeatedly to set crawling’

Verb class 1, intransitive, C(C)VX: **yáá** ‘move away’

Perfective

1SG	mì yáá
2SG	mù yáá
1&2SG	nà yáá
3SG	yáá
3SG.LOG	lè yáá
1PL	rì yáá
2PL	rò yáá
1&2PL	nà yáázi
3PL	yáázi
3PL.LOG	rè yáázi

Perfect

1SG	mì yáàní
2SG	mù yáám
1&2SG	nà yáàná
3SG	yáàlé
3SG.LOG	lè yáàlé
1PL	rì yáàrí
2PL	rò yáàró
1&2PL	nà yáàzìnzá
3PL	yáàzìré
3PL.LOG	rè yáàzìré

Pluperfect

1SG	mì yáání
2SG	mù yáám
1&2SG	nà yááná
3SG	yáálé
3SG.LOG	lè yáálé
1PL	rì yáàrí
2PL	rò yáàró
1&2PL	nà yáázìnzá
3PL	yáázìré
3PL.LOG	rè yáázìré

Imperfective

1SG	mì yáà
2SG	mù yáà
1&2SG	nà yáà
3SG	?à yáà
3SG.LOG	lè yáà
1PL	rì yáà
2PL	rò yáà
1&2PL	nà yáàzi
3PL	?à yáàzi
3PL.LOG	rè yáàzi

Future

1SG	mìí yáá
2SG	mùú yáá
1&2SG	nàá yáá
3SG	?àá yáá
3SG.LOG	lèé yáá
1PL	rìí yáá
2PL	ròó yáá
1&2PL	nàá yáázi
3PL	?àá yáázi
3PL.LOG	rèé yáázi

Optative

1SG	mí yáá
2SG	mù yáá
1&2SG	ná yáá
3SG	má yáá
3SG.LOG	má yáá
1PL	rí yáá
2PL	ró yáá
1&2PL	ná yáázi
3PL	má yáázi
3PL.LOG	má yáázi

Verb class 1, intransitive, C(C)V: **gé** ‘get lost’

Perfective

1SG	mì	gé
2SG	mù	gé
1&2SG	nà	gé
3SG		gé
3SG.LOG	lè	gé
1PL	rì	gé
2PL	rò	gé
1&2PL	nà	gézí
3PL		gézí
3PL.LOG	rè	gézí

Perfect

1SG	mì	gènì
2SG	mù	gènèm
1&2SG	nà	gènà
3SG		gélè
3SG.LOG	lè	gélè
1PL	rì	gèrì
2PL	rò	gèrò
1&2PL	nà	gézínzà
3PL		gézírè
3PL.LOG	rè	gézírè

Pluperfect

1SG	mì	géní
2SG	mù	géném
1&2SG	nà	génà
3SG		gélé
3SG.LOG	lè	gélé
1PL	rì	gérí
2PL	rò	géro
1&2PL	nà	gézínzá
3PL		gézíré
3PL.LOG	rè	gézíré

Imperfective

1SG	mì	gélà
2SG	mù	gélà
1&2SG	nà	gélà
3SG	?à	gélà
3SG.LOG	lè	gélà
1PL	rì	gélà
2PL	rò	gélà
1&2PL	nà	gézilà
3PL	?à	gézilà
3PL.LOG	rè	gézilà

Future

1SG	mìí	gé
2SG	mùù	gé
1&2SG	nàà	gé
3SG	?àá	gé
3SG.LOG	lèé	gé
1PL	rìí	gé
2PL	ròó	gé
1&2PL	nàà	gézí
3PL	?àá	gézí
3PL.LOG	rèé	gézí

Optative

1SG	mí	gé
2SG	mù	gé
1&2SG	nà	gé
3SG	má	gé
3SG.LOG	má	gé
1PL	rí	gé
2PL	ró	gé
1&2PL	nà	gézí
3PL	má	gézí
3PL.LOG	má	gézí

Verb class 1, transitive, C(C)VX: **béé** ‘bite’

Perfective

1SG	m̀	béé	ʔígà
2SG	m̀	béé	ʔígà
1&2SG	nà	béé	ʔígà
3SG		béé	ʔígà
3SG.LOG	lè	béé	ʔígà
1PL	rì	béé	ʔígà
2PL	rò	béé	ʔígà
1&2PL	nà	béézí	ʔígà
3PL		béézí	ʔígà
3PL.LOG	rè	béézí	ʔígà

Perfect

1SG	m̀	béérì	ʔígà
2SG	m̀	béérì	ʔígà
1&2SG	nà	béérì	ʔígà
3SG		béérì	ʔígà
3SG.LOG	lè	béérì	ʔígà
1PL	rì	béérì	ʔígà
2PL	rò	béérì	ʔígà
1&2PL	nà	béézírì	ʔígà
3PL		béézírì	ʔígà
3PL.LOG	rè	béézírì	ʔígà

Pluperfect

1SG	m̀	béérì	ʔígà
2SG	m̀	béérì	ʔígà
1&2SG	nà	béérì	ʔígà
3SG		béérì	ʔígà
3SG.LOG	lè	béérì	ʔígà
1PL	rì	béérì	ʔígà
2PL	rò	béérì	ʔígà
1&2PL	nà	béézírì	ʔígà
3PL		béézírì	ʔígà
3PL.LOG	rè	béézírì	ʔígà

Imperfective

1SG	m̀	bèè	ʔígà
2SG	m̀	bèè	ʔígà
1&2SG	nà	bèè	ʔígà
3SG	ʔà	bèè	ʔígà
3SG.LOG	lè	bèè	ʔígà
1PL	rì	bèè	ʔígà
2PL	rò	bèè	ʔígà
1&2PL	nà	bèèzí	ʔígà
3PL	ʔà	bèèzí	ʔígà
3PL.LOG	rè	bèèzí	ʔígà

Future

1SG	m̀	béé	ʔígà
2SG	m̀	béé	ʔígà
1&2SG	nà	béé	ʔígà
3SG	ʔà	béé	ʔígà
3SG.LOG	lè	béé	ʔígà
1PL	rì	béé	ʔígà
2PL	rò	béé	ʔígà
1&2PL	nà	béézí	ʔígà
3PL	ʔà	béézí	ʔígà
3PL.LOG	rè	béézí	ʔígà

Optative

1SG	m̀	béé	ʔígà
2SG	m̀	béé	ʔígà
1&2SG	nà	béé	ʔígà
3SG	má	béé	ʔígà
3SG.LOG	má	béé	ʔígà
1PL	rì	béé	ʔígà
2PL	rò	béé	ʔígà
1&2PL	nà	béézí	ʔígà
3PL	má	béézí	ʔígà
3PL.LOG	má	béézí	ʔígà

Verb class 1, transitive, C(C)V: **pá** ‘make, do’

Perfective

1SG	mì	pá	ʔígà
2SG	mù	pá	ʔígà
1&2SG	nà	pá	ʔígà
3SG		pá	ʔígà
3SG.LOG	lè	pá	ʔígà
1PL	rì	pá	ʔígà
2PL	rò	pá	ʔígà
1&2PL	nà	pází	ʔígà
3PL		pází	ʔígà
3PL.LOG	rè	pází	ʔígà

Perfect

1SG	mì	pàrì	ʔígà
2SG	mù	pàrì	ʔígà
1&2SG	nà	pàrì	ʔígà
3SG		pàrì	ʔígà
3SG.LOG	lè	pàrì	ʔígà
1PL	rì	pàrì	ʔígà
2PL	rò	pàrì	ʔígà
1&2PL	nà	pázìrì	ʔígà
3PL		pázìrì	ʔígà
3PL.LOG	rè	pázìrì	ʔígà

Pluperfect

1SG	mì	pàrì	ʔígà
2SG	mù	pàrì	ʔígà
1&2SG	nà	pàrì	ʔígà
3SG		pàrì	ʔígà
3SG.LOG	lè	pàrì	ʔígà
1PL	rì	pàrì	ʔígà
2PL	rò	pàrì	ʔígà
1&2PL	nà	pázìrì	ʔígà
3PL		pázìrì	ʔígà
3PL.LOG	rè	pázìrì	ʔígà

Imperfective

1SG	mì	pàg	ʔígà
2SG	mù	pàg	ʔígà
1&2SG	nà	pàg	ʔígà
3SG	ʔà	pàg	ʔígà
3SG.LOG	lè	pàg	ʔígà
1PL	rì	pàg	ʔígà
2PL	rò	pàg	ʔígà
1&2PL	nà	pàgzì	ʔígà
3PL	ʔà	pàgzì	ʔígà
3PL.LOG	rè	pàgzì	ʔígà

Future

1SG	mìí	pá	ʔígà
2SG	mùú	pá	ʔígà
1&2SG	nàá	pá	ʔígà
3SG	ʔàá	pá	ʔígà
3SG.LOG	lèé	pá	ʔígà
1PL	rìí	pá	ʔígà
2PL	ròó	pá	ʔígà
1&2PL	nàá	pází	ʔígà
3PL	ʔàá	pází	ʔígà
3PL.LOG	rèé	pází	ʔígà

Optative

1SG	mí	pá	ʔígà
2SG	mú	pá	ʔígà
1&2SG	ná	pá	ʔígà
3SG	má	pá	ʔígà
3SG.LOG	má	pá	ʔígà
1PL	rí	pá	ʔígà
2PL	ró	pá	ʔígà
1&2PL	ná	pází	ʔígà
3PL	má	pází	ʔígà
3PL.LOG	má	pází	ʔígà

Verb class 2, intransitive, C(C)VX: **sùù** ‘lie down’

Perfective

1SG	mì	sùù
2SG	mù	sùù
1&2SG	nà	sùù
3SG		sùù
3SG.LOG	lè	sùù
1PL	rì	sùù
2PL	rò	sùù
1&2PL	nà	sùùzì
3PL		sùùzì
3PL.LOG	rè	sùùzì

Perfect

1SG	mì	sùùní
2SG	mù	sùùm
1&2SG	nà	sùùná
3SG		sùùlé
3SG.LOG	lè	sùùlé
1PL	rì	sùùrí
2PL	rò	sùùró
1&2PL	nà	sùùzìnzá
3PL		sùùzìré
3PL.LOG	rè	sùùzìré

Pluperfect

1SG	mì	sùùní
2SG	mù	sùùm
1&2SG	nà	sùùná
3SG	?à	sùùlé
3SG.LOG	lè	sùùlé
1PL	rì	sùùrí
2PL	rò	sùùró
1&2PL	nà	sùùzìnzá
3PL	?à	sùùzìré
3PL.LOG	rè	sùùzìré

Imperfective

1SG	mì	sùngà
2SG	mù	sùngà
1&2SG	nà	sùngà
3SG	?à	sùngà
3SG.LOG	lè	sùngà
1PL	rì	sùngà
2PL	rò	sùngà
1&2PL	nà	sùngàzìrà
3PL	?à	sùngàzìrà
3PL.LOG	rè	sùngàzìrà

Future

1SG	mìí	sùú
2SG	mùú	sùú
1&2SG	nàá	sùú
3SG	?àá	sùú
3SG.LOG	lèé	sùú
1PL	rìí	sùú
2PL	ròó	sùú
1&2PL	nàá	sùúzì
3PL	?àá	sùúzì
3PL.LOG	rèé	sùúzì

Optative

1SG	mí	sùú
2SG	mù	sùú
1&2SG	ná	sùú
3SG	má	sùú
3SG.LOG	má	sùú
1PL	rí	sùú
2PL	ró	sùú
1&2PL	ná	sùúzì
3PL	má	sùúzì
3PL.LOG	má	sùúzì

Verb class 3, intransitive, C(C)V: **vè** ‘go’

Perfective

1SG	mì	vè
2SG	mù	vè
1&2SG	nà	vè
3SG		vè
3SG.LOG	lè	vè
1PL	rì	vè
2PL	rò	vè
1&2PL	nà	vèzí
3PL		vèzí
3PL.LOG	rè	vèzí

Perfect and Pluperfect

1SG	mì	vìní
2SG	mù	vùnùm / vùm
1&2SG	nà	vàná
3SG		vèlé
3SG.LOG	lè	vèlé
1PL	rì	vìrí
2PL	rò	vòró
1&2PL	nà	vànzyá
3PL		vèzìré
3PL.LOG	rè	vèzìré

Imperfective

1SG	mì	vágà
2SG	mù	vágà
1&2SG	nà	vágà
3SG	?à	vágà
3SG.LOG	lè	vágà
1PL	rì	vágà
2PL	rò	vágà
1&2PL	nà	vâgzí
3PL	?à	vâgzí
3PL.LOG	rè	vâgzí

Realis Future

1SG	mì	víní
2SG	mù	vúnùm / vùm
1&2SG	nà	váná
3SG	?à	vélé
3SG.LOG	lè	vélé
1PL	rì	vìrí
2PL	rò	vóró
1&2PL	nà	vánzyá
3PL	?à	vézìré
3PL.LOG	rè	vézìré

Future

1SG	mìí	víní
2SG	mùú	vùnùm / vùm
1&2SG	nàá	váná
3SG	?àá	vélé
3SG.LOG	lèé	vélé
1PL	rìí	vìrí
2PL	ròó	vóró
1&2PL	nàá	vànzyá
3PL	?àá	vézìré
3PL.LOG	rèé	vézìré

Optative

1SG	mí	víní
2SG	mú	vùnùm / vùm
1&2SG	ná	váná
3SG	má	vélé
3SG.LOG	má	vélé
1PL	rí	vìrí
2PL	ró	vóró
1&2PL	ná	vànzyá
3PL	má	vèzìré
3PL.LOG	má	vèzìré

Verb class 4, intransitive, C(C)VX: **hèè** ‘climb, go up’

Perfective

1SG	mì	hèè
2SG	mù	hèè
1&2SG	nà	hèè
3SG		hèè
3SG.LOG	lè	hèè
1PL	rì	hèè
2PL	rò	hèè
1&2PL	nà	hèèzí
3PL		hèèzí
3PL.LOG	rè	hèèzí

Perfect

1SG	mì	hèèní
2SG	mù	hèém
1&2SG	nà	hèèná
3SG		hèèlé
3SG.LOG	lè	hèèlé
1PL	rì	hèèrí
2PL	rò	hèèró
1&2PL	nà	hèèzínzá
3PL		hèèzìré
3PL.LOG	rè	hèèzìré

Pluperfect

1SG	mì	hèèní
2SG	mù	hèém
1&2SG	nà	hèèná
3SG		hèèlé
3SG.LOG	lè	hèèlé
1PL	rì	hèèrí
2PL	rò	hèèró
1&2PL	nà	hèèzínzá
3PL		hèèzìré
3PL.LOG	rè	hèèzìré

Imperfective

1SG	mì	héèrà
2SG	mù	héèrà
1&2SG	nà	héèrà
3SG	?à	héèrà
3SG.LOG	lè	héèrà
1PL	rì	héèrà
2PL	rò	héèrà
1&2PL	nà	héèzìrà
3PL	?à	héèzìrà
3PL.LOG	rè	héèzìrà

Future

1SG	mìí	hèè
2SG	mùú	hèè
1&2SG	nàá	hèè
3SG	?àá	hèè
3SG.LOG	lèé	hèè
1PL	rìí	hèè
2PL	ròó	hèè
1&2PL	nàá	hèèzí
3PL	?àá	hèèzí
3PL.LOG	rèé	hèèzí

Optative

1SG	mí	hèè
2SG	mú	hèè
1&2SG	ná	hèè
3SG	má	hèè
3SG.LOG	má	hèè
1PL	rí	hèè
2PL	ró	hèè
1&2PL	ná	hèèzí
3PL	má	hèèzí
3PL.LOG	má	hèèzí

Verb class 4, transitive, C(C)VX: **gù** ‘answer, accept, admit’

Perfective

1SG	mì	gù	?ígà
2SG	mù	gù	?ígà
1&2SG	nà	gù	?ígà
3SG		gù	?ígà
3SG.LOG	lè	gù	?ígà
1PL	rì	gù	?ígà
2PL	rò	gù	?ígà
1&2PL	nà	gùzì	?ígà
3PL		gùzì	?ígà
3PL.LOG	rè	gùzì	?ígà

Perfect

1SG	mì	gùrì	?ígà
2SG	mù	gùrì	?ígà
1&2SG	nà	gùrì	?ígà
3SG		gùrì	?ígà
3SG.LOG	lè	gùrì	?ígà
1PL	rì	gùrì	?ígà
2PL	rò	gùrì	?ígà
1&2PL	nà	gùzìrì	?ígà
3PL		gùzìrì	?ígà
3PL.LOG	rè	gùzìrì	?ígà

Pluperfect

1SG	mì	gùrì	?ígà
2SG	mù	gùrì	?ígà
1&2SG	nà	gùrì	?ígà
3SG		gùrì	?ígà
3SG.LOG	lè	gùrì	?ígà
1PL	rì	gùrì	?ígà
2PL	rò	gùrì	?ígà
1&2PL	nà	gùzìrì	?ígà
3PL		gùzìrì	?ígà
3PL.LOG	rè	gùzìrì	?ígà

Imperfective

1SG	mì	gù	?ígà
2SG	mù	gù	?ígà
1&2SG	nà	gù	?ígà
3SG	?à	gù	?ígà
3SG.LOG	lè	gù	?ígà
1PL	rì	gù	?ígà
2PL	rò	gù	?ígà
1&2PL	nà	gùzì	?ígà
3PL	?à	gùzì	?ígà
3PL.LOG	rè	gùzì	?ígà

Future

1SG	mìj	gù	?ígà
2SG	mùj	gù	?ígà
1&2SG	nàj	gù	?ígà
3SG	?àá	gù	?ígà
3SG.LOG	lèé	gù	?ígà
1PL	rìi	gù	?ígà
2PL	ròó	gù	?ígà
1&2PL	nàj	gùzì	?ígà
3PL	?àá	gùzì	?ígà
3PL.LOG	rèé	gùzì	?ígà

Optative

1SG	mí	gù	?ígà
2SG	mù	gù	?ígà
1&2SG	ná	gù	?ígà
3SG	má	gù	?ígà
3SG.LOG	má	gù	?ígà
1PL	rí	gù	?ígà
2PL	ró	gù	?ígà
1&2PL	ná	gùzì	?ígà
3PL	má	gùzì	?ígà
3PL.LOG	má	gùzì	?ígà

Verb class 5, intransitive, C(C)VX: **yàà** ‘finish (intr.)’ (derived from **yàà** ‘finish (tr.)’; see 7.3.2.1.2)

Perfective

(uses transitive counterpart; cf. 7.3.2.1.2)

Perfect

1SG	mì yàánì
2SG	mù yàám
1&2SG	nà yàánà
3SG	yàále
3SG.LOG	lè yàále
1PL	rì yàári
2PL	rò yààró
1&2PL	nà yààzínà
3PL	yààzìrè
3PL.LOG	rè yààzìrè

Pluperfect

1SG	mì yàánì
2SG	mù yàám
1&2SG	nà yàánà
3SG	yàále
3SG.LOG	lè yàále
1PL	rì yàári
2PL	rò yààró
1&2PL	nà yààzínà
3PL	yààzìrè
3PL.LOG	rè yààzìrè

Imperfective

(uses transitive counterpart; cf. 7.3.2.1.2)

Future

1SG	mì yàánì
2SG	mù yàám
1&2SG	nà yàánà
3SG	ʔàá yààlé
3SG.LOG	lèé yààlé
1PL	rì yàári
2PL	rò yààró
1&2PL	nà yààzínà
3PL	ʔàá yààzìrè
3PL.LOG	rèé yààzìrè

Optative

1SG	mí yàánì
2SG	mù yàám
1&2SG	nà yàánà
3SG	má yààlé
3SG.LOG	má yààlé
1PL	rì yàári
2PL	rò yààró
1&2PL	nà yààzínà
3PL	má yààzìrè
3PL.LOG	má yààzìrè

Verb class 5, transitive, C(C)VX: **yàà** ‘finish (tr.)’

Perfective

1SG	mì	yàà	?ígà
2SG	mù	yàà	?ígà
1&2SG	nà	yàà	?ígà
3SG		yàà	?ígà
3SG.LOG	lè	yàà	?ígà
1PL	rì	yàà	?ígà
2PL	rò	yàà	?ígà
1&2PL	nà	yààzí	?ígà
3PL		yààzí	?ígà
3PL.LOG	rè	yààzí	?ígà

Perfect

1SG	mì	yàáàrì	?ígà
2SG	mù	yàáàrì	?ígà
1&2SG	nà	yàáàrì	?ígà
3SG		yàáàrì	?ígà
3SG.LOG	lè	yàáàrì	?ígà
1PL	rì	yàáàrì	?ígà
2PL	rò	yàáàrì	?ígà
1&2PL	nà	yààzíàrì	?ígà
3PL		yààzíàrì	?ígà
3PL.LOG	rè	yààzíàrì	?ígà

Pluperfect

1SG	mì	yàáàrì	?ígà
2SG	mù	yàáàrì	?ígà
1&2SG	nà	yàáàrì	?ígà
3SG		yàáàrì	?ígà
3SG.LOG	lè	yàáàrì	?ígà
1PL	rì	yàáàrì	?ígà
2PL	rò	yàáàrì	?ígà
1&2PL	nà	yààzíàrì	?ígà
3PL		yààzíàrì	?ígà
3PL.LOG	rè	yààzíàrì	?ígà

Imperfective

1SG	mì	yáà	?ígà
2SG	mù	yáà	?ígà
1&2SG	nà	yáà	?ígà
3SG	?à	yáà	?ígà
3SG.LOG	lè	yáà	?ígà
1PL	rì	yáà	?ígà
2PL	rò	yáà	?ígà
1&2PL	nà	yáàzí	?ígà
3PL	?à	yáàzí	?ígà
3PL.LOG	rè	yáàzí	?ígà

Future

1SG	mìí	yàá	?ígà
2SG	mùú	yàá	?ígà
1&2SG	nàá	yàá	?ígà
3SG	?àá	yàá	?ígà
3SG.LOG	lèé	yàá	?ígà
1PL	rìí	yàá	?ígà
2PL	ròó	yàá	?ígà
1&2PL	nàá	yààzí	?ígà
3PL	?àá	yààzí	?ígà
3PL.LOG	rèé	yààzí	?ígà

Optative

1SG	mí	yàá	?ígà
2SG	mú	yàá	?ígà
1&2SG	ná	yàá	?ígà
3SG	má	yàá	?ígà
3SG.LOG	má	yàá	?ígà
1PL	rí	yàá	?ígà
2PL	ró	yàá	?ígà
1&2PL	ná	yààzí	?ígà
3PL	má	yààzí	?ígà
3PL.LOG	má	yààzí	?ígà

Verb class 5, intransitive, C(C)VX: **ʔòògí** ‘drag one’s feet’ (derived from **ʔòògí** ‘set crawling’; see 7.3.2.1.2)

Perfective

(uses transitive counterpart; cf. 7.3.2.1.2)

Perfect

1SG	mì	ʔòògínì
2SG	mù	ʔòògínìm
1&2SG	nà	ʔòògínà
3SG		ʔòògìlè
3SG.LOG	lè	ʔòògìlè
1PL	rì	ʔòògírì
2PL	rò	ʔòògírò
1&2PL	nà	ʔòògìzínzà
3PL		ʔòògìzìrè
3PL.LOG	rè	ʔòògìzìrè

Pluperfect

1SG	mì	ʔòògínì
2SG	mù	ʔòògínìm
1&2SG	nà	ʔòògínà
3SG		ʔòògìlè
3SG.LOG	lè	ʔòògìlè
1PL	rì	ʔòògírì
2PL	rò	ʔòògírò
1&2PL	nà	ʔòògìzínzà
3PL		ʔòògìzìrè
3PL.LOG	rè	ʔòògìzìrè

Imperfective

(uses transitive counterpart; cf. 7.3.2.1.2)

Future

1SG	mìí	ʔòògíní
2SG	mùú	ʔòògíním
1&2SG	nàá	ʔòògíná
3SG	ʔàá	ʔòògìlé
3SG.LOG	lèé	ʔòògìlé
1PL	rìí	ʔòògírì
2PL	ròó	ʔòògírò
1&2PL	nàá	ʔòògìzínzá
3PL	ʔàá	ʔòògìzìré
3PL.LOG	rèé	ʔòògìzìré

Optative

1SG	mí	ʔòògíní
2SG	mú	ʔòògíním
1&2SG	ná	ʔòògíná
3SG	má	ʔòògìlé
3SG.LOG	má	ʔòògìlé
1PL	rí	ʔòògírì
2PL	ró	ʔòògírò
1&2PL	ná	ʔòògìzínzá
3PL	má	ʔòògìzìré
3PL.LOG	má	ʔòògìzìré

Verb class 6, transitive, C(C)VXC: **yààń** ‘cause to finish (tr.)’

Perfective

1SG	mì	yààń	ʔígà
2SG	mù	yààń	ʔígà
1&2SG	nà	yààń	ʔígà
3SG		yààń	ʔígà
3SG.LOG	lè	yààń	ʔígà
1PL	rì	yààń	ʔígà
2PL	rò	yààń	ʔígà
1&2PL	nà	yààńzí	ʔígà
3PL		yààńzí	ʔígà
3PL.LOG	rè	yààńzí	ʔígà

Perfect

1SG	mì	yààńńì	ʔígà
2SG	mù	yààńńì	ʔígà
1&2SG	nà	yààńńì	ʔígà
3SG		yààńńì	ʔígà
3SG.LOG	lè	yààńńì	ʔígà
1PL	rì	yààńńì	ʔígà
2PL	rò	yààńńì	ʔígà
1&2PL	nà	yààńńìrì	ʔígà
3PL		yààńńìrì	ʔígà
3PL.LOG	rè	yààńńìrì	ʔígà

Pluperfect

1SG	mì	yààńńì	ʔígà
2SG	mù	yààńńì	ʔígà
1&2SG	nà	yààńńì	ʔígà
3SG		yààńńì	ʔígà
3SG.LOG	lè	yààńńì	ʔígà
1PL	rì	yààńńì	ʔígà
2PL	rò	yààńńì	ʔígà
1&2PL	nà	yààńńìrì	ʔígà
3PL		yààńńìrì	ʔígà
3PL.LOG	rè	yààńńìrì	ʔígà

Imperfective

1SG	mì	yááń	ʔígà
2SG	mù	yááń	ʔígà
1&2SG	nà	yááń	ʔígà
3SG	ʔà	yááń	ʔígà
3SG.LOG	lè	yááń	ʔígà
1PL	rì	yááń	ʔígà
2PL	rò	yááń	ʔígà
1&2PL	nà	yááńzí	ʔígà
3PL	ʔà	yááńzí	ʔígà
3PL.LOG	rè	yááńzí	ʔígà

Future

1SG	mìí	yààń	ʔígà
2SG	mùú	yààń	ʔígà
1&2SG	nàá	yààń	ʔígà
3SG	ʔàá	yààń	ʔígà
3SG.LOG	lèé	yààń	ʔígà
1PL	rìí	yààń	ʔígà
2PL	ròó	yààń	ʔígà
1&2PL	nàá	yààńzí	ʔígà
3PL	ʔàá	yààńzí	ʔígà
3PL.LOG	rèé	yààńzí	ʔígà

Optative

1SG	mí	yààń	ʔígà
2SG	mú	yààń	ʔígà
1&2SG	ná	yààń	ʔígà
3SG	má	yààń	ʔígà
3SG.LOG	má	yààń	ʔígà
1PL	rí	yààń	ʔígà
2PL	ró	yààń	ʔígà
1&2PL	ná	yààńzí	ʔígà
3PL	má	yààńzí	ʔígà
3PL.LOG	má	yààńzí	ʔígà

Verb class 6, transitive, C(C)V.CVC: **dògón** ‘cause to drink (tr.)’

Perfective

1SG	mì	dògón	ʔígà
2SG	mù	dògón	ʔígà
1&2SG	nà	dògón	ʔígà
3SG		dògón	ʔígà
3SG.LOG	lè	dògón	ʔígà
1PL	rì	dògón	ʔígà
2PL	rò	dògón	ʔígà
1&2PL	nà	dògònzí	ʔígà
3PL		dògònzí	ʔígà
3PL.LOG	rè	dògònzí	ʔígà

Perfect

1SG	mì	dògónnì	ʔígà
2SG	mù	dògónnì	ʔígà
1&2SG	nà	dògónnì	ʔígà
3SG		dògónnì	ʔígà
3SG.LOG	lè	dògónnì	ʔígà
1PL	rì	dògónnì	ʔígà
2PL	rò	dògónnì	ʔígà
1&2PL	nà	dògònzí	ʔígà
3PL		dògònzí	ʔígà
3PL.LOG	rè	dògònzí	ʔígà

Pluperfect

1SG	mì	dògónnì	ʔígà
2SG	mù	dògónnì	ʔígà
1&2SG	nà	dògónnì	ʔígà
3SG		dògónnì	ʔígà
3SG.LOG	lè	dògónnì	ʔígà
1PL	rì	dògónnì	ʔígà
2PL	rò	dògónnì	ʔígà
1&2PL	nà	dògònzí	ʔígà
3PL		dògònzí	ʔígà
3PL.LOG	rè	dògònzí	ʔígà

Imperfective

1SG	mì	dógôn	ʔígà
2SG	mù	dógôn	ʔígà
1&2SG	nà	dógôn	ʔígà
3SG	ʔà	dógôn	ʔígà
3SG.LOG	lè	dógôn	ʔígà
1PL	rì	dógôn	ʔígà
2PL	rò	dógôn	ʔígà
1&2PL	nà	dógònzí	ʔígà
3PL	ʔà	dógònzí	ʔígà
3PL.LOG	rè	dógònzí	ʔígà

Future

1SG	mìí	dògón	ʔígà
2SG	mùú	dògón	ʔígà
1&2SG	nàá	dògón	ʔígà
3SG	ʔàá	dògón	ʔígà
3SG.LOG	lèé	dògón	ʔígà
1PL	rìí	dògón	ʔígà
2PL	ròó	dògón	ʔígà
1&2PL	nàá	dògònzí	ʔígà
3PL	ʔàá	dògònzí	ʔígà
3PL.LOG	rèé	dògònzí	ʔígà

Optative

1SG	mí	dògón	ʔígà
2SG	mú	dògón	ʔígà
1&2SG	ná	dògón	ʔígà
3SG	má	dògón	ʔígà
3SG.LOG	má	dògón	ʔígà
1PL	rí	dògón	ʔígà
2PL	ró	dògón	ʔígà
1&2PL	ná	dògònzí	ʔígà
3PL	má	dògònzí	ʔígà
3PL.LOG	má	dògònzí	ʔígà

Verb class 6, transitive, C(C)VX.CV: ʔòògí ‘set crawling’

Perfective

1SG	mì	ʔòògí	ʔígà
2SG	mù	ʔòògí	ʔígà
1&2SG	nà	ʔòògí	ʔígà
3SG		ʔòògí	ʔígà
3SG.LOG	lè	ʔòògí	ʔígà
1PL	rì	ʔòògí	ʔígà
2PL	rò	ʔòògí	ʔígà
1&2PL	nà	ʔòògìzì	ʔígà
3PL		ʔòògìzì	ʔígà
3PL.LOG	rè	ʔòògìzì	ʔígà

Perfect

1SG	mì	ʔòògírì	ʔígà
2SG	mù	ʔòògírì	ʔígà
1&2SG	nà	ʔòògírì	ʔígà
3SG		ʔòògírì	ʔígà
3SG.LOG	lè	ʔòògírì	ʔígà
1PL	rì	ʔòògírì	ʔígà
2PL	rò	ʔòògírì	ʔígà
1&2PL	nà	ʔòògìzírì	ʔígà
3PL		ʔòògìzírì	ʔígà
3PL.LOG	rè	ʔòògìzírì	ʔígà

Pluperfect

1SG	mì	ʔòògírì	ʔígà
2SG	mù	ʔòògírì	ʔígà
1&2SG	nà	ʔòògírì	ʔígà
3SG		ʔòògírì	ʔígà
3SG.LOG	lè	ʔòògírì	ʔígà
1PL	rì	ʔòògírì	ʔígà
2PL	rò	ʔòògírì	ʔígà
1&2PL	nà	ʔòògìzírì	ʔígà
3PL		ʔòògìzírì	ʔígà
3PL.LOG	rè	ʔòògìzírì	ʔígà

Imperfective

1SG	mì	ʔóógì	ʔígà
2SG	mù	ʔóógì	ʔígà
1&2SG	nà	ʔóógì	ʔígà
3SG	ʔà	ʔóógì	ʔígà
3SG.LOG	lè	ʔóógì	ʔígà
1PL	rì	ʔóógì	ʔígà
2PL	rò	ʔóógì	ʔígà
1&2PL	nà	ʔóógìzì	ʔígà
3PL	ʔà	ʔóógìzì	ʔígà
3PL.LOG	rè	ʔóógìzì	ʔígà

Future

1SG	mìí	ʔòògí	ʔígà
2SG	mùú	ʔòògí	ʔígà
1&2SG	nàá	ʔòògí	ʔígà
3SG	ʔàá	ʔòògí	ʔígà
3SG.LOG	lèé	ʔòògí	ʔígà
1PL	rìí	ʔòògí	ʔígà
2PL	ròó	ʔòògí	ʔígà
1&2PL	nàá	ʔòògìzì	ʔígà
3PL	ʔàá	ʔòògìzì	ʔígà
3PL.LOG	rèé	ʔòògìzì	ʔígà

Optative

1SG	mí	ʔòògí	ʔígà
2SG	mú	ʔòògí	ʔígà
1&2SG	ná	ʔòògí	ʔígà
3SG	má	ʔòògí	ʔígà
3SG.LOG	má	ʔòògí	ʔígà
1PL	rí	ʔòògí	ʔígà
2PL	ró	ʔòògí	ʔígà
1&2PL	ná	ʔòògìzì	ʔígà
3PL	má	ʔòògìzì	ʔígà
3PL.LOG	má	ʔòògìzì	ʔígà

Verb class 6, transitive, C(C)VX.CV.CV: **ʔòògìní** ‘cause to set crawling’

Perfective

1SG	mì	ʔòògìní	ʔígà
2SG	mù	ʔòògìní	ʔígà
1&2SG	nà	ʔòògìní	ʔígà
3SG		ʔòògìní	ʔígà
3SG.LOG	lè	ʔòògìní	ʔígà
1PL	rì	ʔòògìní	ʔígà
2PL	rò	ʔòògìní	ʔígà
1&2PL	nà	ʔòògìnízì	ʔígà
3PL		ʔòògìnízì	ʔígà
3PL.LOG	rè	ʔòògìnízì	ʔígà

Perfect

1SG	mì	ʔòògìnírì	ʔígà
2SG	mù	ʔòògìnírì	ʔígà
1&2SG	nà	ʔòògìnírì	ʔígà
3SG		ʔòògìnírì	ʔígà
3SG.LOG	lè	ʔòògìnírì	ʔígà
1PL	rì	ʔòògìnírì	ʔígà
2PL	rò	ʔòògìnírì	ʔígà
1&2PL	nà	ʔòògìnízìrì	ʔígà
3PL		ʔòògìnízìrì	ʔígà
3PL.LOG	rè	ʔòògìnízìrì	ʔígà

Pluperfect

1SG	mì	ʔòògìnírì	ʔígà
2SG	mù	ʔòògìnírì	ʔígà
1&2SG	nà	ʔòògìnírì	ʔígà
3SG		ʔòògìnírì	ʔígà
3SG.LOG	lè	ʔòògìnírì	ʔígà
1PL	rì	ʔòògìnírì	ʔígà
2PL	rò	ʔòògìnírì	ʔígà
1&2PL	nà	ʔòògìnízìrì	ʔígà
3PL		ʔòògìnízìrì	ʔígà
3PL.LOG	rè	ʔòògìnízìrì	ʔígà

Imperfective

1SG	mì	ʔóógìní	ʔígà
2SG	mù	ʔóógìní	ʔígà
1&2SG	nà	ʔóógìní	ʔígà
3SG	ʔà	ʔóógìní	ʔígà
3SG.LOG	lè	ʔóógìní	ʔígà
1PL	rì	ʔóógìní	ʔígà
2PL	rò	ʔóógìní	ʔígà
1&2PL	nà	ʔóógìnízì	ʔígà
3PL	ʔà	ʔóógìnízì	ʔígà
3PL.LOG	rè	ʔóógìnízì	ʔígà

Future

1SG	mìí	ʔòògìní	ʔígà
2SG	mùú	ʔòògìní	ʔígà
1&2SG	nàá	ʔòògìní	ʔígà
3SG	ʔàá	ʔòògìní	ʔígà
3SG.LOG	lèé	ʔòògìní	ʔígà
1PL	rìí	ʔòògìní	ʔígà
2PL	ròó	ʔòògìní	ʔígà
1&2PL	nàá	ʔòògìnízì	ʔígà
3PL	ʔàá	ʔòògìnízì	ʔígà
3PL.LOG	rèé	ʔòògìnízì	ʔígà

Optative

1SG	mí	ʔòògìní	ʔígà
2SG	mú	ʔòògìní	ʔígà
1&2SG	ná	ʔòògìní	ʔígà
3SG	má	ʔòògìní	ʔígà
3SG.LOG	má	ʔòògìní	ʔígà
1PL	rí	ʔòògìní	ʔígà
2PL	ró	ʔòògìní	ʔígà
1&2PL	ná	ʔòògìnízì	ʔígà
3PL	má	ʔòògìnízì	ʔígà
3PL.LOG	má	ʔòògìnízì	ʔígà

Verb class 6, transitive, C(C)VX.CV.CV.CV:

ʔòògìnrì ‘cause to set crawling repeatedly / cause repeatedly to set crawling’

Perfective

1SG	mì	ʔòògìnrì	ʔígà
2SG	mù	ʔòògìnrì	ʔígà
1&2SG	nà	ʔòògìnrì	ʔígà
3SG		ʔòògìnrì	ʔígà
3SG.LOG	lè	ʔòògìnrì	ʔígà
1PL	rì	ʔòògìnrì	ʔígà
2PL	rò	ʔòògìnrì	ʔígà
1&2PL	nà	ʔòògìnrìzì	ʔígà
3PL		ʔòògìnrìzì	ʔígà
3PL.LOG	rè	ʔòògìnrìzì	ʔígà

Perfect

1SG	mì	ʔòògìnrìrì	ʔígà
2SG	mù	ʔòògìnrìrì	ʔígà
1&2SG	nà	ʔòògìnrìrì	ʔígà
3SG		ʔòògìnrìrì	ʔígà
3SG.LOG	lè	ʔòògìnrìrì	ʔígà
1PL	rì	ʔòògìnrìrì	ʔígà
2PL	rò	ʔòògìnrìrì	ʔígà
1&2PL	nà	ʔòògìnrìrìzì	ʔígà
3PL		ʔòògìnrìrìzì	ʔígà
3PL.LOG	rè	ʔòògìnrìrìzì	ʔígà

Pluperfect

1SG	mì	ʔòògìnrìrì	ʔígà
2SG	mù	ʔòògìnrìrì	ʔígà
1&2SG	nà	ʔòògìnrìrì	ʔígà
3SG		ʔòògìnrìrì	ʔígà
3SG.LOG	lè	ʔòògìnrìrì	ʔígà
1PL	rì	ʔòògìnrìrì	ʔígà
2PL	rò	ʔòògìnrìrì	ʔígà
1&2PL	nà	ʔòògìnrìrìzì	ʔígà
3PL		ʔòògìnrìrìzì	ʔígà
3PL.LOG	rè	ʔòògìnrìrìzì	ʔígà

Imperfective

1SG	mì	ʔóógìnrì	ʔígà
2SG	mù	ʔóógìnrì	ʔígà
1&2SG	nà	ʔóógìnrì	ʔígà
3SG	ʔà	ʔóógìnrì	ʔígà
3SG.LOG	lè	ʔóógìnrì	ʔígà
1PL	rì	ʔóógìnrì	ʔígà
2PL	rò	ʔóógìnrì	ʔígà
1&2PL	nà	ʔóógìnrìzì	ʔígà
3PL	ʔà	ʔóógìnrìzì	ʔígà
3PL.LOG	rè	ʔóógìnrìzì	ʔígà

Future

1SG	mìí	ʔòògìnrì	ʔígà
2SG	mùú	ʔòògìnrì	ʔígà
1&2SG	nàá	ʔòògìnrì	ʔígà
3SG	ʔàá	ʔòògìnrì	ʔígà
3SG.LOG	lèé	ʔòògìnrì	ʔígà
1PL	rìí	ʔòògìnrì	ʔígà
2PL	ròó	ʔòògìnrì	ʔígà
1&2PL	nàá	ʔòògìnrìzì	ʔígà
3PL	ʔàá	ʔòògìnrìzì	ʔígà
3PL.LOG	rèé	ʔòògìnrìzì	ʔígà

Optative

1SG	mí	ʔòògìnrì	ʔígà
2SG	mú	ʔòògìnrì	ʔígà
1&2SG	ná	ʔòògìnrì	ʔígà
3SG	má	ʔòògìnrì	ʔígà
3SG.LOG	má	ʔòògìnrì	ʔígà
1PL	rí	ʔòògìnrì	ʔígà
2PL	ró	ʔòògìnrì	ʔígà
1&2PL	ná	ʔòògìnrìzì	ʔígà
3PL	má	ʔòògìnrìzì	ʔígà
3PL.LOG	má	ʔòògìnrìzì	ʔígà

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¹² Acronyms retained in the references are as follows:

- CERDOTOLA Centre Régional de Recherche et de Documentation sur les Traditions Orales et
pour le Développement des Langues Africaines
- CNRS Centre National de la Recherche Scientifique
- DGRST Délégation Générale à la Recherche Scientifique et Technique
- ISH Institut des Sciences Humaines
- SELAF Société pour l'Etude des Langues Africaines

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Curriculum vitae

Erik John Anonby was born on 14 January 1975 in Winnipeg, Canada. He studied at Rosyln Academy in Nairobi, Kenya and in 1993 graduated from Brookwood Secondary School in Langley, Canada. From 1993 to 1997, he studied linguistics and art at Trinity Western University, where he graduated with a Bachelor of Arts and received the Governor-General's Award for academic excellence. From 1997 to 1999, he pursued further studies at Université du Québec à Chicoutimi and Trinity Western University, graduating with a Master's degree in Linguistics and Exegesis. Following a year of sociolinguistic research on several languages in Chad and two years of linguistic research on the Luri language continuum in Iran, he began doctoral research on Mambay in 2003. An associate of Leiden University Centre for Linguistics, he is presently carrying out a research project on Kumzari, a language in northern Oman.

Samenvatting

Het Mambay behoort tot de Adamawa-taalgroep binnen de Niger-Congo taalfamilie. Het wordt door 15.000 mensen in Tsjaad en Kameroen gesproken. Deze studie begint met een overzicht van de historische en taalkundige achtergrond. Er volgt een presentatie van de klanken en een studie van hun distributiepatronen. Tot de bijzonderheden behoren de duidelijk gefonologiseerde labiale *flap* en een rijk klinkersysteem met contrastieve klinkerlengte, nasalisatie, glottalisatie en faryngalisatie. Bijzondere aandacht wordt er besteed aan nasaliteit en aan het toonsysteem met twee onderliggende niveaus en daarbij downstep, maar eveneens met pragmatisch gestuurde wisseling tussen intonatieregisters. Bij de beschrijving van de morfologie worden eerst de naamwoorden behandeld, met aandacht voor het verschil tussen vrije en gebonden naamwoordelijke vormen en de aanwezigheid van een serie naamwoordelijke voorvoegsels die niet verwant zijn aan die van de algemeen in het Niger-Congo voorkomende naamwoordklassen. Een rijk systeem van TAM (tempus/aspect/modus) inflectie wordt zowel op het werkwoord als op de voornaamwoorden gemarkeerd. Bijwoorden, bijvoeglijke naamwoorden en ideofonen worden gezamenlijk behandeld, evenals de resterende woordsoorten telwoorden, aanwijzende voornaamwoorden en voorzetsels. Het laatste hoofdstuk van dit proefschrift behandelt eenvoudige en samengestelde zinnen en plaatst de woordsoorten in het verband van zinsbouw en teksteenheid. Er volgt een aantal teksten met interlineaire vertaling, gekozen uit de genres lied, legende, fabel en spreekwoord. Twee appendices bevatten de paradigmata van de onvervreembare vormen van het naamwoord en de vervoegingen van het werkwoord.