A Brief Grammatical Sketch of Ngambay

BY MEKOULNODJI NDJERAREOU, CHRISTY MELICK, & SARAH MOELLER
Graduate Institute of Applied Linguistics Students

ABSTRACT
Ngambay is an SVO language spoken in the southern part of Chad. This paper provides a rough preliminary sketch of Ngambay grammar. This is the first full grammar sketch of Ngambay published in English. Ngambay is a tonal language with both lexical and grammatical tone which is especially apparent in the verbs. This article covers the basic morphology of verbs and nouns. It also briefly describes basic phrase and clause structure and sentence patterns. Over two hundred verbs have been classified by tone patterns and are found in the appendix.

Table of Contents

1. Introduction

Ngambay is an SVO language spoken in the southern part of Chad. The center of the Ngambay-speaking area is the city of Moundou. According to Thayer (1978:1) Ngambay is classified as Nilo-Saharan, Chari-Nile, Central Sudanic. It is further classified as Bongo-Bagirmi, Sara-Bagirmi, Sara (Gordon 2005:85). Alternate names include Sara, Sara Ngambai, Gamba, Gabaye, Gam-Lai, Ngambai, and Gambaie (Gordon 2005). According to Gordon (2005:85), there were 750,000 speakers in 1999.[1]

This paper provides a rough preliminary sketch of Ngambay grammar. This analysis follows a typological approach as outlined in Kroeger (2005). Phonological rules are given using feature geometry. In §2, we discuss the various word classes and their morphology. In §3, we discuss noun phrases and prepositional phrases. In sections §4 and §5, we provide an overview of sentence structure.

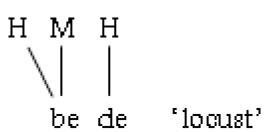
1.1 Brief Introduction to Ngambay Phonology

Ngambay has twenty-two consonant phonemes and thirteen vowel phonemes. These phonemes and the orthographic symbols we use in this paper are shown in Appendix A.

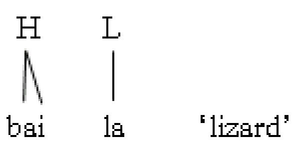
An understanding of the tone system is critical when investigating the grammar, in particular the verb inflection patterns, much of which is governed by tone, as is discussed in §2.2. Ngambay has three contrastive register tones: High, Mid, and Low. More than one tone may be found on one syllable. In such instances, the tones are realized phonetically as contour tones, but are interpreted as a series of register tones.[2]

Tones are assigned on the word right to left.[3] Extra tones are assigned to the first syllable as seen in (1). When a word has fewer tones than tone bearing units, the last tone is assigned to the last tone bearing unit as seen in (2).

(1)



(2)



[1] With the exception of §2.2, most of the data in this paper was gathered over an eight-week period during one hour sessions three days a week. The data in §2.2 was collected in longer sessions over the next three months. It was collected from Mekoulnodji (Priscille) Ndjerareou, a native of Chad who grew up speaking Ngambay (the southern dialect) at home. She was born in Bibalam, Chad, near Moundou. She received her MA in linguistics in 1982 from University of Texas-Arlington and has lived in the United States since then. The publication of this paper is due in great part to the tremendous help and advice kindly provided by Michael Boutin.

[2] In this paper, phonetic contour tones are often represented by one tone letter, e.g. /sɔ˥ ˧/ becomes [sɔ˦] '2SG.eat'.

[3] We are indebted to Mike Cahill for his help on this section.

Ngambay has both lexical tone and grammatical tone. For example, verbs have lexical tone in their underlying form, but grammatical tone distinguishes different inflected forms of verbs. Adding a tone or changing an underlying tone of a verb is a morphological process which results in an inflected form of the verb. Some grammatical morphemes have both a tonal component and a segmental affix. These tonal components are realized on the nearest vowel of the stem to which the affix or clitic attaches. An example of a morpheme with a tonal component is *dˊ-* 'third person plural subject agreement' on verbs. When the high tone of the prefix *dˊ-* '3PL.SBAGR' attaches to a two-syllable stem which contains two distinct tones, such as *ndo˧goˊ* 'shine' in (3), the high tone in the prefix attaches to the first vowel of the stem resulting in a contour tone as seen in (4).

(3) ndo˧goˊ 'shine'

(4) ndo˩˥goˊ '3PL.SBAGR.shine'

However, when the high tone of the prefix *dˊ-* '3PL.SBAGR' attaches to a two-syllable stem with a single tone, such as *i˧la˧* 'throw' in (5), the high tone in the prefix attaches to the first vowel of the stem, causing this first vowel to be delinked from the underlying tone as in (6).

(5) i˧la˧ 'throw'

(6) d-iˊla˧ '3PL.SBAGR-throw'[4]

The rules of attachment for this tonal morpheme are shown in Figure 1.

Figure 1: Third Plural Tone Affix Rule

Consonant clusters are not allowed word-initially unless the first segment is a nasal. When non-nasal prefixes such as *dˊ-* '3PL.SBAGR' are added to roots with initial consonants, the prefix consonant is deleted due to a phonological process shown in Figure 2. The prefix consonant is deleted in (4) since the stem begins with a consonant /ⁿd/; however, the prefix consonant occurs in (6) since the stem begins with a vowel /i/.

[4] When subject agreement is only marked by tone as in (4) where '3SG.SBAGR' is marked by high tone, subject agreement is glossed as part of the stem (e.g. *ndo˩˥goˊ* '3PL.SBAGR.shine'). However, when subject agreement is maked by both an affix and a tone as in (6) where '3SG.SBAGR' is marked by the prefix *d-* and high tone (e.g. *d-iˊla˧* '3PL.SBAGR-throw'), subject agreement is glossed as a simple affix even though it also involves grammatical tone.

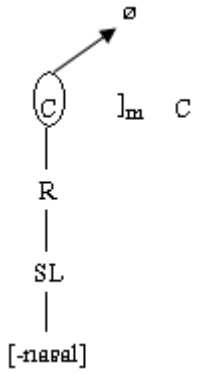


Figure 2: Consonant Deletion Rule

2. Word classes and morphology

The following word classes are described in the sections below: nouns, verbs, adverbs, pronouns, quantifiers, emphasis particles, prepositions, conjunctions, and complementizers. An interesting feature is that no adjective category exists. Words translated as adjectives in English have the same properties as verbs; therefore, they are covered below with the verbs (§2.2).

2.1 Nouns

Nouns can be classed as collective or non-collective. Non-collective nouns are marked for plurality by the clitic plural marker *=jeɬ* 'PL' as in (7).

(7) a. diɻngəmɻ
man
'man'

b. diɻngəmɻ=jeɬ
man=PL
'men'

If the subject is a collective noun, then the verb agrees in person and number with the subject as shown in (8). In Ngambay, body parts, such as ears, are considered collective nouns and do not receive plural marking. Collective nouns do not take a plural marker and verbs are inflected for third person singular subjects as seen in (8).

(8) mbiɻ=m tɔɬ=m
ear=1SG 3SG.SBAGR.hurt=1SG.OBJ
'My ears hurt me./ My ear hurts me.'

Animate objects are always considered non-collective and always marked for plurality. Sometimes Ngambay sees objects as collective nouns that English-speakers would not consider collective. Vandame (1974:30-32) states that inanimate objects, animals, body parts, etc. do not receive plural marking. However, we have found that many inanimate objects, animals, and some abstract ideas do receive plural markings. Examples can be seen in (9).

(9) kagɬ-kiɻsiɻ=jeɬ biʔsiɬ=jeɬ kuʔnaɬ-taɻ=jeɬ
wood-sit=PL dog=PL rooster-word=PL
'chairs' 'dogs' 'proverbs'

The word *ngonɻ* 'child' provides an exception to the normal noun number inflection pattern. The plural form of *ngonɻ* 'child' takes the plural clitic and also shows mutation to its vowel and a change in tone. The vowel /o/ changes to /a/, and the tone changes from mid to high. Accordingly, the word becomes *nganʔ=jeɻ* '*children'*. Many compounds are formed from *ngonɻ* 'child', like *ngonɻ-jiɻ* 'finger' (lit. 'child of the hand'). These compounds are pluralized in the same way as *ngonɻ* 'child', except that the

compounds do not take the plural clitic marker *=je˦*. The vowel mutation and tone change result in the plural form *ngan˥-ji˦* 'fingers'.

Compound nouns consist of two or more base lexemes which are treated as one semantic unit. They are derived from two nouns, as in (10) or else a noun and a verb, as in (11).

(10) gɔl˩-wo˩dro˩
n n
foot-car
'tire'

(11) ne˥-sɔ˩
n v
thing-to.eat
'food'

The plural marker on compound nouns occurs after the last lexeme in the compound, not after each lexeme, as seen in (12).

(12) kəm˩-bɔ˩le˩=je˦
eye-hole=PL
'windows'

The most common compounds consist of two nouns.[5] A word formation rule for this type of compound is shown in (13). Examples are shown in (14).

(13) Word Formation Rule for Noun + Noun Compounds
$[X]_N$ + $[Y]_N \leftrightarrow [XY]_N$
'X' 'Y' 'X of Y'

(14)

i˦nga˦-dɔ˩	ngan˥-ji˦
hair-head	children-hand
'hair (on the head)'[6]	'fingers'

Another type of compound is a compositional compound consisting of a noun followed by a verb as shown in (15). The WFR for this is shown in (16).

(15) ne˥-sɔ˩
thing-eat
'food'

(16) Word Formation Rule for Noun + Verb Compounds
$[X]_N$ + $[Y]_V \leftrightarrow [XY]_N$
'X' 'Y' 'X to Y'

2.2 Verbs

Verbs are inflected for the infinitive, aspect, and subject-agreement. Ngambay's verbal inflection system is complicated, including both grammatical tone changes on the verb root and segmental affixes that combine in somewhat unusual ways. As a result, a position class chart (Table 1) is helpful in understanding the order in which the segmental affixes combine, but it does not fully explain the inflectional system. Each inflectional paradigm in the chart is discussed below.

[5] Much of the description of compound nouns was provided by Brent Brollier and Melva Wahl who also worked with Priscille during the initial 8-week sessions.
[6] As opposed to hair on animals (fur).

Table 1: Position class chart for verbs

-4 Subj-Agr	(-2) (Infinitive)	(-1) (Aspect)	0 Stem
m- '1SG'	k- 'INF'	t- 'ITER'	
ø- '2'		ø- 'SIMPLE'	
ø- '3SG'			
n- 'REP'			
j- '1PL'			
dꞁ- '3PL'			

The different aspects are associated with different tone paradigms for each verb as discussed in §2.2.2. Tense and other aspects are expressed with auxiliaries and serial verbs as discussed in §2.2.3 and §4.1.4.

2.2.1 Subject-agreement

All verb phrases take the subject-agreement prefixes shown in Table 1. The tone pattern found on the verb root is also important to subject agreement, particularly since pronominal subjects are pro-dropped and second and third person singular forms are only distinguished by a difference in tone in vowel-initial verbs (cf. §2.2.4). Consonant-initial verbs show underspecification for subject agreement since non-nasal prefixes are deleted (cf. §1.1). In both consonant-initial and vowel-initial verbs, as part of the third person plural prefix a high tone is added to the beginning of the first syllable of the verb root as seen above in Table 1.

When verbs are inflected for subject-agreement in realis tense, the underlying tone pattern of the verb root is found in the second person form and the first person singular form. As seen in Table 2, the underlying tone pattern for *iꜜlaꜛ* 'throw' is MM (mid-mid) which is the same tone pattern found in second person singular, second person plural, and first person singular subject-agreement forms. The tone pattern for first person plural, third person singular, and reported speech is LM (low-mid). Third person plural has its own tone pattern HM (high-mid). These tone patterns change when the verb is inflected for iterative aspect (see §2.2.3.1) or when a verb belongs to a different class (see §2.2.4).

Table 2: Paradigm for *iꜜlaꜛ* 'throw'

	SG	PL
1	m-iꜜlaꜜ	j-iꜣlaꜜ
2	iꜜlaꜜ	iꜜlaꜜ=jeꜜ
3	iꜣlaꜜ	d-iꞁlaꜜ
REP	n-iꜣlaꜜ	

The second person singular is not inflected. It represents the underlying form of the verb. Second person plural subject agreement is marked by the enclitic *=jeꜛ* 'PL'. When the object is a noun, the enclitic *=jeꜛ* 'PL' attaches to the verb, as seen in (17). However, when the object is a pronoun, the enclitic object attaches to the verb and the enclitic *=jeꜛ* 'PL' attaches to the enclitic object, as seen in (18). According to Vandame (1974:35), historically, the plural enclitic *=jeꜛ* followed all verbs with plural subjects. It currently distinguishes second person plural subjects from second person singular subjects.

(17) sɔꜘ=jeꜜ neꞁ
eat=PL thing
'You (PL) eat (something).'

(18) sɔꜜ=deꜛ=jeꜜ[7]
eat=3PL.OBJ=PL
'You (PL) eat them.'

On certain verbs, such as is *iꜛsiꜜ* 'sit' in (19), a word-initial vowel occurs only on forms with a consonantal subject-agreement prefix. It is deleted when there is no consonantal prefix, as in those with second person and third person singular subject agreement.[8] Surprisingly the infinitive does not contain the initial vowel. Keegan describes a class of verbs that shows a similar phenomenon in Mbay. He says that these verbs are derived historically from VCV verbs (Keegan 1997:42).[9] Possible evidence for the same claim to be made of Ngambay is that these verbs follow the tone patterns of other vowel-initial verbs (see §2.2.4.2 and Appendix B).

(19)	m-siꜜ ~ m-iꜛsiꜜ	'1SG.SBAGR-sit'	j-iꜣsiꜜ	'1PL.SBAGR-sit'
	siꜜ	'2SG.SBAGR.sit'	siꜜ=jeꜜ	'2.SBAGRsit=PL'
	siꜣ	'3SG.SBAGR.sits'	d-iꜛsiꜜ	'3PL.SBAGR-sit'
	n-iꜣsiꜣ	'REP.SBAGR-sits'	siꜣ	'INF.sit'

2.2.2 Aspect

Some verbs can be inflected for iterative aspect. Serial verbs are used to indicate progressive aspect (see §4.1.4).

2.2.2.1 Iterative

Iterative aspect usually indicates that the same action is done multiple times as shown in (20) and (21). In certain circumstances, it can also be used to indicate that an action is done one time by one person on behalf of a group, as in (22). Iterative aspect is marked by tone and the prefix *t-* 'ITER' which attaches to the verb stem. A different tone pattern occurs on the verb root than on the non-iterative realis form. These tone patterns are discussed in §2.2.4.

(20) ngaꜛn=jeꜜ t-iꜛlaꜜ biꜛsiꜜ
children=PL ITER-3PL.SBAGR.throw[10] dog
'The children throw (things) at the dog.'

(21) ngonꜜ t-iꜛlaꜜ biꜛsiꜜ=jeꜜ
child ITER-3SG.SBAGR.throw dog=PL
'The child throws (things) at the dogs.'

(22) t-uꜛguꜜ=m
ITER-3PL.SBAGR.pinch=1SG
'They pinched me.'[11]

---

[7] Clitics can attach to forms already containing clitics, but inflectional affixes cannot (Zwicky and Pullum 1983:504).

[8] In the 1SG, the appearance of the word-initial vowel is not considered incorrect, but is used generally only by children.

[9] Rather than treating verbs like *iꜛsiꜜ* 'sit' in (19) as having an underlying VCV shape which requires a rule of vowel deletion as we have done, one could treat these exceptional verbs as having an underlying CV shape. This would require a rule of vowel epenthesis to add the initial vowel to those forms in which it occurs. Further study of this phenomenon is merited.

[10] According to Table 1, iterative aspect is closer to the verb root than subject agreement. The presence of the iterative prefix /t-/ in (20) blocks the prefix /d-/ '3PL.SBAGR' (see Figure 2).

[11] This is said by one child who was being picked on by a group of other children and then one of them pinched him.

The verb *u˥ndaꜜ* 'hit' provides an exception to the normal iterative aspect prefix as seen in (23). For this verb, the iterative prefix is normally [k], not [t]. However, [t] may also occur on this verb as seen in (24) (cf. Vandame 1974:60-62).

(23) uꜛndaꜛ — 3SG.SBAGR.hit — 'He hit.'
k-uꜜndaꜜ — ITER-3SG.SBAGR.hit — 'He hit many times.'

(24) iꜛlaꜜ — 3SG.SBAGR.throw — 'He throws.'
t-i˥laꜜ — ITER-3SG.SBAGR.throw — 'He throws many times.'

2.2.2.2 Infinitive

The infinitive form of the verb is marked by the prefix *k-* 'INF', as in (25). The underlying form of the verb in (25) is *aiꜜ* 'drink' which belongs to verb class 3.[12] The verb in (25) takes a low-mid tone pattern which is the tone pattern for Class 3 verbs inflected for third person singular subject agreement (cf. (43) in §2.2.4.2). The tone pattern for the infinitive form of any verb class is always the same as the tone pattern for the third person singular subject agreement and realis tense form in that class.

(25) k-aiꜛ
INF-drink
'to drink'

2.2.3 Tense

Irrealis tense is marked with an auxiliary, *a* 'IRR', preceding the main verb as shown in (26). The auxiliary is marked for subject agreement while the main verb is in infinitive form. Irrealis is used for events that occur in the future. Realis is used for events that occur in the past and present, and is not marked in any way.[13]

(26) m-aꜜ k-aiꜛ
1SG.SBAGR-IRR INF-drink'
'I will drink.'

The irrealis auxiliary has a tonal component to subject agreement[14] as shown in (27). For example, mid tone occurs on the irrealis auxiliary when the subject is first person singular or second person.

(27) aꜜ - '1SG.IRR'/'2.IRR'
aꜛ - '3SG.IRR'/'1PL.IRR'/'REP'
a˥ - '3PL.IRR'

2.2.4 Verb classes

Vandame (1974:35-37) discusses three conjugation patterns for verbs based on the underlying tone of the first vowel of the stem and notes that many dialectal variations are based on differences in tone in verb conjugation. Ndjerassem (1982:98-102) notes a much wider variety of tone conjugation patterns on the verbs, which he analyzes as a result of phonological processes with the combination of tones on the

[12] All Class 3 verbs have a mid tone in the second person singular subject-agreeement form. See the list of Class 3 verbs in Appendix B.
[13] See Kroeger (2005:149) for discussion of realis tense.
[14] The subject agreement tonal pattern for the irrealis auxiliary is different from all of the patterns for the verb classes which are discussed in §2.2.4.

verb root and the subject agreement prefixes. His phonological rules for tone do not fully account for all of our data. Therefore, we have posited five classes of verbs based on their tone conjugation patterns.[15]

First, verbs are divided into two groups based on whether the verb root begins with a vowel or consonant. Class 1 consists of all consonant-initial verbs. These verbs retain the same tone pattern on the verb root with all subjects, except for the addition of the high tone of the third person plural subject agreement prefix, as shown in the paradigm for the verb *nõ˧* 'cry' in (28).

(28)

1SG	nõ˧	1PL	nõ˧
2SG	nõ˧	2PL	nõ˧
3SG	nõ˧	3PL	nõ˥

We have found seven possible tone patterns that occur in consonant-initial verbs: high, mid, low, low-mid, high-mid, mid-high, and low-high. Examples of each can be found below in §2.2.4.1.

Vowel-initial verbs are divided into classes based on the inflectional tone paradigms of the verb. These verbs show variation in tone patterns with different subjects. Table 3 gives an overview of the tone paradigms for each vowel-initial verb class. As stated in §2.2.1, the first person singular subject-agreement tone pattern is identical to the second person pattern, and the third person singular tone pattern is identical to the first person plural and reported speech pattern. The infinitive form of the verb also takes the third person singular tone pattern. Iterative forms, when found, follow the tone patterns of consonant-initial verbs with either a high, mid, or high-mid tone pattern. Each class is discussed in detail below.

Table 3: Inflectional Paradigms for Verbs Beginning with Vowels

	2	**3**	**4**	**5**
2 sg	H	M	M	HM
3 sg	L	LM	LM	L
3 pl	H	H	HM	HM

A list of verbs in each class can be found in Appendix B.

2.2.4.1 Class 1

All of the verbs in this class begin with consonants. Each has a single underlying tone that only changes for the third person plural subject-agreement form, which adds a high tone at the beginning of the root. Below are examples of verbs with each tone pattern we have found. The second person singular form, which is the underlying form, and the third person plural form are shown for each verb.

The high tone verb *tɔl˥* 'peel' is shown in (29). We have not found any high-tone verbs that can occur with iterative aspect.

(29)

	REALIS
2SG	tɔl˥
3PL	tɔl˥

The mid tone verbs *nõ˧* 'cry' and *su˧la˧* 'dissuade' are shown in (30) and (31), respectively.[16] The tone pattern for the iterative forms of this class, such as those in (31), is identical to the tone pattern in the non-iterative forms.

[15] Patman (1991) also describes phonologically defined verb classes in which grammatical tone is marked in different places within the verb phrase.

[16] This is the only verb we have found that begins with an /s/ and has an iterative form. It appears that a phonological rule deletes the word-initial /s/ when preceded by the iterative /t-/ prefix, as shown in (31): /s/ → ø/ t-_.

(30)

	REALIS
2SG	nõ˧
3PL	nõ˥

(31)

	REALIS	ITERATIVE
2SG	su˧la˧	t-u˧la˧
3PL	su˩la˧	t-u˩la˧

The low tone verbs *pa˩* 'say' and *nja˩re˩* 'cut into strips' are shown in (32) and (33). The tone pattern on the iterative forms of this class is high-mid as seen in (33).[17] Iterative forms of Class 1 verbs are normally marked only by tone, rather than the prefix *t-* 'ITER' which is deleted before consonants (see Figure 2).

(32)

	REALIS
2SG	pa˩
3PL	pa˥

(33)

	REALIS	ITERATIVE
2SG	nja˩re˩	nja˩re˧
3PL	nja˩re˩	nja˩re˧

Low-mid verbs *ta˨* 'take' and *ko˩go˧* 'laugh' are shown in (34) and (35). No verbs with this tone pattern have been found that can be inflected for iterative aspect.

(34)

	REALIS
2SG	ta˨
3PL	ta˩˥

(35)

	REALIS
2SG	ko˩go˧
3PL	ko˥go˧

High-mid verbs *kor˦* 'chase' and *ngi˩na˧* 'wait' are shown in (36) and (37). No verbs with this tone pattern have been found that can be inflected for iterative aspect.

(36)

	REALIS
2SG	kor˥
3PL	kor˥

(37)

	REALIS
2SG	ngi˩na˧
3PL	ngi˩na˧

Mid-high verbs *til˧* 'tear' and *ndo˧go˩* 'shine' are shown in (38) and (39). No verbs with this tone pattern have been found that can be inflected for iterative aspect.

[17] High-mid is the tone pattern in Class 5.

(38)

	REALIS
2SG	til˦
3PL	til˥

(39)

	REALIS
2SG	ndo˦go˥
3PL	ndo˨go˥

Low-high verbs *soi˧* 'bore (a hole)' and *go˩do˥* 'NEG.EXIST' are shown in (40) and (41). No verbs with this tone pattern have been found that can be inflected for iterative aspect.

(40)

	REALIS
2SG	soi˧
3PL	soi ˨

(41)

	REALIS
2SG	go˩do˥
3PL	go˨do˥

2.2.4.2 Classes 2-5

The verbs in these classes all begin with vowels. Classes 3-5 all contain verbs that can occur with iterative aspect. Classes 4 and 5 are divided into subclasses because, though they have the same realis tone patterns, the iterative tone patterns are different.

Class 2 verbs have high tone in the second person singular and third person plural forms and low tone in the third person singular form. None of the verbs we have found in this class can occur with iterative aspect. The tone paradigm for the Class 2 verb *il˥* 'suck' is shown in (42).

(42)

	REALIS
2SG	il˥
3SG	il˩
3PL	d-il˥

Class 3 verbs have mid tone in the second person singular form, low-mid in the third person singular form, and high tone in third person plural form. In this class, only one of the verbs we have found, *al˦* 'jump' can occur with iterative aspect. The tone paradigm for the Class 3 verb *al˦* 'jump' is shown in (43). The iterative forms in (43) follow the tone pattern for high-tone Class 1 verbs (cf. (29)).

(43)

	REALIS	ITER
2SG	al˦	t-al˥
3SG	al˧	t-al˥
3PL	d-al˥	t-al˥

Class 4 verbs have mid tone in the second person singular form, low-mid in the third person singular form, and high-mid tone in third person plural form. In this class, verbs with iterative forms are divided into two subclasses based on the iterative tone patterns.

Class 4A iterative forms follow the tone pattern for high-mid Class 1 verbs. The tone paradigm for the Class 4A verb *i˦la˦* 'throw' is shown in (44).

(44)

	REALIS	ITER
2SG	i˧la˧	t-i˥la˧
3SG	i˩la˧	t-i˥la˧
3PL	d-i˥la˧	t-i˥la˧

Class 4B iterative forms follow the tone pattern for mid-tone Class 1 verbs. Tone paradigms for Class 4B verbs *or˧* 'take out' and *u˧nda˧* 'put' are shown in (45) and (46).

(45)

	REALIS	ITER
2SG	or˧	t-or˧
3SG	or˩	t-or˧
3PL	d-or˥	t-or˥

(46)

	REALIS	ITER
2SG	u˧nda˧	t-u˧nda˧
3SG	u˩nda˧	t-u˧nda˧
3PL	d-u˥nda˧	t-u˥nda˧

Class 5 verbs have high-mid tone in the second person singular and third person plural forms and low tone in the third person singular form. In this class, verbs with iterative forms are divided into two subclasses based on the iterative tone patterns. Class 5A iterative forms follow the tone pattern for mid-tone Class 1 verbs. Class 5B iterative forms follow the tone pattern for high-mid Class 1 verbs. The tone paradigm for the Class 5A verb *u˥la˧* 'put' is shown in (47) and Class 5B verb *u˥ru˧* 'swallow' is shown in (48).

(47)

	REALIS	ITER
2SG	u˥la˧	t-u˧la˧
3SG	u˩la˩	t-u˧la˧
3PL	d-u˥la˧	t-u˥la˧

(48)

	REALIS	ITER
2SG	u˥ru˧	t-u˥ru˧
3SG	u˩ru˩	t-u˥ru˧
3PL	d-u˥ru˧	t-u˥ru˧

2.2.4.3 Trisyllabic verbs

Ngambay contains a very limited number of trisyllabic verbs. We have only been able to find six, and Ndjerassem (1982:102) lists two additional verbs, but does not give full conjugation patterns for them. These verbs have different tone conjugation patterns than the monosyllabic and disyllabic verbs, although some are very similar. With so little data, it is difficult to draw further conclusions based on these verbs. The data we have for these verbs is found in Appendix C.

2.3 Adverbs

Adverbs modify verbs. They are not distinguished in form from other words. Many adverbs that denote intensification are formed through reduplication as shown in (49). However, these adverbs always occur in the reduplicated form, so, for instance, there is no word *njud˥* 'very', only *njud˥njud˥*.

According to Thayer (1978:35), most adverbs are associated with only one verb. An example of an adverb that can only be used with the verb *ndul˩* 'is black' is given in (49).

(49) lo˩ ndul˩ njud˥-njud˥
place black very-very
'The place is dark.'

2.4 Pronouns

A set of personal pronouns is shown in (50).

(50) =m '1SG' =si˥ '1PL'
=i˦ '2SG' =si˥ '2PL'
=e˥ '3SG'[18] =de˥ '3PL'
=na˥ 'RCP'

The pronouns in (50) are enclitics which attach to verbs, nouns, or prepositions. When they attach to verbs they serve as pronominal objects (see §4). When they attach to nouns or prepositions they indicate possession (see §3.1). Subject pronouns are obligatorily pro-dropped.

The first and second person plural forms are identical. An emphatic pronoun may be added to distinguish between these forms as shown in (51).

(51) u˩nda˩=si˥ (jẽ˥) u˩nda˩=si˥ (səĩˬ)
3SG.SBAGR.hit=1/2PL.OBJ 1PL 3SG.SBAGR.hit =1/2PL.OBJ 2PL
'He hit us.' 'He hit you (PL).'

A second set of pronouns is the emphatic pronouns which are shown in (52).

(52) ma˥ '1SG' jẽ˥ '1PL'
ĩ˥ '2SG' səĩˬ '2PL'
nyẽ˩ '3SG' dẽ˥ '3PL'
ne˩ 'REP'

Emphatic pronouns are used to clarify or emphasize the subject or object of a clause. They are sometimes accompanied by an emphatic particle as seen in (53).

(53) ma˦ bba˥ m-ra˦ ma˥ ya˥˦ m-ra˦
1SG.EMPH EMPH 1SG.SBAGR-do 1SG.EMPH EMPH 1SG.SBAGR-do
'It's me that did it.' 'It's me that did it.'

When reporting the speech of a third person the pronoun *ne˩* 'REP' is used in complement clauses when the subject of the matrix clause is identical to the subject of the subordinate clause, as seen in (54). In this sentence the speaker is reporting what someone said about himself. Compare this to (55) , where the subject of the subordinate clause is the different from the subject of the matrix clause. In this sentence the speaker is reporting what someone said about another person.[19]

(54) u˩la˩=m pa˩ na˩ ne˩ n-ak˩-au˧=1
3SG.SBAGR.tell=1SG.OBJ 3SG.SBAGR.say COMP REP REP.SBAGR-IRR-go=NEG
'He$_1$ told me he$_1$ is not going.'

(55) pa˩ na˩ ak˩-au˧=1
3SG.SBAGR.say COMP 3SG.SBAGR.IRR-go=NEG
'He$_1$ said that he$_2$ is not going.'

[18] Sometimes this pronoun appears as /a/ because of vowel harmony. This matter merits further investigation.

[19] This pronoun appears to fit the description of logophoric pronouns discussed by Dalyrimple (1993), but more data is needed to confirm this.

2.5 Quantifiers

Quantifiers include both cardinal numbers and words like *mbatˀ, laiˀ* 'all'; *buɻlaɻ, nyã˧* 'a lot'; *bbəlˀ, lamˀ, sẽˀ* 'a little' (Vandame 1974:32-34). They only occur within a noun phrase; however, *buɻlaɻ* and *sẽˀ*[20] can also be used as verbs.

2.6 Emphasis particles

In addition to the emphatic pronouns, emphasis can be shown with the emphatic particles *bbaˀ* and *yaˀ*.[21] These particles generally occur at the end of the emphasized phrase or at the beginning of a sentence, as seen in (56).

(56) bad˧ bbaˀ aĩ˩ bbo˧ biˀsi˧=l
sheep EMPH 3SG.SBAGR.run if dog=NEG
'The sheep ran, not the dog.'

2.7 Prepositions

Two prepositions are used to express possession and instruments. The preposition *lə˧* 'of' is used between noun phrases to indicate that the first noun phrase is possessed by the second. The preposition *gənɻ* 'with' is used to express instruments. See §3.2 for examples.

2.8 Conjunctions

Conjunctions are used to conjoin constituents of the same category. Their usage is based on the meaning of the conjunction and the type of constituents which are conjoined. We have found the following conjunctions: *gəɻ, tɔɻ* 'and', see examples (57) and (58); *e˧se˧ 'or', see example (59); nda˨˩* 'then', see example (60); and *ngaɻ* 'but' see example (61).

(57) diɻngəmɻ dẽˀ gəɻ deɻneˀ leˀ d-iˀsi˧ ne
man 3PL.EMPH and woman DEF 3PL.SBAGR-sit here
'The man and woman live here.'

(58) diɻngəmɻ auɻ njaɻ tɔɻ paɻ taˀ tɔɻ[22]
man 3SG.SBAGR.go 3SG.SBAGR.walk and 3SG.SBAGR.say word and
'The man is walking and talking.'

(59) to˧ da˧ biã˧ e˧se˧ da˧ bad˧ waɻ
3SG.SBAGR.be meat goat or meat sheep QUES
'Is that goat meat or lamb?'

(60) nda˨˩ m-telˀ m-si dɔɻ kag˧ gəˀ leˀ
then 1SG.SBAGR-turn 1SG.SBAGR-sit head log LOC DEF
'Then I sat down on the log.'

(61) diɻngəmɻ sɔɻ da˧ bad˧ ngaɻ deɻneˀ sɔɻ da˧ biã˧
man 3SG.SBAGR.eat meat sheep but woman 3SG.SBAGR.eat meat goat
'The man eats lamb but the woman eats goat.'

[20] The use of *sẽˀ* as a verb is questionable. It is only used as a verb by young people. This word is frequently used as a verb in related languages, so it may be a borrowing.

[21] The emphatic *yaˀ* 'EMPH' seems to be used to indicate the opposite of an idea or proposition.

[22] This connector occurs after each conjoined constituent.

2.9 Complementizers

Complementizers are used to introduce certain subordinate clauses. The complementizer *to˧ge˥* introduces complement clauses of a cognition verb; *na˩* introduces complement clauses of speech verbs; *bba˥ na˩* introduces purpose adjunct clauses; *bbo˧le˥ (to˧) gə˥* introduces conditional clauses; and *gə˥* is the relativizer used to introduce relative clauses. See §5.4 for examples.

3. Phrases

3.1 Noun phrase structure

Noun phrases contain an obligatory head noun followed by optional possessors, relative clauses, quantifiers, a locative case marker, and determiners, as seen in (62) and Figure 3. There is no agreement marking within noun phrases.

(62) NP → N $\left(\left\{ \begin{matrix} \text{NP}_{[\text{POSS}]} \\ \text{PP}_{[\text{POSS}]} \end{matrix} \right\} \right)$ (S')* (LOC) (QUANT) (DET)

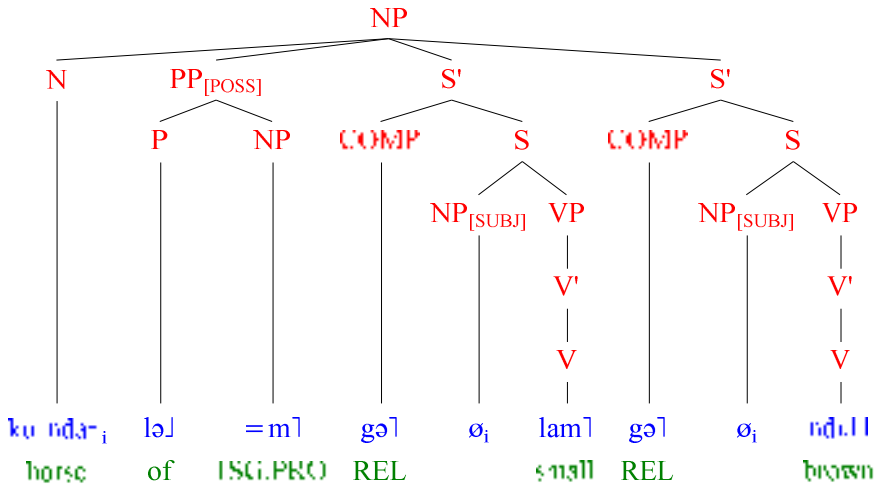


Figure 3: 'my little brown horse'[23]

Possession is indicated by either an $\text{NP}_{[\text{POSS}]}$ or a $\text{PP}_{[\text{POSS}]}$. $\text{NP}_{[\text{POSS}]}$ is used to indicate inalienable possession. The possessor can be an enclitic pronoun as in (63), or an overt noun as in (64).

(63) ta˩=m˥
mouth=1SG.PRO
'my mouth'

(64) ta˩ de˩ne˥
mouth woman
'the woman's mouth'

$\text{PP}_{[\text{POSS}]}$ is used to indicate alienable possession as shown in (65), and uses the preposition *lə˩* 'of'. Possessors can co-occur with any other element of the noun phrase.

[23] The symbol ø is used with subscripts to show the referent of gapped constituents in relative clauses. Therefore, in this tree, ø_i is co-referential with *ku˥nda˧* 'horse'. When used without a subscript, this symbol represents a pro-dropped subject.

(65) bi˥siꜜ ləꜛ deꜛne˥
dog of woman
'the woman's dog'

Relative clauses serve several purposes within the noun phrase. Since there are no adjectives in Ngambay, relative clauses containing an attributive clause are used to describe nouns in the way that many languages use adjectives, as in (66). A more typical relative clause is illustrated in (67). Multiple relative clauses are allowed within a single NP, although multiple relative clauses are not very common in natural speech. When multiple relative clauses do occur, they can appear in any order except that relative clauses containing a transitive verb must come last, or else subsequent clauses will be considered to modify this verb's object rather than the head noun, as seen in (68) and (69).

(66) kaꜛre˥ gə˥ kasꜛ
basket REL 3SG.SBAGR.red
'the red basket'

(67) deꜛne˥ gə˥ uꜛlaꜛ kuꜜbuꜜ
woman REL 3SG.SBAGR.wear skirt
'the woman who is wearing a skirt'

(68) ngonꜜ gə˥ boiᐟ gə˥ arꜛ mborˎ kəi˥=gə˥
child REL 3SG.SBAGR.big REL 3SG.SBAGR.stand side house=LOC
'the big child who is next to the house'

(69) ngonꜜ gə˥ arꜛ mborˎ kəi˥ gə˥ boiᐟ=gə˥
child REL 3SG.SBAGR.stand side house REL 3SG.SBAGR.big=LOC
'the child who is next to the big house'

Quantifiers occur after relative clauses. Multiple quantifiers are not allowed. However, they can occur with possessors and relative clauses. They can also occur within a relative clause, in which case they act like a verb. However, this gives the noun phrase a slightly different meaning. The only time quantifiers co-occur with the determiner is when they are in a relative clause, as seen in (70).

(70) badꜛ=jeꜜ *(gə˥) buꜛlaꜛ le˥
sheep=PL REL many DEF
'the many sheep'

The locative case marker *=gə˥* 'LOC' is only used in certain noun phrases within locative clauses. It marks both place and time (see §4.2.2).

The determiner *le˥* occurs at the end of the noun phrase, as in (70). It is used only for specific, definite nouns that have previously been mentioned in the discourse.

3.2 Prepositional phrases

Prepositional phrases consist of a preposition followed by a noun phrase as illustrated in (71). They can be oblique instrumental arguments, as in (72), or possessor phrases, as in (73). Possessor phrases may occur after any NP. Instrumental prepositional phrases occur in the VP after primary and secondary objects.

(71) PP → P NP

(72) deꜛne˥ uꜛndaꜛ ngonꜜ gəꜛ geuꜜ-kagꜜ
woman 3SG.SBAGR.hit child with small-tree
'The woman hits the child with the stick.'

(73) bi˥siꜜ ləꜛ deꜛne˥
dog of woman
'the woman's dog'

3.3 Coordinate constructions

In coordinate constructions, two constituents of the same category are joined together with a conjunction to form another constituent of that same category. The constituents are co-heads. Figure 4 illustrates a coordinate clause construction.

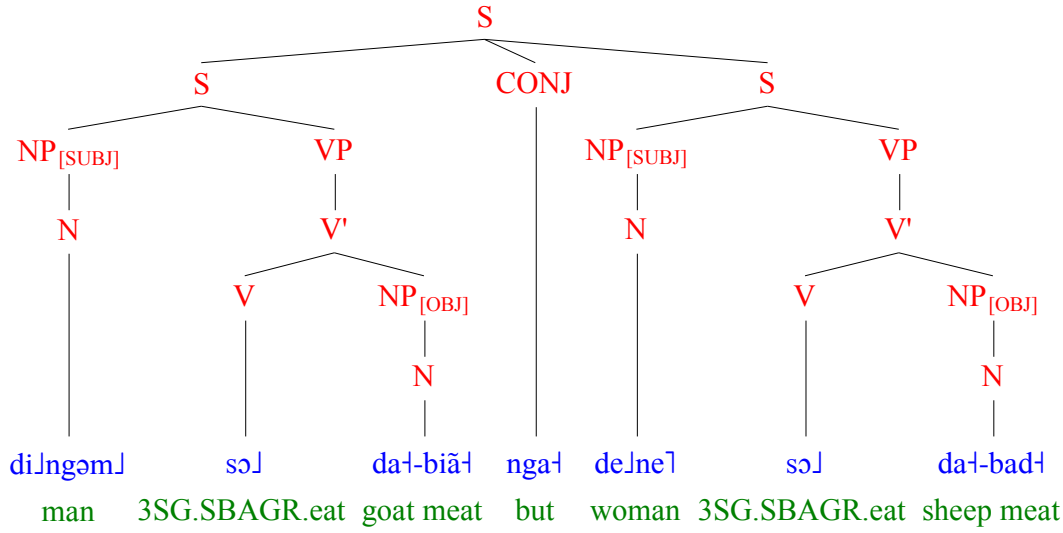


Figure 4: 'The man eats goat but the woman eats lamb.'

Most conjunctions occur between the two constituents that they are joining. However, the distribution of some conjunctions is more complicated.

The conjunction *gəꜛ* is used to coordinate two NPs. When both NP's are animate, the emphatic pronoun *dẽ˥*is placed after the first NP and before the conjunction as in (57) and (74).

(74) diꜛngəmꜛ dẽ˥ gəꜛ badꜛ d-au˥ njaꜜ
man 3PL.EMPH CONJ sheep 3PL.SBAGR-go 3PL.SBAGR.walk
'The man and the sheep were walking.'

The conjunction *təꜛ* is used to coordinate two VPs. It occurs after both VPs, as shown in (58) and (75).

(75) deꜛne˥ ndirꜛ ne˥ təꜛ ɔsꜛ paꜜ təꜛ
woman 3SG.SBAGR.cook thing CONJ 3SG.SBAGR.sing song CONJ
'The woman is cooking and singing.'

4. Basic clause structure

The basic word order is SVO. Grammatical relations are primarily determined by word order. The subject is the noun phrase that appears before the verb. Pronominal subjects are obligatorily pro-dropped with the exception of emphatic pronouns. Primary and secondary objects immediately follow the verb with the primary object being closest to the verb. Oblique arguments follow the objects and are marked by prepositions or a locative case marker. Grammatical relations based on this word order can be seen below in Table 4.

Table 4: Grammatical Relations based on Word Order

	Subject	**Verb**	**Primary Object**	**Secondary Object**	**Oblique**
'The man gives the dog food.'	diɻngəmɻ man	arɻ 3SG.SBAGR.give	biʔsiꜜ dog	neʔsoɻ food	
'The man gives food to the dog.'	diɻngəmɻ man	arɻ 3SG.SBAGR.give	neʔsoɻ food	biʔsiꜜ dog	
'The woman hits the child with a stick.'	deɻneʔ woman	uɻndaɻ 3SG.SBAGR.hit	ngonꜜ child		gəɻ gəuꜜ-kagꜜ with stick

Adjuncts can occur at the beginning and end of clauses as shown in (76) and (77). There is no case or agreement besides subject agreement on the verbs and locative case.

(76) taɻgəʔneɻ ngonꜜ uɻndaɻ biʔsiꜜ
yesterday child 3SG.SBAGR.hit dog
'The child hit the dog yesterday.'

(77) ngonꜜ uɻndaɻ biʔsiꜜ taɻgəʔneɻ
child 3SG.SBAGR.hit dog yesterday
'The child hit the dog yesterday.'

The PSR for basic clauses is shown in (78). Objects and obliques are contained in the verb phrase, which is discussed in §4.1.

(78) $S \rightarrow \left(\left\{ \begin{matrix} ADV \\ NP \\ PP \end{matrix} \right\} \right) NP_{[SUBJ]}\ VP \left(\left\{ \begin{matrix} ADV \\ NP \\ PP \end{matrix} \right\} \right)$

4.1 Verbal predicates

Ngambay has four types of verbal predicates: intransitive verbs, transitive verbs, ditransitive verbs, and serial verbs. These different types of predicates are marked by the presence/absence of objects or, for serial verbs, a second verb– there are no morphological distinctions between these verb types. Some verbs from each type can take an oblique argument. The VP and V' PSRs that account for all types of verbal predicates are seen in (79).

(79) VP→ AUX V' (V')
V' → V (NP[OBJ1]) (NP[OBJ2]) (NP[OBL])

4.1.1 Intransitive clauses

Figure 5 illustrates an intransitive clause whose subject is the noun *ərɻ* 'rock'.[24] Because the verb *oiꜜ* '3SG.SBAGR.heavy' belongs to Class 3 and the subject is third person singular, the tone is low-mid (see §2.2.4.3).

[24] If the subject were a pro-dropped pronoun, the clause structure would be the same (cf. Figure 3).

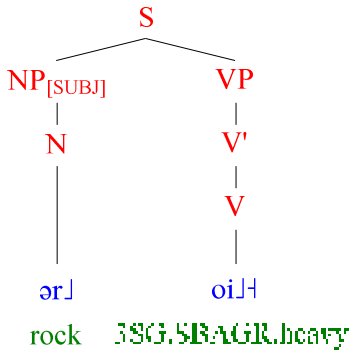


Figure 5: 'The rock is heavy.'

4.1.2 Transitive clauses

Transitive verbs take a subject and one object as seen in Figure 6.

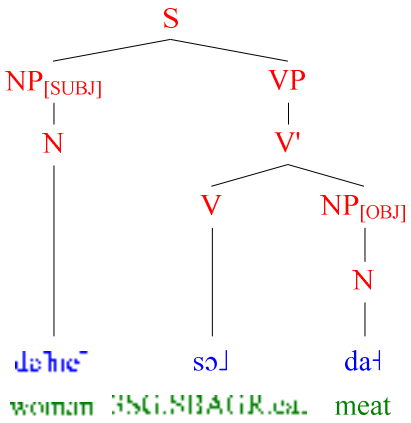


Figure 6: 'The woman eats the meat.'

4.1.3 Ditransitive clauses

Ditransitive verbs take a subject and two objects as seen in Figure 7.

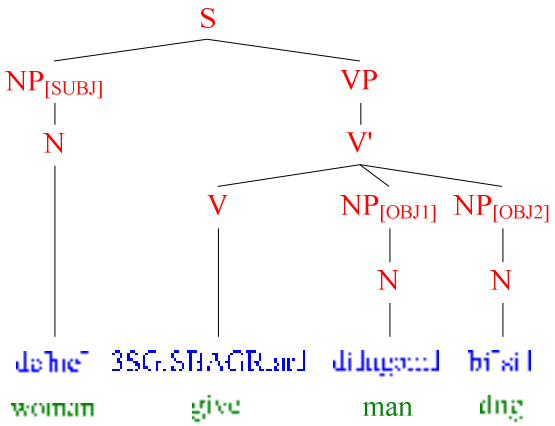


Figure 7: 'The woman gives the man the dog.'

4.1.4 Serial verbs

Serial verbs consist of two verbs with the same subject and no conjunction separating them. They describe a single event. Each verb is inflected for subject agreement, and can have its own object. If the verbs share an object, a pronominal object enclitic attaches to the second verb, as in Figure 8.

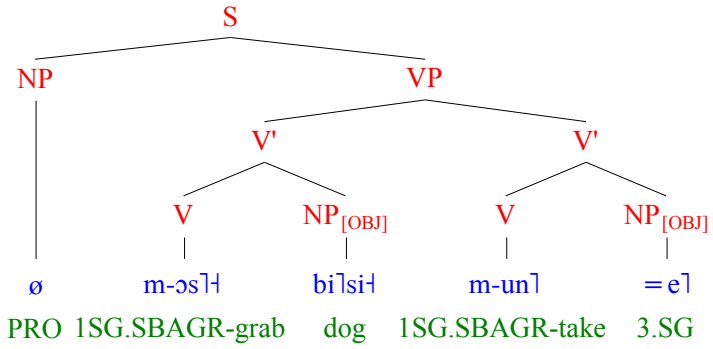


Figure 8: 'I pick up the dog.'[25]

Serial verbs are also used for two grammatical functions. First, serial verb constructions in which the second verb is *arˊ* 'give' are used to mark benefactive arguments as seen in Figure 9.[26]

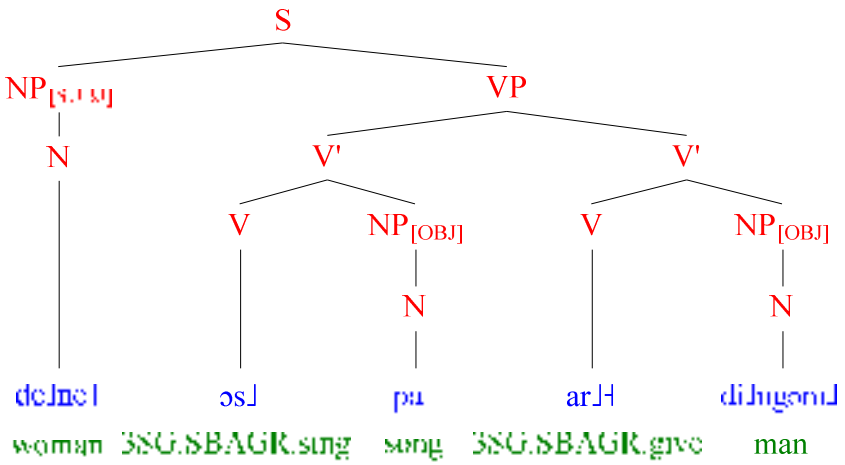


Figure 9: 'The woman sings a song for the man.'

When *arˊ* 'give' is not the second verb in a serial verb construction, the recipient occurs either before or after the other object, as seen in (80) and (81).

(80) diɻngəmɻ arˊ biˀsiˊ neˀsoˊ
man 3SG.SBAGR.give dog food
'The man gives the dog food.'

(81) diɻngəmɻ arˊ neˀsoˊ biˀsiˊ
man 3SG.SBAGR.give food dog
'The man gives the dog food.'

The second grammatical function of serial verb constructions is to mark progressive aspect with the first verb being *auˊ* 'go', as in (82) (cf. Blansitt 1975:27).[27]

[25] 'PRO' is used for pro-dropped subjects.
[26] The use of a verb meaning 'give' in serial verb constructions to mark benefactive arguments is found in Sranan and Anyi (see examples in Kroeger 2004:227) and Alamblak (1988:39).
[27] Blansitt (1975:20) provides examples which show that Kirma, a Gur language in the Niger-Congo family, uses a serial verb construction containing the motion verb *ta* 'leave' to indicate progressive aspect as illustrated below: (see page 21)

(82) de˩ne˥ au˩ nja˧
woman 3SG.SBAGR.go 3SG.SBAGR.walk
'The woman is walking.'

4.2 Non-verbal predicates

Ngambay clauses with non-verbal predicates include equative and locative clauses which contain a copula verb and an $NP_{[XCOMP]}$. This requires that the V' PSR in (79) be revised as in (83).

(83) $V' \rightarrow V \left[\left\{ \begin{matrix} NP_{[XCOMP]} \\ NP_{[OBJ]} \end{matrix} \right\} \right] (NP_{[OBJ2]}) \ (NP_{[OBL]})$

4.2.1 Equative clauses

Equative clauses have a copular verb followed by an NP which functions as the semantic predicate, as seen in (84) and (85). All of the equative clauses in our data occur with the verb *to˧*, which in these clauses means 'to be'.

(84) ngau˧=m˥=je˧ to˧ nje˧-ndo˥-ne˥-dəu˩=je˧
husband=1SG=PL 3SG.SBAGR.COP one.who-teach-thing-person=PL
'My husband is a teacher.'

(85) ku˧nja˥ to˧ yel˩
chicken 3SG.SBAGR.COP bird
'A chicken is a bird.'

4.2.2 Locative clauses

Locative clauses generally use a position verb followed by an NP predicate marked for locative case with the case marker *gə˥* as in (86), (87), and (88). A few exceptions such as *nang˩* 'ground' and *kəi˥* 'house' do not receive locative case marking because they are normally viewed as denoting a place, as in (89).[28] Other nouns use a tone change to denote a locative sense as shown in (90).

The verbs in locative clauses are position verbs which mean 'stand', 'sit', or 'lie'.[29] The verb *ar˥* 'stand' is a Class 2 verb. It is used with animate subjects that are standing as in (86). The verb *si˧* 'sit' is a Class 5 verb. It is used with animate subjects that are sitting as in (87). The verb *to˧* 'lay' is a Class 1 verb whose underlying form is *to˩*. It is used with animate subjects that are lying down and all inanimate subjects.

(86) bi˥si˧ ar˩ gəl˥ kag˧si˧=gə˥
dog 3SG.SBAGR.stand foot chair=LOC
'The dog stands under the chair.'

(87) kau˩ to˩ me˩ ka˩re˩=gə˥
egg 3SG.SBAGR.lie insides basket=LOC
'The egg lies in the basket.'

---

mi wo. mi ta mi wo
1SG eat 1SG leave 1SG eat
'I eat/I'm eating.' 'I'm eating.'

[28] A similar analysis is given for Mbay in Keegan (1997:26-27), except that the place nouns take a suffix containing a vowel identical to the first vowel of the stem.

[29] Keegan (2002) notes a similar phenomenon in Mbay.

(88) de˩ne˥ si˩ dɔ˩ kag˧-si˧=gə˥
woman 3SG.SBAGR.sit head chair=LOC
'The woman sits on the chair.'[30]

(89) kag˧ to˩ nang˩ be˩
tree 3SG.SBAGR.lie ground EMPH
'There is a tree lying on the ground.'

(90) wa˩la˩ wa˩la˥
'bush' 'in the bush'

4.2.3 Existential clauses

Existential clauses like (91) are structurally similar to locative clauses. Negative existential clauses use a special negative existential verb, *go˩do˥*, as in (92) and (93).

(91) dəu˨ ar˩ kəi˥
person 3SG.SBAGR.stand house
'There is someone at home./Someone is at the house.'

(92) ne˥ go˩do˥ kəi˥ nun˦
thing NEG.EXIST house over.there
'There is nothing in the house over there.'

(93) bbɔl˥ go˩do˥
bag NEG.EXIST
'There is no bag.'

4.2.4 Other stative verbs

The constructions addressed in this section are actually verbal predicates in Ngambay, but often are non-verbal predicates in other languages. This section addresses attributive clauses, verbs of cognition and perception, and possessive clauses.

Ngambay does not have adjectives. Attributive clauses contain an intransitive, attributive verb such as *ngal˧* '3SG.SBAGR.tall' in (94). Attributive verbs can be the predicate in relative clauses (e.g. *kas˩* '3SG.SBAGR.red' in (95)) or the predicate in main clauses (e.g. *oi˨* '3SG.SBAGR.heavy' in (95)).

(94) be˩rent˧ ngal˧
Brent 3SG.SBAGR.tall
'Brent is tall.'

(95) bbɔl˥ gə˥ kas˩ le˥ oi˨
bag REL 3SG.SBAGR.red DEF 3SG.SBAGR.heavy
'The red bag is heavy.'

Verbs of cognition and perception follow the normal rules of morphosyntax, as shown in (96), (97), and (98).

(96) m-gər˨ ta˩ nga˩mbai˥
1SG.SBAGR-know language Ngambay
'I know Ngambay.'

[30] This example is from Brent Brollier.

(97) m-gərˊ kristi
1SG.SBAGR-know Christy
'I know Christy.'

(98) m-oꟾ neˀ gəˀ m-aꟾ-raꟾ=lˀ[31]
1SG.SBAGR-see thing REL 1SG.SBAGR-IRR-do=NEG
'I don't see what I'm going to do.'

Clause-level possession is indicated by the idiomatic expression *auꟾ gə˩* 'go with' as illustrated in (99) and (100), where a person "goes with" the object they are possessing.

(99) m-auꟾ gə˩ bbɔlˀ=əlˀ
1SG.SBAGR-go with bag=NEG
'I do not have a bag.'

(100) m-auꟾ gə˩ lar˩
1SG.SBAGR-go with money
'I have some money.'

5. Sentence patterns

Several types of sentences show slight modification to the basic clause structure described in §4. These special sentence types include questions, commands, and negation.

5.1 Questions

Questions in Ngambay, except "why" questions, take the particle *wa˩* 'QUES' or *ta˩* 'QUES' at the end of the clause. They may also take an optional politeness marker *seʔ* 'POL' at the beginning of the clause.[32] This requires a change to our basic clause PSR as seen in (101).

(101) $S \rightarrow (POL) \left(\left\{ \begin{matrix} ADV \\ NP \\ PP \end{matrix} \right\} \right) NP_{[SUBJ]} \quad VP \left(\left\{ \begin{matrix} ADV \\ NP \\ PP \end{matrix} \right\} \right) (QUES)$

5.1.1 Content questions

The elements that can be questioned include: subject (103), object (104), secondary object (105), oblique arguments (110), and adjuncts, including time, manner, and purpose, as seen in (106)–(108). Content questions are marked with a question word that occurs *in situ* and by the question particle *waʔ* 'QUES', which comes at the end of the clause. The question word for animate entities is *naʔ* 'who'. The question word for inanimate objects is *ddiʔ* 'what'.

(102) di˩ngəm˩ arˊ de˩neˀ ta˩kirꟾ gə˩ ndɔꟾ
man 3SG.SBAGR.give woman firewood with morning
'The man gives the woman firewood in the morning.'

When *naʔ* 'who' takes the place of subjects it is followed by the particle *bbaʔ* 'EMPH' as seen in (103).

(103) naˀ bbaˀ arˊ de˩neˀ ta˩kirꟾ gə˩ ndɔꟾ wa˩
who EMPH 3SG.SBAGR.give woman firewood with morning QUES
'Who gave the woman firewood in the morning?'

[31] The enclitic =*əlʔ* 'NEG' is realized as /*l*ʔ/ following a vowel.

[32] This politeness particle can be used in commands as well as after the verb and can be pluralized along with the verb.

(104) di˩ngəm ar˩ de˩ne˥ ddi˥ wa˩
man 3SG.SBAGR.give woman what QUES
'What did the man give the woman?'

(105) di˩ngəm˩ ar˩ ta˩kir˧ na˥ gə˩ ndɔ˥ wa˩
man 3SG.SBAGR.give firewood who with morning QUES
'To whom did the man give the firewood in the morning?'

Question words for adjuncts occur before the particle *wa˥* 'QUES' as seen in (106), (107), and (108). The exception to this is "why" questions which do not take the *wa˥* 'QUES' as seen in (110).

Two different question words or phrases are used for time adjuncts. The first, in (106), is used when the action occurred on the same day that the question was asked; the second, in (107), is used when the action occurred on another day.

(106) di˩ngəm˩ ar˥ ta˩kir˧ de˩ne˥ kar˥gə˥ban˩=gə˥ wa˩
man 3SG.SBAGR.give firewood woman when=LOC QUES
'When today did the man give the firewood to the woman?'

(107) di˩ngəm˩ ar˩ ta˩kir˧ de˩ne˥ ndɔ˧ gə˥ ra˥=gə˥ wa˩
man 3SG.SBAGR.give firewood woman day REL where=LOC QUES
'What day did the man give the woman firewood?'

(108) de˩ne˥ ndir˩ ri˩si˥ gə˧ban˧ wa˩
woman 3SG.SBAGR.cook rice how QUES
'How does the woman cook rice?'

(109) di˩ngəm˩ u˩nda˩ bi˥si˧ gə˩ mba˧ ri˥
man 3SG.SBAGR.hit dog with so.that what
'Why did the man hit the dog?'

When oblique arguments are questioned the question word replaces the NP constituent that follows the preposition as seen in (110).

(110) di˩ngəm˩ u˩nda˩ ku˥nda˧ gə˩ ddi˥ wa˩
man 3SG.SBAGR.hit horse with what QUES
'With what did the man hit the horse?'

5.1.2 Yes-No questions and tag questions

Yes-No questions, including alternative questions, are formed like basic declarative sentences followed by *wa˥* 'QUES' and often preceded by the politeness marker *se˥* 'POL' as seen in (111)–(112).

(111) se˥ di˩ngəm˩ u˩nda˩ ku˥nda˧ gə˩ ddi˥ wa˩
POL man 3SG.AGR.hit horse with what QUES
'Did the man hit the horse?'

(112) se˥ di˩ngəm˩ au˩ bbe˩ wa˩
POL man 3SG.SBAGR.go again QUES
'Did the man go again?'

Tag questions anticipating a positive answer are negated by =*ə1˥* 'NEG' which is preceded by *ya˩* 'EMPH' as seen in (113).

(113) to˧ da˧-biã˧ ya˩=l˥ wa˩
COP meat-goat EMPH=NEG QUES
'This is goat meat, isn't it?'

Tag questions anticipating a negative response are negated by *=əl˥* 'NEG' and followed by the *ta˥* 'QUES', as in (114).

(114) to˦ da˦-biang˦=əl˥ ta˩
COP meat-goat=NEG QUES
'This isn't goat meat, is it?'

5.2 Commands

Commands are identical to declarative sentences with second person subjects, although it is usually clear which mood the sentence has by the context and the speaker's manner of speech (more authoritative for commands than for declarative statements). There is no intonation difference between the two. Sentences (115) and (116) are examples of transitive verbs with singular (115) and plural (116) subjects, while (117) and (118) are examples of commands with an intransitive verb. This requires no change to the previous PSRs.

(115) to˦ji˦=m lai˧
2.SBAGR.show=1SG.OBJ garlic
'Show me the garlic./You show me the garlic.'

(116) to˦ji˦=m=je˦ lai˧
2.SBAGR.show=1SG.OBJ=PL garlic
'Show me the garlic./ You (PL) show me the garlic.'

(117) nja˦
2.SBAGR.walk
'Walk./ You walk.'

(118) nja˦=je˦
2.SBAGR.walk= PL
'Walk./ You (PL) walk.'

Negative commands are formed the same way as negative declarative sentences, as shown in (119). The negation enclitic *=əl˥* occurs at the end of the sentence.

(119) si˥ nang˩=əl˥
2.SBAGR.sit ground=NEG
'Don't sit down./You are not sitting down.'

5.3 Negation

Almost every type of sentence is negated by placing the negation enclitic *=əl˥* at the end of the sentence, as shown in (120).[33] The only exception is the negative existential which uses a special verb, *go˩/do˥,* instead of the negation enclitic, as shown in (121).

(120) j-o˧ dəu˦=l
1PL.SAGR-see person=NEG
'We didn't see anyone.'

(121) ne˥ go˩do˥ kəi˥ nun˥
thing NEG.EXIST house over there
'There is nothing in the house over there.

[33] When it attaches to a word ending in a vowel, the /ə/ is deleted and it is just *=l.*

Negation of specific constituents does not have to be marked, but if speakers wish to specify what is being negated, they place the emphasis particle *bba˥* after this constituent, as seen in (122).

(122) bi˥si˧ bba˥ aĩɹ=l˥
dog EMPH 3SG.SAGR.run=NEG
'It's not the dog that ran.'

The addition of the negation particle to the PSR is shown in (123).

(123) $S \rightarrow (POL) \left(\left\{ \begin{matrix} ADV \\ NP \\ PP \end{matrix} \right\} \right) NP_{[SUBJ]} \quad VP \left(\left\{ \begin{matrix} ADV \\ NP \\ PP \end{matrix} \right\} \right) \quad (NEG) \quad (QUES)$

5.4 Subordinate Clauses

Subordinate clauses are dependent on another constituent. The three basic types of subordinate clauses are complement clauses, adjunct clauses, and relative clauses.

5.4.1 Complement clauses

So far we have only found complement clauses to be primary objects of the matrix verb, as seen in Figure 10. This requires a slight modification to our V' PSR, as illustrated in (124).

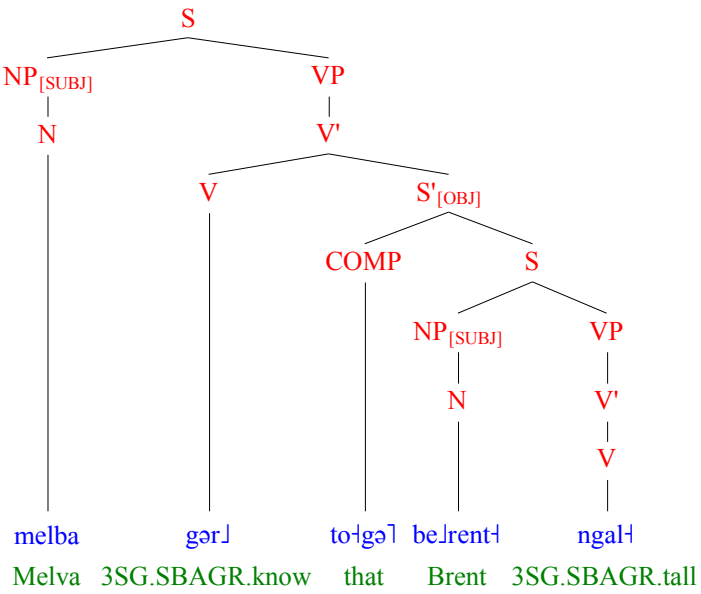


Figure 10: 'Melva knows that Brent is tall.'

(124) $V' \rightarrow V \left(\left\{ \begin{matrix} S'_{[OBJ]} \\ NP_{[XCOMP]} \\ NP_{[OBJ]} \end{matrix} \right\} \right) \quad (NP_{[OBJ2]}) \quad (NP_{[OBL]})$

The structure of complement clauses differs slightly according to the semantic class of the matrix verb. So far we have found four semantic classes:

5.4.1.1 Knowing, thinking, believing, etc.

Cognition verbs take the complementizer *to˧gə˥*, and the complement clause is a full clause with its own subject, verb, etc. in the same order they appear in main clauses. The verb in the subordinate clause can be fully inflected for tense and aspect. Sentence (125) illustrates a cognition verb with a complement clause.

(125) m-gər˩˥ to˧gə˥ bi˥si˧ kor˥˧ ku˧nja˥
1SG.SBAGR-know COMP dog 3SG.SBAGR.chase chicken
'I know that the dog chased the chicken.'

5.4.1.2 Desire

With verbs of desire, the complement clause takes no complementizer and its verb is in the infinitive form, as in (126). There is no subject in the subordinate clause, but it can have objects which appear after the verb as usual.

(126) m-ndi˩gi˩ k-au˧ bbe˧˥
1SG.SBAGR-want INF-go home
'I want to go home.'

5.4.1.3 Saying, asking

Complement clauses can occur with the speech verb *pa˩* or the verb *də˩ji˩* 'to ask'. The complement clause takes the complementizer *na˩*. It appears that *pa˩* is used to mean both 'say' and 'ask'. These complement clauses generally contain direct speech.[34] They contain their own subject, verb, and optional objects which occur in normal word order. The verb in the complement clause can be fully inflected for tense and aspect. Sentence (127) is an example of a simple statement in the complement clause.

(127) deu˧ le˥ pa˩ na˩ bad˩ le˥ nda˩
person DEF 3SG.SBAGR.say COMP sheep DEF 3SG.SBAGR.white
'The person said that the sheep is white.'

When the complement clause is a question, it takes the same form as a normal question, beginning with *se˥* and ending with *wa˩* as illustrated in (128).

(128) us˧man˥ pa˩ na˩ se˥ ndi˩gi˩=je˧ kəi˧-a˧la˥ lə˩
Ousmane 3SG.SBAGR.say COMP POL 2.SBAGR.want=PL house-God of

ka˧to˧lik˥=je˧ e˩se˥ kəi˥-a˥la˩ lə˩ pos˩tan˩=je˧ wa˩
Catholic=PL or house-God of Protestant=PL QUES
'Ousmane asked, "Do you want the Catholic church or the Protestant church?"'

5.4.1.4 Causative

Complement clauses are used in causative constructions, as seen in Figure 11. Although similar to serial verb constructions, the two verbs found in causatives each have their own subject and therefore exhibit a subordinate construction. The causer is the subject of the matrix clause, and *ar˧* 'give' is the matrix verb.[35] The causee is the subject of the complement clause. No complementizer is used. All elements of the sentence appear in normal word order. The verb in the subordinate clause is fully inflected for tense and aspect.[36]

[34] In the Protestant translation of the Bible these types of sentences contain indirect speech as a result of the orthography which does not mark tone. This originally did not sound natural in speech, but since it is used in the Bible translation, speakers sometimes use this structure when speaking in church.
[35] Here 'give' may be better glossed as 'CAUS'.
[36] Kroeger (2004:237) gives an example of a similar analytical causative construction in Tariana with the verb 'give' functioning as the matrix verb.

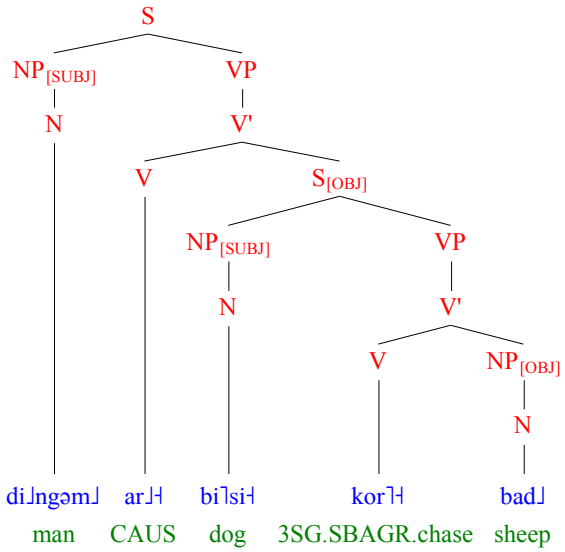


Figure 11: 'The man makes the dog chase the sheep.'

5.4.2 *Adjunct/adverbial clauses*

We have very few examples of adjunct clauses. They appear to take different complementizers depending on what type of adjunct they are (*bbaʔ naɻ* for purpose adjuncts, *bboɻleʔ (toɬ) gəʔ* for conditional clauses). Adjunct clauses take their own subjects, verbs, and objects in normal word order and they can be inflected for tense and mood as seen in Figure 12.

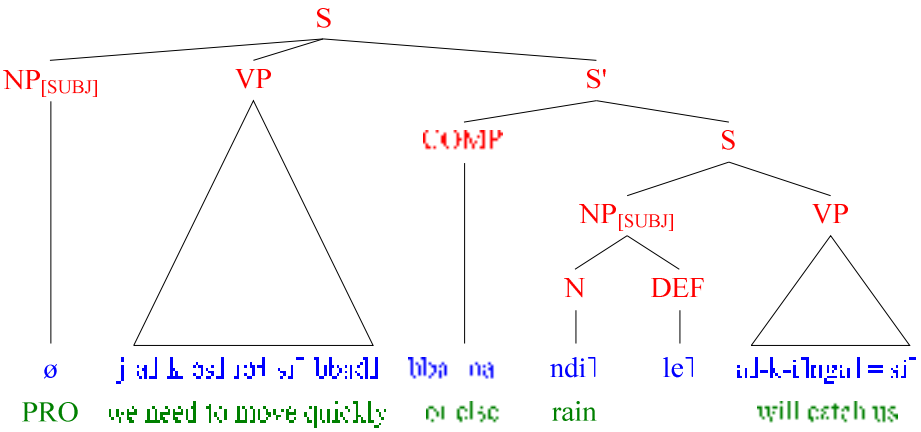


Figure 12: 'We need to move quickly or else the rain will catch us.'

This requires the addition of an S' to the adjunct slot in the PSR for clauses as shown in (129).

(129) $S \rightarrow (POL) \left\{ \begin{matrix} ADV \\ NP \\ PP \\ S' \end{matrix} \right\} NP_{[SUBJ]}\ VP \left\{ \begin{matrix} ADV \\ NP \\ PP \\ S' \end{matrix} \right\} (NEG)\ (QUES)$

5.4.3 *Relative clauses*

Relative clauses take the relativizer *gəʔ*. They are externally-headed, post-nominal, and use the gap strategy to indicate the grammatical relation of the head noun, as seen in Figure 13.

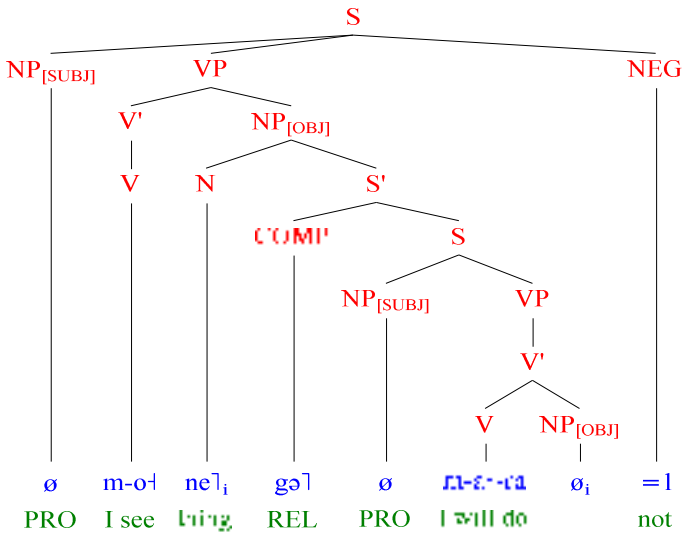


Figure 13: 'I don't see what I'm going to do.'

The relativized function of the head nouns can be subject (Figure 14), primary object (Figure 15), or oblique (Figure 16).

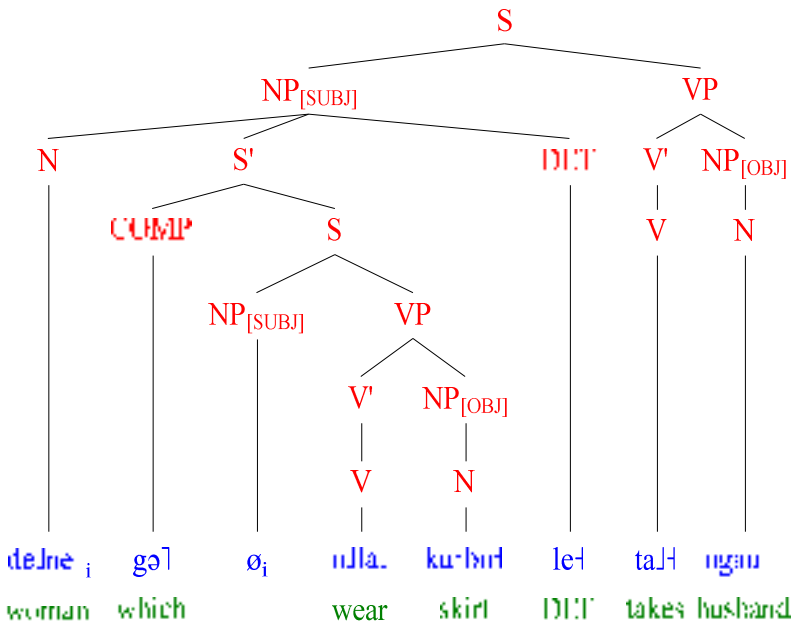


Figure 14: 'The woman who is wearing a skirt is married.'

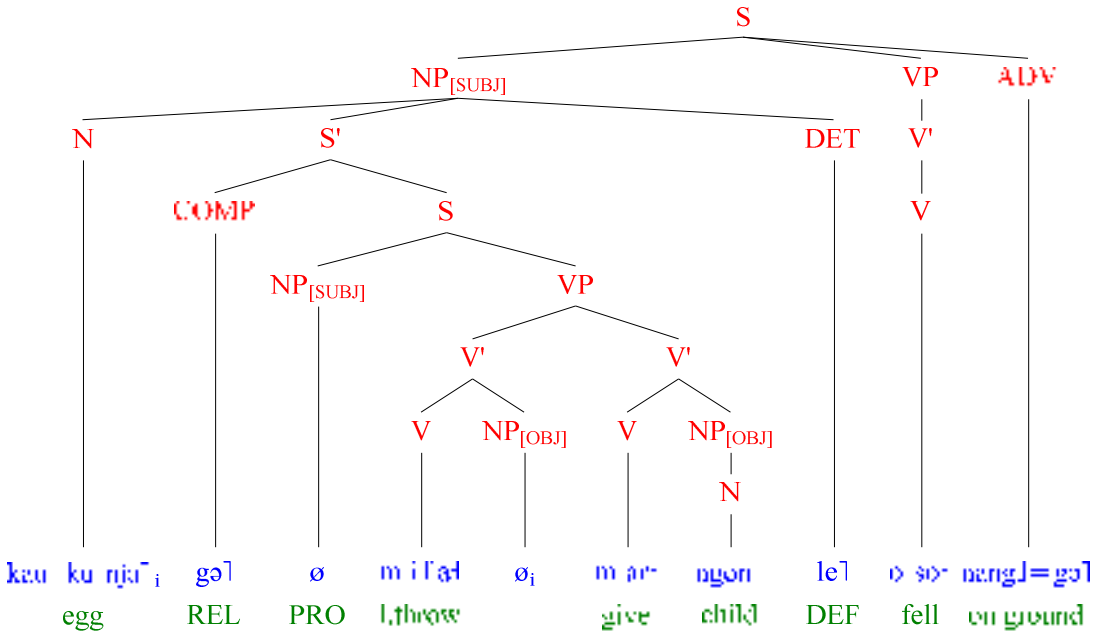


Figure 15: 'The egg which I threw to the child fell on the floor.'

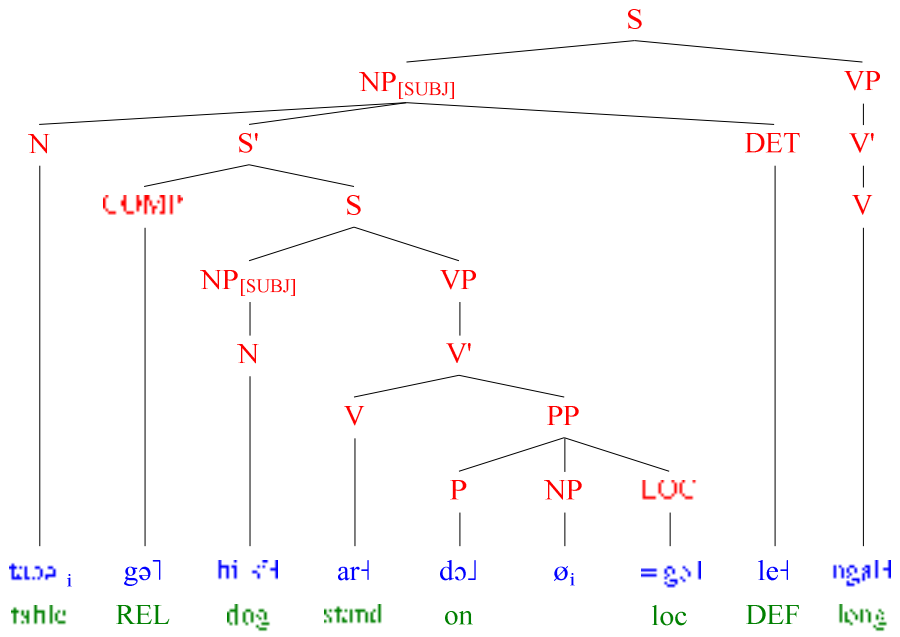


Figure 16: The table that the dog is on is long.

When the head noun has the relativized function of object of the second verb in a serial verb, it uses a resumptive pronoun strategy as seen in Figure 17.

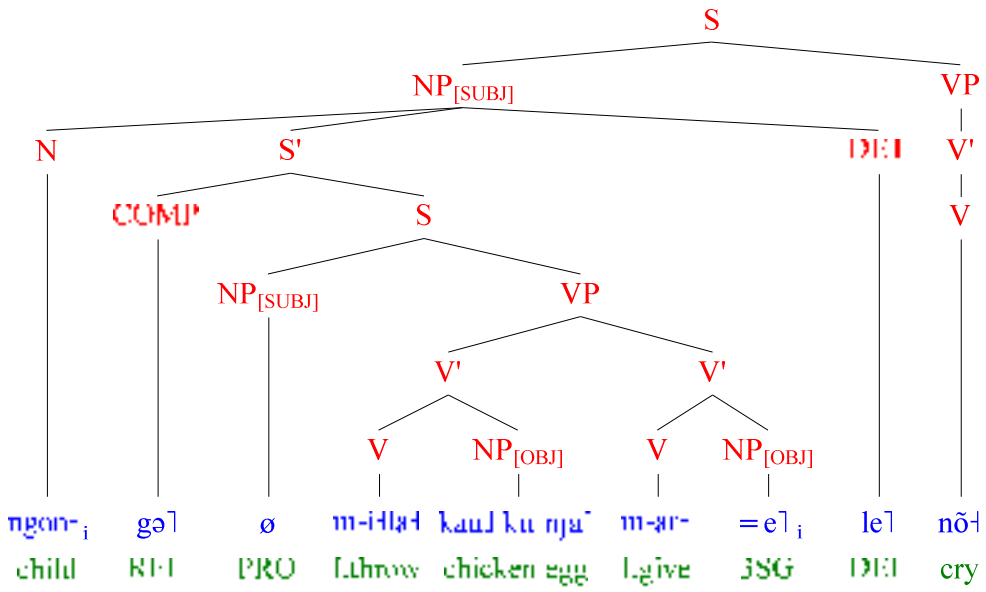


Figure 17: The child that I threw the egg to cried.

6. Conclusion

Ngambay has several interesting grammatical features. There are no adjectives; concepts which typically occur as adjectives in Indo-European languages are conveyed by verbs. The benefactive arguments and progressive aspect are both conveyed by serial verbs. The causative construction uses a subordinate clause with the verb 'to give' as the matrix verb. Verbal inflection is largely dependent on tone. All of these features warrant further study for a better understanding.

Appendix A

The consonant and vowel phonemes of Ngambay are shown in Table 5 and Table 6. These phonemes are represented with the International Phonetic Alphabet (IPA). For the purposes of this paper several phonemes are given orthographic representations. These orthographic representations are shown in parentheses next to the IPA symbol.

Table 5: Consonant Phonemes and Orthographic Representation

	Labial	Alveolar	Alveopalatal	Velar
Stops: Voiceless Voiced	p b	t d		k g
Prenasalized	ᵐb (mb)	ⁿd (nd)	ⁿd͡ʒ (nj)	ᵑg (ng)
Fricative/Affricates		s	d͡ʒ (j)	
Implosive	ɓ (bb)	ɗ (dd)		
Nasal	m	n	ɲ (ny)	
Trills/Flaps	□ (v)	r		
Lateral		l		
Approximant			j (y)	w

Table 6: Vowel Phonemes and Orthographic Representation

	Oral			Nasal		
	Front	Central	Back	Front	Central	Back
Close	i		u	ĩ		ũ
Mid	ɛ (e)	ə	o ɔ	ɛ̃ (ẽ)		õ ɔ̃
Open		a			ã	

Appendix B

Verbs that take iterative forms are marked with an asterisk.

Class 1

High-Tone Verbs

bi˥	‘wipe’	mbəl˥	‘pour; exchange money’	tɔ˥	‘tie’
dəb˥	‘cover (with hard thing)’	mbõ˥	‘gather’	tɔl˥	‘peel’
jeng˥	‘cut into small pieces’	ndo˥	‘teach; learn’	tel˥	‘return’
kã˥	‘go to bathroom’	ndum˥	‘race’	ti˥	‘cut (a plant)’
kul˥	‘prepare slimy sauce’	ngə˥	‘scratch (body)’	tĩ˥	‘separate’
la˥	‘help; build a shelter’	si˥	‘tug’	to˥	‘blow’
		ta˥	‘stir (liquid, porridge)’		

Mid-Tone Verbs

bbar˧	‘call’	na˧	‘test’	sə˧mə˧	‘jog’
bbi˧	‘solidify’	na˧ji˧	‘dispute’	si˧gi˧	‘try to pull’
ga˧ji˧	‘break a piece off’	ndam˧	‘play’	su˧la˧*	‘talk out of, dissuade’
ja˧ne˧	‘scatter something’	ndə˧ji˧	‘give advice’	su˧ra˧	‘pound slightly to clean’
jom˧	‘cook slowly’	ndi˧ma˧	‘borrow/lend’	swa˧	‘cook lightly with water’
kai˧	‘dish out food, give out’	ndo˧go˧	‘buy’	tã˧	‘cut open’
ke˧be˧	‘considerate’	ndu˧bu˧	‘explode’	tar˧	‘dislike, not believe in’
ki˧la˧	‘spring like a trap’	ndu˧na˧	‘lean’	tɔ˧	‘break’
ko˧de˧	‘dig out (like a splinter)’	ndu˧su˧	‘brittle’	tɔ˧	‘hurt'
koi˧	‘take out of shell’	ngal˧	‘tall’	tĩ˧	‘turn over while drying’
kol˧	‘get into an argument’	ni˧	‘dream’	ti˧bi˧	‘get near’
ko˧re˧	‘prepare by turning’	nja˧	‘walk’	to˧	‘fetch water’
kul˧	‘weak’	njã˧	‘husk’	to˧go˧	‘to wash’
la˧	‘dance’	nõ˧	‘cry’	toi˧	‘peel (banana)’
lə˧	‘paddle; punt; ferry’	nyã˧	‘many’	to˧ji˧	‘show’
lo˧	‘spread’	po˧le˧	‘worship, adore’	tol˧	‘kill’
lol˧	‘damp’	ra˧	‘do’	to˧me˧	‘vomit’
mã˧	‘transplant’	rɔ˧	‘fight’	tu˧na˧	‘borrow/lend’
mbiri	‘torture’	rend˧	‘seal’	tu˧su˧	‘scrape off’
mbi˧sa˧	‘massage’	sa˧	‘swift’	twa˧	‘dish out fufu’
mbo˧de˧	‘crumble, disintegrate’	sag˧	‘sprinkle’	war˧	‘cook lightly'
mboĩ˧	‘massage with hot water’	saĩ˧	‘have bad luck’	wil˧	‘seep’
mbu˧la˧	‘stuff into’	sa˧ne˧	‘sow’		

Low-Tone Verbs

buꜜlaꜜ	‘be many’
dabꜜ	‘be lazy’
dauꜜ	‘be tired’
deᵐjiꜜ	‘ask’
doꜜleꜜ	‘roof a house’
kasꜜ	‘red’
kɔiꜜ	‘beg’
naĩꜜ	‘remain’
naꜜjiꜜ	‘spread out to dry’
ndaꜜ	‘white’
ndɔꜜjiꜜ	‘out of control, rebellious’
ndiꜜgiꜜ	‘want’
ndirꜜ	‘cook’
ndoꜜleꜜ	‘look for’
ndulꜜ	‘black’
ndumꜜ	‘rot’
ngərꜜ	‘eat dry grains’
njaꜜreꜜ*	‘cut into strips’
paꜜ	‘say’
riꜜsiꜜ	‘push, nudge’
ruꜜsuꜜ	‘fill up’
saꜜleꜜ	‘go unnoticed’
soꜜreꜜ	‘twist’
toꜜ	‘lay down’
yoꜜleꜜ	‘singe’

Low-mid Tone Verbs

borˋ	‘wipe’
duꜜbuꜛ	‘sow’
dumˋ	‘stubborn’
gərˋ	‘know’
koꜜgoꜛ	‘laugh’
kuꜜmanꜛ	‘hold a grudge’
kuꜜnjaꜛ	‘spurt out’
laꜜbəꜛ	‘burn on bottom’
lalˋ	‘lack’
leˋ	‘melt’
maꜜnəꜛ	‘curse’
miˋ	‘be mean-looking’
naꜜjiꜛ	‘swear’
ndɔˋ	‘hoe’
ndeꜜngəꜛ	‘have diarrhea’
ndoˋ	‘be poor’
ndoꜜgoꜛ	‘wash (shower)’
ndoꜜleꜛ	‘dry out’
nəꜜdəꜛ	‘burn’
ngeꜜneꜛ	‘use portion by portion’
ngiꜜsaꜛ	‘shave’
raꜜbəꜛ	‘peddle’
reˋ	‘come’
rəꜜdəꜛ	‘extract oil by cooking’
saˋ	‘scoop up’
sẽˋ	‘be small'
sĩˋ	‘eat fufu with sauce’
soˋ	‘carefree’
soꜜdəꜛ	‘stick out’
soꜜgəꜛ	‘pick a scapegoat’
suꜜguꜛ	‘rinse’
suꜜlaꜛ	‘stick out’
swaˋ	‘thresh’
taˋ	‘take’
taꜜgəꜛ	‘strain’
tẽˋ	‘get out’
tuꜜmanꜛ	‘groan, moan’
yəꜜnəꜛ	‘make a face’

High-mid Tone Verbs

beᵐleꜛ	‘boastful’
biᵐriꜛ	‘turn around, spin’
buᵐjiꜛ	‘decimate’
gaᵐgeꜛ	‘nag’
gaᵐjiꜛ	‘grind coarsely’
gaᵐreꜛ	‘cut into sections’
gəᵐgəꜛ	‘dust off powder by tapping’
gərᵛ	‘dig out, burrow’
kaᵐsəꜛ	‘extract oil by pounding’
kəᵐsəꜛ	‘cough’
korᵛ	‘chase’
koᵐriꜛ	‘blab’
laᵐbəꜛ	‘cover (with blanket etc.)’
liᵐaꜛ	‘cool porridge’
mboᵐjiꜛ	‘measure volume’
mboᵐreꜛ	‘squeeze’
ndaᵐjiꜛ	‘imitate’
ndaᵐngəꜛ	‘scold’
ndoᵐleꜛ	‘sparkling, shiny’
ndorᵛ	‘pull’
nduᵐruꜛ	‘pile up’
ngərᵛ	‘tickle’
ngəᵐsəꜛ	‘nudge’
ngiᵐnaꜛ	‘wait’
nuᵐngaꜛ	‘cook over open fire’
piᵐdiꜛ	‘glorify’
piᵐndiꜛ	‘be tangled up’
poᵐleꜛ	‘burn’
raᵐdəꜛ	‘get liquid on something’
rəᵐbəꜛ	‘pound slightly’

ru˥ndu˦ ‘break up powder’
sa˥ngə˦ ‘look for’
ti˥ã˦ ‘glue’
ti˥bi˦ ‘warm over a fire’
tu˥du˦ ‘untie’

tu˥ga˦ ‘chop’
tu˥ji˦ ‘spoil, destroy’
tu˥la˦ ‘bury or cover a hole’
tu˥ra˦ ‘count, read’

twa˩ ‘bail’
yər˩ ‘squat’
yo˥le˦ ‘burn’

Mid-high Tone Verbs

bbəl˧ ‘be afraid’
kə˦rə˥ ‘scratch’
lə˦gə˥ ‘boil, infuse’

mba˦də˥ ‘refuse’
ndo˦go˥ ‘shine’
ndol˦ˀ ‘criticize’

ndu˦ru˥ ‘be wrinkled’
til˧ ‘tear’
tõn˧ ‘lick’

Low-high Tone Verbs

boi˨ ‘be big’

soi˨ ‘bore (a hole)’

goꜜdo˥ ‘NEG.EXIST’

Class 2

a˥ ‘watch, guard’
ar˥ ‘stand; be’
ər˥ ‘urinate’
il˥ ‘suck’

in˥ ‘get up’
õ˥ ‘eat (fufu, candy)’
oi˥ ‘die’
ɔl˥ ‘sharpen’

un˥ ‘take’
yã˥ ‘leave something’

Class 3

ai˦ ‘drink’
aĩ˦ ‘run away’

al˦* ‘jump’
au˦ ‘go’

o˦ ‘see’
oi˦ ‘be heavy’

Class 4

a˦də˦ ‘be bitter’
a˦ndə˦ ‘bear fruit’
ar˦ ‘give’
ə˦mə˦ ‘breathe’
ə˦nji˦ ‘think, dislike’
i˦nji˦ ‘blow nose’

o˦do˦* ‘pick up’
o˦gə˦ ‘refuse, prevent, hinder’
o˦ji˦ ‘weave’
o˦le˦ ‘boil’
u˦ba˦ ‘pile’

u˦du˦ ‘close’
u˦ga˦ ‘pay’
u˦ru˦ ‘saw’
u˦su˦ ‘take down from fire’

Class 4A

i˦la˦* ‘throw’

o˦so˦* ‘fall’

Class 4B

or˦* ‘take out’

u˦nda˦* ‘put’

Class 5

aˈgəꜜ	‘crawl’	oˈjiꜜ	‘give birth’	uˈlaꜜ	‘tell; wear’
ɔsꜛ	‘sing, poke, grab’	oˈleꜜ	‘be hyper’	uˈsɔꜜ	‘eat’
iˈbiꜜ	‘fan’	omꜛ	‘pour’	uˈsuꜜ	‘scrub’
iˈngaꜜ	‘find; meet’	oˈreꜜ	‘press’	waˈ ꜜ	‘hold’
iˈsiꜜ	‘sit; stay’	uˈbuꜜ	‘spit (water)’	yãꜛ	‘leave, abandon’

Class 5A

uˈbaꜜ*	‘stomp’	uˈlaꜜ*	‘put; send; plant’	uˈnjaꜜ*	‘cut’
uˈguꜜ*	‘pinch’	uꜜndaꜜ*	‘hit’		

Class 5B

əˈndəꜜ*	‘smell; sniff’	uˈruꜜ*	‘swallow, pound, dig’
iˈgiꜜ*	‘get lost’		

Appendix C

Table 7: Trisyllabic Verbs

		REALIS	IRREALIS
ngə˧bə˧rə˧ 'to climb (up mountain with difficulty)'	1SG	m- ngə˧bə˧rə˧	m-a˧-ngə˧bə˧rə˧
	3SG	ngə˧bə˧rə˧	aꜜ-ngə˧bə˧rə˧
	3PL	ngəꜛbə˧rə˧	d-aꜛ-ngə˧bə˧rə˧
sa˧ngə˧la˧ 'to stir (ground meat/beans)'	1SG	m-sa˧ngə˧la˧	m-a˧-sa˧ngə˧la˧
	3SG	sa˧ngə˧la˧	aꜜ-k-sa˧ngə˧la˧
	3PL	saꜛngə˧la˧	d-aꜛ-sa˧ngə˧la˧
jaꜛgə˧la˧ 'to sort out (things in a pile)'	1SG	m-ja˧gə˧la˧	m-a˧-jaꜛgə˧la˧
	3SG	ja˧gə˧la˧	aꜜ-jaꜛgə˧la˧
	3PL	jaꜛgə˧la˧	d-aꜛ-jaꜛgə˧la˧
baꜛdə˧ra˧ 'soccer goalie trying to be as big as possible'	1SG	m-baꜜdə˧ra˧	m-a˧-baꜛdə˧ra˧
	3SG	baꜛdə˧ra˧	aꜜ-baꜛdə˧ra˧
	3PL	baꜛdə˧ra˧	d-aꜛ-baꜛdə˧ra˧
juꜜnguꜛlu˧ 'to mess up string-like objects'	1SG	m- juꜜnguꜛlu˧	m-a˧-juꜜnguꜛlu˧
	3SG	juꜜnguꜛlu˧	aꜜ-juꜜnguꜛlu˧
	3PL	juꜛ ꜜnguꜛlu˧	d-aꜛ-juꜜnguꜛlu˧
kə˧dəꜛrə˧ 'to be hard, difficult'	1SG	m-kə˧dəꜛrə˧	m-a˧-kə˧dəꜛrə˧
	3SG	kə˧dəꜛrə˧	aꜜ-kə˧dəꜛrə˧
	3PL	kəꜛ ˧dəꜛrə˧	d-aꜛ-kə˧dəꜛrə˧

Abbreviations

-	Morph break
˥	High tone
˦	High to Mid tones
˧	Mid to High tones
˩	High to Low tones
˨	Low to High tones
˩˧	Low to Mid tones
˧	Mid tone
˩	Low tone
˥˧˥	High-Mid-High tones
˥˨˧	High-Low-Mid tones
( )	Optional constituent
*( )	Constituent obligatory, not optional
$*_{sentence}$	Ungrammatical sentence
[ ]	grammatical relations; Inflectional Rules
{ }	Either, or
=	Clitic break, treat as grammatical word
Δ	Details of constituent not shown
→	Is composed of; Inflectional changes
↔	Word formation and derivation changes, applies in either direction
§	Section
1	First person (communicator, speaker)
2	Second person (audience, hearer)
3	Third person (others outside of speech event)
ADV	Adverb
C	Consonant
CAUS	Causative
COMP	Complementizer
CONJ	Conjunction
COP	Copular verb
DEF	Definite
DET	Determiner
ed.	editor
EMPH	emphasis
i	referent
INF	Infinitive
IPA	International Phonetic Alphabet
IRR	Irrealis tense
ITER	Iterative aspect
LOC	Locative
N	Noun
NEG	Negation
NP	Noun Phrase or its substitutes like pronoun, proper noun}
ø	zero morpheme (unpronounced set member)
OBJ	(Primary) Object
OBJ2	Secondary object
OBL	Oblique
P	Preposition
PCC	Position Class Chart
PL	plural
POSS	Possessor
PP	Preposition Phrase; Postposition Phrase
PRO	Pronoun; invisible pronoun dropped usually because verb agreement marked
PSRs	Phrase Structure Rules
QUANT	Quantifier
QUES	Question
RCP	Reciprocal
REAL	Realis tense
REDUP	Reduplication
REL	Relativizer
REP	Reported speech
S	Sentence or Clause
S'	S-bar upper-level unit of Sentence complements
SBAGR	subject agreement
SG	singular
SUBJ	Subject
TAM	Tense-Aspect-Modality
V	Verb, or Vowel
V'	V-bar
VP	Verb phrase; a verb and its objects & obliques
WFR	Word Formation Rules
x̃	Nasalized vowel
X*	Sequence zero or more of X sister structures
XCOMP	Some type of complement like AP, NP, PP

References

Blansitt, Edward L., Jr. 1975. Progressive aspect. *Working Papers on Language Universals* 18.1-34.

Bruce, Les. 1988. Serialization: From syntax to lexicon. *Studies in Language* 12.19-49.

Dalyrimple, Mary. 1993 *The syntax of anaphoric binding*. Stand ford, CA: CSLI Publications

Gordon, Raymond G., Jr. (ed.) 2005. *Ethnologue: Languages of the world, fifteenth edition*. Dallas: SIL International. Online version: http://www.ethnologue.com/.

Keegan, John M. 1997. *A reference grammar of Mbay*. Newcastle: LINCOM EUROPA.

Keegan, John M. 2002. Posture Verbs in Mbay. *The linguistics of sitting, standing, and lying*, ed. by John Newman, 333-58. Amsterdam: John Benjamins.

Kroeger, Paul. 2004. *Analyzing syntax: A lexical-functional approach.* Cambridge, UK: Cambridge University Press.

Kroeger, Paul. 2005. *Analyzing grammar: An introduction*. Cambridge, UK: Cambridge University Press.

Ndjerassem, Mbai-yelmia Ngabo. 1982. *Phonologie, morphologie, et categories crammaticales du Ngambay de Benoye (Tchad méridional).* Unpublished doctoral dissertation, University de la Sorbonne Nouvelle, Paris.

Ndjerassem, Mbai-yelmia Ngabo. 2000. *Phonologie du Ngambai, parler de Benoye (Tchad).* University of Leipzig Papers on Africa. Leipzig.

Patman, Frankie. 1991. Tone in the Nugunu verb phrase. *Tone in five languages of Cameroon*, ed. by Stephen C. Anderson, 73-90. (Summer Institute of Linguistics and the University of Texas at Arlington Publications in Linguistics, 102.) Dallas: Summer Institute of Linguistics and the University of Texas at Arlington.

Thayer, James Edward. 1978. *The deep structure of the sentence in Sara-Ngambay dialogues*. Dallas: SIL & University of Texas in Arlington.

Vandame, Charles. 1974. *Manuel d'Initiation au Ngambay.* N'Djamena: Librairie Notre-Dame.

Zwicky, Arnold M., and Geoffrey K. Pullum. 1983. Cliticization vs. inflection: English *n't. Language* 59.502-13.