Studies in African Linguistics

Editor
David Odden

Associate Editors
G. Tucker Childs (Portland State University)
Bruce Connell (York University)
Katherine Demuth (Brown University)
Omar Ka (University of Maryland, Baltimore)
Ronald P. Schaefer (Southern Illinois University)
John V. Singler (New York University)

Publisher
The Department of Linguistics and the Center for African Studies
Ohio State University, Columbus, Ohio

Cover Design
Tina Messmer

Journal webpage: http://ling.osu.edu/sal

Studies in African Linguistics is published twice a year. Occasional supplements are published at irregular intervals and are available to current subscribers at reduced rates. It is printed and bound in the United States by Western Newspaper Publishing Co., Inc., Indianapolis, Indiana.

Contributions to the journal should be sent to: The Editor, *Studies in African Linguistics*, Department of Linguistics, 222 Oxley Hall, Ohio State University, Columbus, OH 43210. Contributors please refer to "Guidelines for Contributors" inside the back cover.

Correspondence concerning subscriptions or other business should be sent to: Managing Editor, *Studies in African Linguistics*, Department of Linguistics, 222 Oxley Hall, Ohio State University, Columbus, OH 43210. Subscription rates are the following:

	North America	*Elsewhere*
Individuals	$25.00 per year	$33.00 per year
Institutions:	$50.00 per year	$60.00 per year
Single issue:	one half the yearly rate	
Supplements:	variable price depending on supplement	

Make checks payable to **Studies in African Linguistics.**

Volume 35, Number 1 • 2006

Copyright © 2006
by Studies in African Linguistics, Ohio State University
ISSN 00390-3533

Studies in African Linguistics

Volume 35, Number 1 Spring 2006

TABLE OF CONTENTS

Boniface Kawasha	**The structure of complement clauses in Lunda**	1
David Odden	**Topics in Taita tone II**	33
Mary Paster	**Aspects of Maay phonology and morphology**	73
Publications received		121
Upcoming meetings on African languages/linguistics		125
Guidelines for contributors		inside back cover

Studies in African Linguistics
Volume 35, Number 1, 2006

THE STRUCTURE OF COMPLEMENT CLAUSES IN LUNDA*

Boniface Kawasha
Savannah State University

This paper provides a functional and descriptive study of complement clauses in Lunda, a language spoken in Zambia. While the structure of infinitival complement clauses is analogous to that found in many languages, other types of complement clauses present unique morphosyntactic features. Some dependent constructions are introduced by complementizers which agree in person and number with the subject of the main clause. These complementizers derive from personal possessive pronouns rather than from the verb of saying, as is the case in some Bantu languages, and they have other functions besides introducing embedded clauses. Other clauses disallow complementizers and the verb shows no temporal reference, coding either the perfect or progressive aspect. The interpretation of time in such clauses is dependent on that of the main clause.

1. Introduction.

This paper is a study of the structural properties of the various types of complement clauses in Lunda, a Bantu language spoken in the Northwestern province of Zambia. It does not deal with other kinds of complex constructions such as relative clauses, conditionals and adverbial clauses, as these constructions display different morphological and syntactic behavior from complement clauses. The constructions can be divided into three distinct categories: infinitival complement clauses, clauses without complementizers, and those that are introduced by complementizers. While infinitival complement clauses do not generally seem to be different from those of other languages, one type of finite complement clause presents a unique morphosyntactic feature, in that the complementizer is variable,

* I thank two anonymous reviewers, who read the first version of this paper, for their helpful comments.

agreeing in person and number with the subject of the main clause. Additionally, the same type of complementizers introduce the complement of the direct object and the locative noun phrase. These complementizers also appear in interrogative constructions attached to the question morpheme *-di* after verbs of saying.

The paper is organized as follows: Section 2 briefly looks at the syntactic and semantic properties of infinitival complement clauses. Section 3 deals with finite complement clauses which disallow complementizers. Section 4 is concerned with complement clauses that are obligatorily introduced by complementizers, and Section 5 provides a summary of the study.

2. Infinitival Complement Clauses.

As in other Bantu languages, the verb of an infinitival clause is not marked with tense and lacks an overt nominal subject. In Lunda, an infinitival complement clause is characterized by the verb stem prefixed with the infinitive marker *ku-*. With respect to their syntactic behavior, such clauses can further be grouped into two subdivisions, one group of which consists of complement clauses whose verbs lack an expressed subject, while the other type possesses an overtly expressed subject that is different from that of the verb of the main clause.

2.1 Infinitival complement clauses after one-place verbs. The verb of the embedded infinitival complement clause has no overt syntactic subject; the nominal subject remains unexpressed in the clause since it is understood as being the same as that of the verb of the main clause. Semantically, the subject of the main clause is co-referential with the subject of the infinitive complement clause. The verb of the main clause codes what Givón (1990, 2001) refers to as "inception, termination, continuation, success, failure, attempt, intent, ability, obligation, and possibility."

(1) a. Mumbanda watumba kachâyi.
mu-mbanda wu -a -tumb -a ka-châyi.
1 -woman SA1-TNS-plant-fv 12 -finger millet
'The woman planted finger millet.'

b. Mumbanda wamanisha kutumba kachayi.
mu-mbanda wu -a -man -ish -a ku -tumba ka-chayi.
1 -woman SA-TNS-finish-CAUS-fv INF-plant 12-finger millet
'The woman finished planting finger millet.'

As in English and other languages, the nominal subject *mumbanda* 'woman' of the main clause in (1b) must also be the subject of the embedded infinitive verb *kutumba* 'to plant'. It is the controller of the dependent clause. Given in (2) below are examples of such complement clauses with different types of predicates.

(2) a. Walómbeli kuya nakunooka kumukála.[1]
wu -a -lómb-el -i ku-ya na -ku -nook -a ku -mu-kála
SA1-TNS-ask -RP-fv INF-go and-INF-take a break-fv LOC-3 -village
'He had asked to go to the village and take a break.'

b. Akwenzi alékeli kuzáta.
a-kwenzi a -a -lek-el -i ku -zát -a
2-youth SA2-TNS-stop-RP-fv INF-work-fv
'The youth had stopped working.'

c. Muntu wakáñenyi kutéma.
mu-ntu wu -a -kañany-en -i ku -tém -a
1 -man SA1-TNS-fail -RP-fv INF-cut down trees-fv
'The man failed to cut down trees.'

d. Ndimi wavulamena kusenda muhínyi.
ndimi wu -a -vulamen-a ku-send -a mu-hínyi
1-farmer SA1-TNS-forget -fv INF-carry-fv 3 -handle
'The farmer forgot to carry the handle.'

As can be seen from the examples in (2), the verbs of the complement clauses *ya* 'go,' *nooka* 'rest' in (2a), *záta* 'work' in (2b), *kañanya* 'fail' in (2c), and *senda*

[1] The following abbreviations are used in this paper: APPL applicative, AUX auxiliary, CAUS causative, COMP complementizer, CONJ conjunction, COP copula, DEM demonstrative, FUT future, fv final vowel, IMP imperative, IMPF imperfective, INF infinitive, LOC locative affix, NEG negative, OM object prefix/agreement, POSS possessive, PRO pronoun, POSS possessive, -Q interrogative, QUOT quotative, REL relative clause, RFUT remote future, RP remote past, SA subject prefix/agreement, SUBJ subjunctive, TAM tense, aspect and mood, TNS tense, 1sg first person singular, 1pl first person plural, 2sg second person singular, 2pl second person plural. Numbers denote the various noun classes, Ø null subject. Examples in this study are in the Lunda orthography and the velar nasal and the voiced postalveolar fricative are represented by the symbols *ñ* and *zh* respectively.

'carry' in (2d) lack an explicit subject, and thus are all marked with the infinitive prefix *ku-*. The subject of the complement is understood to be the same as that of the verb of the main clause. This syntactic property is one of the 'behavioral properties' of subjects following Keenan's (1976a) criteria where an overt subject is missing on the verb of the complement clause.

What may be interpreted as the equivalent of English 'how to' complement clauses are infinitival clauses, as they bear exactly the same syntactic structures as infinitival complement clauses in Lunda. In other words, there is no formal and syntactic distinction between dependent infinitival complement clauses and 'how to' dependent complement clauses, as exemplified by the verbs *kwiluka* 'to know' and *kudíza* 'to learn' in (3).

(3) a. Yáya welúka kutúña matála.

yaya	wu -a	-iluk -a	ku -tuñ -a	ma-tála
1-elder brother	SA1-TNS-know-fv		INF-build-fv	6 -houses

'My elder brother knows how to build houses.'

b. Muhela índi wakadíza kuchíma.

mu-hela	índi	wu -aka -díz -a	ku-chím-a
1 -sister	POSS1	SA1-RFUT-learn-fv	INF-sew -fv

'His sister will learn how to sew.'

In (3a) and (3b), the subjects of the main clause verbs *iluka* 'know' and *diza* 'learn' are controllers of the complement clause verbs *tuña* build' and *chima* 'sew'. The complement clause comes immediately after the verb of the main clause, just like infinitival complement clauses.

A set of evaluative and emotive state verbs such as *kuwáha* 'to be good, nice, glad,' *kutama* 'to be bad,' *kutela* 'to be worthy of, fit for, suitable to, necessary to' and other impersonal constructions or expressions of evaluation, necessity, obligation, prohibition, and advisability that derive from nouns and adjectives such as *wahi* 'nice, good, pleasant' *chinzhila* 'it is forbidden, it is not allowed, it is wrong,' *swayi* 'quick,' *nsónyi* 'shame' take infinitival complement clauses. The infinitive is used when an obligation is stated in a general sense without referring to a specific person. The verb or verbal expression of the main clause takes the class 7 subject prefix *chi-* which functions as an expletive / dummy subject of the main clause. Despite the involvement of the infinitival prefix, the expletive subject prefix does not control the verb of the complement clause. That is, the infinitival clause verb does not require its subject to be co-

referential with the subject of the main clause. Xhosa and Sotho employ the locative *ku-* as an expletive subject with such types of verbs (Du Plessis 1982:38). Consider the following Lunda examples:

(4) a. Chachiwáhi kunyámuka lélu.[2]
chachi-wáhi ku -nyámuk-a lélu
7 -good INF-leave -fv today
'It is better to leave today.'

b. Chatéla kufunta swayi.
chi-a -tel -a ku -funt -a swayi
7 -TNS-be necessary-fv INF-come back-fv quickly
'It is necessary to come back quickly.'

c. Chatáma kuzúña.
chi-a -tama ku -zún̰-a
7 -TNS-be bad INF-fight-fv
'It is bad to fight.'

d. Chakála kuhósha.
chi-a -kala ku -hósh-a
7 -TNS-be hard INF-say -fv
'It is hard to say.'

e. Chinzhila kuhukula mbízhi chochochu.
chi-nzhila ku -hukula mbízhi chochi-o -chu
7 -be forbidden INF-snatch 8-meat 7 -DEM-7
'It is wrong to snatch the meat like that.'

In (4a-e), the subject prefix *chi-* does not show any control of the subject of the infinitival clause; the subject of the complement clause remains unbound in the sentence and only picks up a referent from discourse. There is nothing to refer to in the main clause.

[2] The adjective *wahi* 'good' is one of the adjectives that take reduplicated compound agreement prefixes as seen in *chachiwahi* made up of the morphemes *chi-a-chi*.

2.2 Infinitival complement clauses after two-place verbs. The second type of infinitival complement clauses consists of dependent clauses that come after two-place verbs, which can in turn be subdivided into two distinct subgroups, namely basic non-derived verbs and derived causative verbs. The complement-taking verbs with causative semantics fit well under the subcategory of complement-taking verbs that Givón (1990, 2001) describes as manipulate verbs, since they take an agent, and a patient/theme which is also the agent of the complement clause verb. The subject of the infinitive complement clause is not overtly expressed, is independent of the main clause, and is understood to be co-referential with the direct object of the main clause. Consider the following examples that illustrate constructions with infinitival dependent complement clauses occurring after the direct object of the main clause.

(5) Mukwénzi nakukwásha akwawu kubúza kapila kamenzhi.[3]

mu-kwénzi	Ø -na	-ku -kwásh-a	a-kwawu	ku -búza
1sg -youth	SA1-TAM-INF-help	-fv	2-friend	INF-dig

ka-pila	ka-a	-ma-inzhi
12-furrow	12 -POSS-6	-water

'The youth is helping his friends to dig a water furrow.'

Walómbeli chilolu kwimana.

wu -a	-lómb-el -i	chilolu	ku -iman	-a
SA1-TNS-ask	-RP-fv	leader	INF-stand up-fv	

'He had asked the leader to stand up.'

---

[3] The morpheme *na-* is employed to express the present perfect/anterior, in addition to the final vowel *-i*. It also indicates present progressive continuous as well as past continuous when it follows the verb *di* 'be,' which may be deleted, plus an infinitive. Consequently, TAM is used as a cover term for this morpheme when it is used as a tense-aspect marker. The first person singular and class 1 subject prefixes delete with this aspectual morpheme. The two are distinguished by tone.

Ná-d-i.	'I have eaten.'	Na-d-i	'S/he has eaten.'
Ni-di na-ku-da.	'I am eating.'	Wu-di na-ku-da	'S/he is eating.'
Ná-ku-da.	'I am eating.'	Na-ku-da	'S/he is eating.'

(6) Kawumba walétésheli Nswana kuleka mudimu.
Kawumba wu -a -let -esh -eli Nswana ku -lek -a mu-dimu
Kawumba SA1-TNS-bring-CAUS-RP Nswana INF-quit-fv 3 -job
'Kawumba caused Nswana to quit his job.'

Mumbanda wakakezha kánsi kúda.
mu-mbanda wu -a -kakezha ka-ánsi ku -d -a
1 -woman SA1-TNS-force 1 -child INF-eat-fv
'The woman forced the child to eat.'

In (5), the verbs *kwásha* 'help' and *lómba* 'ask, request' of the main clause are simple non-derived verbs, while in (6) the verbs *letesha* 'cause' and *kakezha* 'force' of the main clause are derived causative ones.

When the direct object of the verb of the main clause is expressed as a pronominal prefix, it appears in the preverbal direct object slot of the main clause, and not before the verb of the complement clause, as shown in the following examples.

(7) a. Kawumba wamulétésheli kuleka mudimu.
Kawumba wu -a -mu -let -esh -el -i ku -lek -a mu-dimu
Kawumba SA1-TNS-OM1-bring-CAUS-RP-fv INF-quit-fv 3 -job
'Kawumba caused him to quit his job.'

b. Nayikáñeshi kuya.
Ø -na -yi -kañ-ish -i ku -ya
SA1-TAM-OM2-fail -CAUS-fv INF-go
'He has prevented them from going.'

The prefixes *-mu-* and *-yi-* attached to *létesha* 'cause' in (7a) and *káñesha* in (7b) are direct object pronouns.

3. Finite Clauses without Complementizers.

This section deals with complement clauses that cannot be introduced by complementizers or any other overt sign of subordination, such as verb morphology. Such types of embedded clauses occur immediately after the direct object of the main clause without any intonational pause. The verbs that are used in this type of complement clause are transitive perceptual and evidential complement-taking

verbs such as *móna* 'see, discover,' *tíya* 'hear, feel' *wana* 'find, discover,' *bula-kana* 'meet,' *shíya* 'leave behind'.

(8) a. Námona anyikwénzi anakwása nguja.
ni -a -món-a a-nyi-kwénzi a -na -ku -as -a nguja
1sg-TNS-see -fv 2-4 -youth SA2-TAM-INF-play-fv 9.soccer
'I saw the youths playing soccer.'

b. Náyisiyi ananakwinza.
Ø -a -yi -shiy -i a -na -ku-inz -a
1sg-TAM-OM2-leave-fv SA2-TAM-INF-come-fv
'I left them coming.'

c. *Námona námi anyikwénzi anakwása nguja
ni -a -món-a námi a-nyi-kwénzi a -na -ku -as -a nguja
1sg-TNS-see -fv COMP1 2-4 -youth SA2-TAM-INF-play-fv 9.soccer
'I saw that the youths were playing soccer. ' (Lit: 'I saw the youths playing soccer. They were playing.')

The nominal object *anyikwénzi* 'youths' in (8a) and the class 2 object pronominal prefix *-yi-* in (8b) are also the subjects of subordinate clauses. This is clearly shown by the presence of the subject agreement prefix *a-* attached to the verb of the embedded complement clauses. The presence of the complementizer *námi* in (8c) renders the construction ungrammatical.

When the complement clause is a passive construction, the direct object of the main clause triggers a coreferential object agreement marker on the subordinate verb, and the class 2 subject prefix *a-* fills the subject slot.

(9) Chinenzaña namóni nkáyi anakumuhaña kúdi mutúpa.
chi -ní -a -inz -a -aña Ø na -món-i nkáyi
when-1sg.-TNS-come-fv-IMPF 1sg. TAM-see -fv duiker
a -na -ku -mu -haña -a kúdi mu-túpa
SA2-TAM-INF-OM1-chase-fv by 3 -lion
'As I was coming, I saw a duiker being pursued by a lion.'

The nominal direct object *nkáyi* 'duiker' of the main clause is also the object of the embedded complement clause, as can be seen by the presence of the object agreement marker *mu-* prefixed to the verb.[4]

The verb of the complement clause does not show any temporal reference, as it may be coded with either the perfect aspect morphology for events completed prior to those encoded by the verb of the main clause, or the progressive aspect for ongoing and simultaneous events and states. In other words, the interpretation of the time of the complement clause is dependent on that of the preceding main clause. Consider the following examples.

(10) a. Wúkuwana atwansi anakuda.
wú -ku -wan-a a-tu-ánsi a -na -ku -da
SA2sg-FUT-find -fv2-13 -child SA2-TAM-INF-eat
'You will find the children eating.'

b. Wúkuwana atwansi anadi.
wú -ku -wan-a a-tu-ánsi a -na -d -i
SA2sg-FUT-find -fv2-13 -child SA2-TAM-eat-fv
'You will find the children have eaten.'

c. Wúkuwana atwansi mwaka ada déhi.[5]
wú -ku -wan-a a-tu-ánsi mwaka a -a -d -a déhi
SA2sg-FUT-find -fv2-13 -child time SA2-TNS-eat-fv already
'You will find the children had already eaten.'

Complement clauses without complementizers appear more frequently in narratives[6] and may also be combined with an adverbial clause of time, as illustrated by the examples in (11) and (12) with verbs in the anterior/perfect and progressive aspect respectively.

---

[4] Lunda obligatorily requires the object marker to co-occur with the nominal object when the latter is fronted in passive constructions. This syntactic behavior also applies to left-dislocation.

[5] The noun *mwaka* 'time, year' in (10c) is used adverbially in combination with the adverb *déhi* 'already.'

[6] About this type of complement clauses, (White 196? — the last digit of the printed date is not legible in the manuscript) states that the "actions being narrated are commonly referred to as if the actions were being described by a present eye witness".

(11) Chinafuntíli, nawéni mukánda wédika déhi, anakuwuzátisha.
chi -ni -a -funt -il -i ni -a -wan-in -i mu-kánda
when-1sg-TNS-go back-RP-fv 1sg-TNS-find -RP-fv 3 -book
wu -a -idik -a déhi a -na -ku -wu -zat -ish -a
SA3-TNS-come-fv already SA2-TAM-TAM-OBJ3-work-CAUS-fv
'When I went back, I found that the book had already come out and was being used.' (Lit: 'When I went back, I found the book has already come out, it is being used.') (Kakoma 1988:iv)

(12) Chashíkilíyi kwitála, Sayitamba wawéni ñodindi wudi muchinsambu nakwóta kési.
chi -a -a -shik -il -i -yi ku -itala Sayitamba wu -a -wan-in -i
when-SA2-TNS-arrive-RP-fv-1 LOC-house Sayitamba SA1-TNS-find -RP-fv
ñod-indi wu -di mu -chi-nsambu Ø -na -ku -ota ka -isi
wife-POSS1 SA1-be LOC-7 -kitchen SA1-TAM-INF-warm self.12-fire
'When he arrived home, Sayitamba found his wife in the kitchen warming herself by the fire side.' (Lit: When he arrived home, Sayitamba found his wife is the kitchen warming herself by the fire side.') (Matoka 1995:63)

4. Clauses with Complementizers.

Lunda has three types of finite embedded complement clauses that are introduced by complementizers, depending on the type of the governing predicate which they are associated with. Some clauses come after the prefix *chi-*, which is used as a complementizer. Embedded interrrogative 'yes-no' complement clauses are headed by the invariable complementizer *neyi* 'whether,' while the last group of dependent complement clauses comes after variable subject-agreeing complementizers.

4.1 The complementizer *chi-*. As seen in subsection 2.1, a certain number of emotive and evaluative verbs takes the subject prefix *chi-*, which functions as an expletive subject. These verbs or verbal expressions also take embedded tensed complement clauses introduced by the complementizer *chi-*, which is different from the subject prefix, although the two are homophonous and occur as prefixes attached to the verb. The tense expressed in the complement clause does not de-

pend on the verb of the main clause. The event may be located in the past, present or future tense.

(13) Chinawáhi nánkashi chiwúnénzi.
chi -na -wah -i nankashi chi -wu-na -inz -i
SA7-TAM-be good-fv very COMP-2sg -TAM-come-fv
'It is very good that you have come.'

Nátíyi kuwáha chiwúnénzi.
Ø -na -tiy -i ku -waha chi -wu-na -inz -i
SA1-TAM-feel-fv INF-be happy COMP-2sg -TAM-come-fv
'I am happy that you have come.'

The prefix *chi-* appears as a complementizer attached to the verbs *kuwaha* 'to be happy, to be good' and *kutíya kuwaha* 'to feel good, to be happy' which are used as an adjective in the main clause.

Nominal subjects occur after the verb in this type of construction, that is, the complementizer forces the nominal subject to move into the postverbal position. In addition, the verb suffixes *-yi* and *-wu* for class 1 and 2 subjects respectively. In other words, there are two subject markers – the preverbal subject prefix *a-* which is the same for both singular and plural, and the postverbal affix. The construction is similar to certain types of adverbial clauses with third person subjects.[7] However, the treatment of these constructions is beyond the scope of this paper.

---

[7] The complementizer *chi-* is different from the class 7, 8 and 9 relativizers *chi-, yi-* and *zhi-* used in headless relative clauses with the meaning 'that which' and 'those which'. The relativizer *chi-* can also be when used adverbially in embedded clauses; it may mean 'if, when, because, how, after, as'. The difference between the two lies in the fact that the clause with a relativizer may be either the subject or the object of the verb.

Nayíli mumpáta nami nákamóni
ni-a-y-il-i mu-mpata nami ni-ka-mon-i
1sg-PAST-go-RP-fv LOC-bush COMP.1sg 1sg-FUT-see-SUBJ
zheláña akwétu.
zhi-a-a-il -aña akwetu
REL10-3pl-TNS-do-IMPF fellow friends
'I went in the bush so that I could see what my fellow friends do.'

(14) Chinawáhi nánkashi chanenzíyi mukwénzi.
chi -na -wah -i nánkashi chi -a -na -inz -i -yi mu-kwénzi
SA7-TAM-be good-fv very COMP-SA1-TAM-come-fv-1 1 -youth
'It is very good that the youth has come.'

Nátíyi kuwáha chiyanenzíwu anyikwénzi.
Ø -na -tiy-i ku -waha chi -a -na -inz -i -wu
SA1-TAM-feel-fv INF-be happy COMP-SA2-TAM-come-fv-2
a-nyi-kwenzi
2-4 -youth
'I am happy that the youths have come.'

The verb *enza* 'come' in (14) is attached with the suffix *-yi* because the subject is third person class 1, while that in (14) suffixes the class 2 morpheme *-wu* for third person plural.

4.2 Embedded interrogative complement clauses. Embedded interrogative complement clauses are introduced by the complementizer *néyi* 'whether, if'. Some of the verbs that take such dependent complement clauses in Lunda are *kwiluka* 'to know,' *kwíhula* 'to ask, to inquire,' *kuzhinoka* 'to doubt, to consider, to ponder' and the defective verb that expresses doubt *kwizhi*[8] 'to wonder, to doubt'.

(15) Kadamaseki wéhwíli múku wíndi neyi akufuntatahindí.
Kadamaseki wu -a -ihul-il -i mu-kú wu-a -índi neyi
Kadamaseki SA2-TNS-ask -RP-fv father-in-law 1 -POSS-1 whether
a -ku -funt -a tahindi
2.SA-FUT-go back-fv or not
'Kadamaseki asked his father-in law whether or not they would return.'

[8] *Kwizhi* is defective in the sense that it cannot be inflected with a subject prefix or tense marker. It always occurs with the infinitive marker *ku-* and has diverse interpretations such as 'perhaps, doubt, wonder, may be' or just to express uncertainty.

Hélukíli néyi kwizhi nakulota indí kwizhi nakutíya mwalala.
hi -a -a -iluk -il -i neyi kwizhi Ø -na -ku -lota
NEG-SA1-TNS-know-RP-fv whether may be SA1-TAM-TAM-dream
indi kwizhi Ø -na -ku -tíya mwalala
or may be SA1-TAM-TAM-listen really
'He did not know whether s/he was dreaming or he was really listening.'

Kwizhi néyi akuya lélu.
kwizhi neyi a -ku -ya lélu
We/I/one wonder whether SA2-FUT-go today
'We/I/one wonder(s) whether they will go today.'

4.3 Subject-agreeing complementizers. It would be worthwhile to talk about independent pronouns and possessive pronouns before introducing the subject-agreeing complementizers, because of the existence of a clear connection between the latter and the possessive pronouns with respect with morphology. The first and second person (both singular and plural) independent pronouns and possessive stems are formally identical. However, there are some differences between the two types of morphemes, in that independent pronouns can stand alone as words, but possessive pronominal stems can only occur attached to agreement prefixes. In addition, the former bears a low tone and the latter carries a high tone on the first syllable. Compare the examples of absolute pronouns in (16) and those of the possessive pronominal stems in (17) below.

(16) Ami násenda chéña. 'I carried a plate.'
ami ni -a -send-a chéña
PRO1sg. SA1sg.-TNS-carry -fv plate

eyi mukwétu 'you my friend'
PRO2sg friend

Enu ambanda yúma yidi kudihi? 'You women, where are the things?'
enu a-mbanda yi-úma yi -di kudihi?
PRO2pl. 2-woman 8 -thing SA8-be where

(17) kadidi kámi ‘my bed’
ka-didi ki-ámi
12 -bed 12-POSS1sg

itéla déyi ‘your house’
i-tála di-éyi
5-house 5 -POSS2sg

maátu énu ‘your boat’
ma-átu a-énu
8 -boat 8-POSS1pl

The two tables below illustrate independent pronouns and personal possessive pronominal stems.

Table 1. Independent Pronouns

1 sg	ami	‘me’
1 pl	etu	‘we, us’
2 sg	eyi	‘you’
2 pl	enu	‘you’
class 1	yéna	‘him/her’
class 2	wéna	‘them’

Table 2. Personal Pronominal Stems

1 sg	ámi	‘my’
1 pl	étu	‘our’
2 sg	éyi	‘your’
2 pl	énu	‘your’
class 1	índi	‘his/her’
class 2	áwu	‘their’

In Lunda, declarative complement clauses are introduced by complementizers which agree in number and person with the subject of the main clause. That is, the complementizers are variable, as their morphology is determined by the subject of the main clause. They consist of the prefix *ni-* attached to a possessive

pronominal stem, as illustrated in the examples (18a) through (18f) using different verbs of perception, utterance and cognition with different subject persons.

(18) a. Ami nanúkili námi hinadíñi nankingáku.
ami ni -a -anuk -ili námi hi -ni -a -di-iñi
1sg 1sg-TNS-remember-RP COMP1sg NEG-1sg-TNS-be-RP
na -nkinga-ku
with-bicycle -NEG
'I remembered that I did not have a bicycle.'

b. Eyi wádikala néyi hináshiña muntúku.
eyi wu -a -dikala-a néyi hi -ni -a -shíñ-a
2sg SA2sg-TNS-deny -fv COMP2sg. NEG-SA1sg-TNS-curse-fv
mu-ntu -ku
1 -person-NEG
'You denied that you did not curse anyone.'

c. Mukwénzi welúkili níndi mpáta yatelela kuhimpewa.
mu-kwénzi wu-a -iluk -ili níndi mpáta
1 -youth 1 -TNS-know-RP COMP1 8.country
yi -a -telela ku -himp -ew -a
SA8-TNS-ought INF-change-PASS-fv
'The youth knew that the country ought to be changed.'

d. Twahayama nétu mahína asukuma kafwampi mukési.
tu -a -hayam -a nétu ma-hina a -sukuma-a
1pl-TNS-be surprised-fv COMP1pl 6 -cloth TNS-burn -fv
kafwampi mu-ka-ísi
as if 18 -12 -fire
'We were surprised that the clothes were burned as if in fire.'

e. Mwatela kwiluka nénu hitwákafuntáku.
mu-a -tel -a ku -iluk -a nénu hi -tú -aka-funt -a -ku
2pl -TNS-ought-fv INF-know-fv COMP NEG-1pl-FUT-return-fv-NEG
'You ought to know that we will not return.'

f. Akwénzi atóñózhokeli náwu Nswana nenzi nakumwóta.
a-kwénzi a -a -toñozhok-eli náwu Nswana
2-youth SA2-TNS-think-RP COMP2 Nswana
Ø -na -inzh-i na -ku -mu -ot -a
SA1-TAM-come-fv TAM-INF-OM1-ask for marriage-fv
'The youth thought that Nswana had come to ask her for marriage.'
(Lit: 'The youth thought that Nswana has come to ask her for marriage.'

The complementizers *námi* in (18a), *néyi* in (18b), *níndi* in (18c), *nétu* in (18d), *nénu* in (18c) and *náwu* in (18f) introduce complement clauses and are in agreement with the subject of the main clause *ami*, *eyi*, *mukwénzi* 'youth,' the first person plural subject, the second person plural subject, and *akwénzi* 'youths' respectively of the main clause. Note that the forms of the complementizers are different in each one of the examples (18a-c) as they depend on the referent noun or pronoun in the main clause.

Even when the verb of the main clause is imperative, the complementizer agrees with the addressee, as exemplified by the following sentences in (19).

(19) a. Itezháku néyi wáluwañesha yúma.[9]
itezh -a -ku néyi wu-a -luwañesha yi-úma
accept-fv-IMP2sg COMP2sg 2sg -TNS-disturb 8 -thing
'Accept that you disturbed things.'

[9] In Lunda, verbs are inflected with the morpheme *-ku*, a combination of the locative suffix *-ku* and the vowel *-u*, in the second person singular in the imperative. Some monosyllabic verbs such as *ya* 'go,' *nwa* 'drink' and *dá* 'eat' take either the suffix *-ku* or *-añа* as in *dáña* 'eat' and *yáña* 'go'. The locative is also used in subjunctive constructions as a more polite alternative to the imperative form in the second person singular *Wutwanakeniku*.

wu-tu -anaken-i -ku
2sg-OM1pl-forgive -SUBJ-LOC
'Forgive us.'

The affix *-ku* is clearly a locative although it has the same form as the second person singular object prefix. In Chokwe, Luchazi and Luvale, the locative suffix occurs as *-ko*, consisting of the locative suffix *-ku* and the vowel *-o*, and is attached to only monosyllabic verb roots. Words in Lunda do not end in either of the mid vowels *e* and *o*. Furthermore, first and second person object pronouns never appear after the verb, though third persons do occur as pronouns suffixed to the verb.

b. Itezénu nénu atwánsi asenda yúma.
itezh -enu nénu a-tu-ánsi a -ku -send-a yi-úma
accept-IMP2pl COMP2pl 2-13 -child SA2-FUT-carry-fv 8 -thing
'Accept that the children will carry the things.'

c. Twítezhi nétu twáluwañesha yúma.
tú -itezh -i nétu tú -a -luwañesha yi-úma
1pl-accept-SUBJ COMP1pl 1pl-TNS-disturb 8 -thing
'Let us accept that we disturbed things.'

The complementizers *néyi* in (19a), *nénu* in (19b), and *nétu* in (19c) are all dependent on the coreferent subjects in the main clauses whose verbs are in the imperative mood.

Lunda differs from most Bantu languages in terms of the features of noun classes; it displays a striking distinction between animate nouns and inanimate nouns. Nouns belonging to classes other than 1 and 2 are subdivided into animates and inanimates. Animate nouns display double prefixes in the plural form, that is, they take both their noun class prefix plus the class 2 noun prefix *a-*. Furthermore, with the exception of possessives, animate nouns trigger class 1 and 2 agreement affixes rather those of the classes to which they belong. This generalization also applies to closely related Bantu languages such as Chokwe, Luchazi, and Luvale (Horton 1949, White 1949, 196?, Doke 1967, and Fleisch 2000). The division of nouns into subcategories may explain why complementizers are restricted to the two classes only. Horton (1949:181) observes that the complementizers for "inanimates are infrequent, but are found in native fables" in Luvale. However, this is very doubtful, as fables use animals which, as already mentioned, employ class 1 and 2 complementizers.

(20) a. Kapela wasulukili muwina.
ka-pela wu -a -suluk-ili mu -wina
12-snake SA1-TNS-slither -RP LOC-hole
'The snake slithered down into the hole.'

b. Atupela asulukili muwina.
a-tu-pela a -a -suluk-ili mu -wina
2-13 -snake SA1-TNS-slither -RP LOC-hole
'The snakes slithered down into the hole.'

c. Kapela wámuzhaha, wúchini malóka?
ka-pela wú -a -mu-zhah-a wú -chin -i ma-lóka
12-snake 2sg.-TNS-OM-kill -fv 2sg.-run away-SUBJ 6 -wriggle
'You killed the snake, why should you run away from the wriggles?"

d. Kapela wamona nindi chisakala analuwañeshi.
ka-pela wu -a -món-a ńndi chi-sakala
12-snake SA1-TNS-find -fv COMP1 7 -nest
a -na -luwañesh-i
SA2-TAM-disturb -fv
'The snake found that the nest had been disturbed.'

The above examples contain a class 12 noun *kapela* 'snake' in (20a) and a class 13 *atupela* 'snakes' (20b) which trigger class 1 and 2 subject agreement markers *wu-* and *a-* instead of *ka-* and *tu-*. Note that the nominal subject in (20b) has two noun prefixes, a class 2 noun prefix *a-* and a class 13 noun prefix *tu-*. Further, in (20c) the left-dislocated nominal object *kapela* 'snake' triggers the appearance of a class 1 object marker *mu-* on the verb instead of the class 12 object agreement *ki-*. Even the complementizer *níndi* in (20d) is triggered by semantic animacy rather than grammatical class 12 to which the subject of the main clause belongs.

Unlike some Bantu languages such as Bemba (Givón 1972a), Kiswahili (Ngonyani 1999), KiKaonde[10] and other African languages which make use of the complementizer derived from a verb of saying, the morphology of the Lunda subject-agreeing complementizers clearly indicates that they can be traced to the possessive personal pronouns. This distinct feature of complementizers has also been observed in other genetically related Bantu languages such as Luvale (Horton 1949:181), (White 1959), Chokwe (White 196?), and Luchazi (Fleisch 2000:101).

The complementizer prefix *ní-*[11] might have originated from the first person singular subject prefix. Evidence for this comes from Chokwe, Luchazi, and Luvale, where the first person subject singular prefix *ngu-* appears to be the

[10] KiKaonde (L. 41), a Bantu language spoken in Zambia, uses the complementizer *mba* that derives from the verb *kwamba* 'to say'. As for Bemba (M. 42), the complementizer is *ti* from the verb *ukutila* 'to say'.

[11] It must be noted that the prefix *ni-* is not a copula in Lunda, though it has the shape of the simple copula found in some Bantu languages such as Bemba. Instead the copula is *hi-* for third persons and *yi-* for first and second persons in Chokwe, Luchazi, Lunda and Luvale.

source of the complementizer prefix. This is contrary to the claim by Horton (1949:181) and (Fleisch 2000:101) that the complementizer prefix in Luvale and Luchazi derives from the Luvale ideophone *gwa* which denotes a clacking sound. Had the complemetizer derived from this ideophone, the complementizer prefix in Lunda would have been *ngu-* like the other three languages, since the high vowel /u/ undergoes the process of glide formation before another vowel. However, Lunda has the same ideophone *ngwa* which means 'cutting, breaking across'. The ideophone *ngu* also exists in Lunda, while it is reduplicated *ngungungu* in Chokwe with the same meaning 'to be in good health'. Thus, Fleisch's observation that the ideophones in Luchazi differ very much from the Luvale ones contradicts his agreement with Horton about the origin of the complementizer prefix found in Chokwe, Luchazi, and Luvale.

Table 3: Subject-Agreeing Complementizers

1 sg	námi
1 pl	nétu
2 sg	néyi
2 pl	nénu
class 1	ńndi
class 2	náwu

The selection of the tense in the complement clause does not depend on the tense of the main clause, as the verb of the subject-agreeing complement clauses can be in any tense; it can be in the past, the present or the future.

(21) a. Ashimuna náwu akwinza namelela.

a -a -shimun-a náwu a -ku -inza na-melela
SA2-TNS-say -fv COMP2 SA2-FUT-come in -evening
'They said that they would come in the evening.'
(Lit: 'They said that they will come in the evening.')

b. Watóñózhokeli ńndi anenzi nakutúña itála.

wu -a -toñozhok-eli ńndi a -na -inz -i na -ku -túña itála
SA1-TNS-think -RP COMP1 SA2-TAM-come-fv TAM-INF-build house
'He thought that they had come to build a house.'
(Lit: 'He thought that they have come to build a house.')

In (21a), the complement clause is an embedded sentence introduced by a third person plural complementizer *náwu*, while in (21b) it is introduced by a class 1 complementizer *níndi*.

In Lunda, verbs of perception, utterance and thought that are used deontically to express 'fear,' 'hope,' 'supposition,' and 'wish' take dependent complement clauses with the verb in indicative future tenses in combination with the sentence adverbs *hadaha, hamwaha, hekwawu* 'perhaps, may be, possibly', and express irrealis meanings.

(22) Wáfuukula néyi hadaha wukuñanakena.

wu-a	-fuukul-a	néyi	hadaha	wu -ku	-ñ	-anaken-a
2sg-TNS-suppose-fv		COMP2sg	perhaps	SA1-FUT-OMsg-forgive		-fv

'You supposed that he would forgive me.' (Lit: 'you supposed that he will forgive me')

Wakúhwéleli níndi hamwaha Matewu wámba kamusumbula.

wu -a	-kuhwelel-el -i	níndi	hamwaha	Matewu	wu -amba
1.SA-TNS-hope	-RP-fv	COMP1	perhaps	Matewu	SA1-AUX

ka	-mu -sumbul-a
RFUT-OM1-marry	-fv

'She hoped that Matewu would marry her.'

4.4 Direct and indirect quotes. Direct and indirect quotes are structurally indistinguishable as they are both introduced by the same subject-agreeing complementizers. Cross-linguistically, indirect quotes or speeches are characterized by third person pronouns and changes in tense. In other words, the reporting of something said, thought, etc. has deixis adapted to the reporter's speech. However, this is not the case with Lunda. The actual words of the speaker are captured as they are uttered and the deixis is appropriate to the moment when it was made. Changes rarely occur with regard to person and tense, and the deixis is not adapted to the viewpoint of the reporter when quoting someone indirectly. In some cases, though rare, pronoun shifts in the third person pronouns do occur in reported speeches. This phenomenon has also been observed in Luvale (White 1949:72).

(23) Direct Quote:

a. Womba walezha ñodíndi níndi, "Kumadiki nakuya mwisaña."

Womba	wu -a	-lezh-a	ño -díndi	níndi	kumadiki
Womba	SA1-TNS-tell	-fv	wife-POSS1	COMP1	tomorrow
	ní	-aku-y -a	mu -i-saña		
	SA1sg-FUT-go-fv		LOC-5-bush		

'Womba told his wife (that), "Tomorrow I will go in the bush." '

Indirect Quote:

b. Óna muntu wahósha níndi wakaminzhila.

óna	mu-ntu	wu -a	-hósh-a	níndi	wu -aka-mu	-inzh -ila
1DEM 1	-person	SA1-TNS-say	-fv	COMP1	SA1-FUT-OM1-come-APPL	

'That person said that s/he would come for him/her.' ('Lit: That person said that s/he will come for him/her.')

Both the direct quotation in (23a) and the reported discourse in (23b) are introduced by the class 1 complementizer *níndi*.

The use of direct quotes is more frequent than that of indirect quotes in Lunda. The speaker's actual words are reported exactly as they were uttered. This suggests that indirect discourse might have developed from direct quotations. Consider the following example in which the words of the first person speaking are recorded.

(24) Wela níndi nákenza kumadíki.

wu-a	-il -i	níndi	ní -aka	-inz -a	kumadíki
1	-TNS-say-fv	COMP1sg	1sg-RFUT-come-fv		tomorrow

'He said that he would come tomorrow.' (Lit: 'He said that I will come tomorrow.')

When the content of the embedded complement clause is not asserted by the subject of the main clause, that is, when a person reports the words as hearsay or not the actual words of an actual speaker, the class 2 complementizer *náwu* is used instead of the one agreeing with the subject of the main clause.

(25) Hátiyayi náwu kudi ñoma

hi	-a -tiy	-a -yi	náwu	ku -di	ñoma
when-SA1-hear-fv-REL1			COMP2	INF-be	feast

'when he hears that there is a feast'

Nátiya nawu azhaha nzovu.
ní -a -tiy -a náwu a -a -zhah-a nzovu
SA1sg-TNS-hear-fv COMP2 SA1-TNS-kill -fv elephant
'I heard that they killed an elephant.'

In the examples in (25), the complementizer *náwu* does not agree with either the class 1 subject *a-* or the first person singular *ní-*.

The same complementizers also function as question morphemes and are affixed to the question marker *-di*[12] with speech verbs in the position where a complement clause would normally occur.

(26) Andimi anahóshi náwudi?
a-ndimi a -na -hósh-i náwu -di
2-farmer SA2-TAM-say -fv COMP2-Q
'What have the farmers said?'

Namulézheli mwana námidi?
ní -a -mu -lezh-eli mu-ána námi -di
SA1sg-TNS-OM1-tell -RP 1 -child COMP1sg-Q
'What did I tell the child?"

4.5 Verb ellipsis. It is interesting to note that the language allows the verb of the main clause to be deleted leaving only the subject intact in its position, followed immediately by the complementizer that functions as a non-verbal predicate with the understood interpretation and meaning of the verbs of 'saying,' 'thinking,' and 'intention,' etc.[13] In other words, the verb of the main clause may not be overtly expressed and this phenomenon does not affect the semantics of the entire sentence. The context of an utterance enables the listener or reader to figure out

[12] When a nominal object is questioned, the verb suffixes the wh-word, as shown by the example below with a non-speech verb.

Andimi analetidi?
a-ndimi a-na-let-i-di
2-9.farmer SA2-TAM-bring-fv-Q
'What have the farmers brought?'

[13] In his description of Luvale, Horton (1949:182) observes that the complementizer is used in a copular sense without a verbal antecedent.

the verb that the speaker or writer leaves out. Despite these elliptical features, the main clause cannot be used as a fragment and the complement clause is not an independent clause as is the case in English (Thompson 2002);[14] it still remains a subordinate clause. Consider the following examples in which complement clauses are either introduced by a complementizer alone or a complementizer preceded by a noun phrase.

(27) Kabuchi níndi: "Énu anvwáli zhámi, bayi mútoñozhoka nénu nakuhósha mázu akasawuntu."

Kabuchi	níndi	énu	a-nvwáli	zhi-a	-ámi	bayi	mú-toñozhoka
Kabuchi	COMP3sg	2pl	1-parent	1	-POSS-1sg	CONJ	1pl -think

nénu	Ø	-na	-ku	-hósha	ma-zú	a-ka-sawuntu
COMP2pl	1sg-TAM-TAM-talk				6 -word	6-12 -disrespectful

'Kabuchi said: "My parents, do not think that I am saying disrespectful words." (Chilayi 1989: 25)

(28) Yéna níndi Nswana nénzi nakumwóta.

yéna	níndi	Nswana	Ø	-na	-inzh-i	na -ku -mu -sumbula
PRON1	COMP1	Nswana	SA1-TAM-come-fv			with-INF-OM1-marry

'He (thought) that Nswana had come to marry her.'

(29) Étu nétu hímukwinzáku.

étu	nétu	hi	-mú-ku	-inz	-a-ku
1pl.	COMP1pl	NEG-2pl	-FUT-come-fv-NEG		

'We (thought) that you would not come.' (Lit: 'We (thought) that you will not come.')

The main clauses of (27) through (29) consist simply of the noun phrase *Kabuchi,* the third person singular independent pronoun (class 1) *yéna* 'him,' and the first person plural independent pronoun *etu* 'we, us' devoid of the verb followed by the complementizers that introduce dependent complement clauses. The construction in (27) contains a direct quote introduced by the third person singular

[14] According to Thompson (2002: 144-5), complement-taking verbs and that-prefixed clauses can be used by themselves as fragments and in places "where they do not occur in the canonical constructions" in English. That is, some constructions that look like complement clauses are simply independent clauses. In addition, complement-taking verb phrases "occur with no overt associated clauses either in the vicinity or in the previous discourse."

complementizer *níndi* agreeing with the subject noun phrase of the main clause *Kabuchi,* and the direct quote also contains another complement clause introduced by the second person plural complementizer *nénu* which is in agreement with the first person plural addressee. The main clause in all of the above examples has an implied interpretation of the verb *say* or *think* in the main clause followed by either a direct or indirect quote which refers to the words or thought expressed.

The independent subject pronoun, which is frequently used when the subject of the main clause is first or second person, may be left out leaving only the complementizer followed by a complement clause.

(30) Námi twayénu kúnu.
námi twaya-énu ku -nú
COMP1sg come -IMP2pl LOC-DEM
'I say, "come here."'

Additionally, the subject of the main clause can be introduced by the infinitive *kutíya* 'to listen, to hear' or *kuchinka*[15] which function as discourse markers, that is, the main clause may consist of two elements – an infinitive and the subject – plus the complementizer introducing a direct quotative. The verb remains unexpressed and its interpretation depends on the context of the discourse.

(31) Kuchinka Noliya níndi, "Ámi awéni néluki ochu chi nídi nakwila."
kuchinka Noliya níndi ámi awéni Ø -na -iluk -i
answering Noliya COMP1 1sg self 1sg-TAM-know-fv
ochu chi ní -di na -ku -ila
DEM.7 REL7 1sg-COP TAM-INF-do
'Noliya answered, "I, myself, know what I am doing."'

(32) Kutíya wéna náwu: "Túyidimbi."
ku -tíya wéna náwu tú -yi -dimb -i
INF-hear PRON2 COMP2 1pl-OM2-deceive-SUBJ
'And they said: "Let us deceive them."'

[15] While the origin of the infinitive *kutiya* is clear, the meaning of the infinitive *kuchinka* is not known as it only occurs as a discourse marker in indirect discourses. Its origin cannot be traced.

The infinitive verbs *kuchinka* and *kutíya* 'to hear' are used as discourse markers to introduce the subject *Noliya* and *wéna* 'they/them' of the main clause in (31) and (32) respectively.

The complementizer following a verbal expression can have an implicit meaning which is different from that expressed by the verb of the main clause. The meaning may refer to an utterance or thought, as illustrated in (33):

(33) Amandumi zhíndi chiyamumwéníwu atíyili kuwáha náwu nayilételi yakuvwála.

a-mandumi	zhi-a	-índi	chi	-ya	-a	-mu	-món-eni-wu	
2-uncle	2	-POSS-1	REL	-SA2-TNS-	-OM1	-see	-RP	-REL2

a-a-tíy-ili	ku	-wáha	náwu	∅	-na	-yi	-let	-el -i
SA2-TNS-feel-RP	INF	-please	COMP2	SA-	TAM-	OM2-	bring-	APPL-fv

yi-a	-ku	-vwala	
8	-POSS-	INF-wear	

'His uncles felt pleased when they saw him (thinking) that he had brought them clothes.' (Chilayi 1989:22)

4.5 Object complements. In addition to introducing dependent clauses that function as arguments of other clauses, the same subject-agreeing complementizers occur after certain transitive verbs such as 'name', 'call', 'term', 'mention', and 'write' to introduce a complement that modifies or refers to the direct object or a locative noun. The object complement is comparable to what is referred to as a small clause (Haegeman 2001: 58; Wardhaugh 2003: 85) in the theory of Government and Binding, since the clause is smaller than an ordinary clause and only appears as an embedded clause without an overt verb. The following examples illustrate the use of complementizers introducing clauses that name, describe, or modify the object and the locative noun phrase of the main clause.

(34) a. Antu amutúmbili izhína náwu Chidumbu.

a-ntu	a	-a	-mu	-tumb-ili	izhína	náwu	Chidumbu
2-people	SA2-TNS-	OM1-	name	-RP	name	COMP2	Chidumbu

'People named him Chidumbu.'

b. Mwána wamutambikáña índi yáya.

mu-ána	wu	-a	-mu	-tambik-aña	índi	yáya
child	SA1-TNS-	OM1-	call	-HAB	COMP1	1.elder brother/sister

'The child calls him elder brother/sister.'

c. Anvwáli zháwu ayiténéneña náwu antu abúla nyévulu.
a-nvwáli zhi-a -áwu a -a -yi -ten-en-eña náwu
2-parent 2 -POSS-2 SA2-TNS-OM2-call-RP-HAB COMP2
a-ntu a -búla nyi-évulu
2-person REL2-be without 4 -soul
'Their parents used to call them people without souls.'

Note that *Chidumbu* in (34a), *yáya* 'elder brother/sister' in (34b), and the relativized noun phrase *antu abúla nyevulu* 'the people without souls' in (34c) are object complements that modify the class 1 and 2 object prefixes *mu-* and *yi-*. They are introduced by the complementizers *náwu* in (34a) and (34c), and *níndi* in (34b), which agree in person and number with the nominal subjects, class 2 *antu,* class 1 *mwána*, and the class 2 subject prefix *a-* 'they' of the main clause.

(35) Wúkuwana hanasónekúwu náwu mukulúmpi washikola.[16]
wú -ku -wan-a ha -a -na -sónek-i -wu náwu
2sg.-FUT-find -fv REL16-SA2-TAM-write -fv-REL2 COMP2
mu-kulúmpi wu -a-shikola
1 -head POSS-1 -school
'You will find (the door) where it is written principal.' (Chipoya et al 1995:2)

In example (35), the noun phrase *mukulúmpi washikola* 'school head/principal,' which is introduced by the class 2 complementizer *náwu*, is the complement of the omitted locative head noun *hachisu* 'on the door'. In addition, the form of both the postverbal relativizer *-wu* and the complementizer indicates that the relative clause has a class 2 subject.

4.6 Subjunctive complement clauses. Some of the evaluative verbal expressions that occur with expletive subjects and take infinitival complement clauses can also take subjunctive complement clauses if a specific person is mentioned, that is, an obligation or necessity is stated as applicable to a specific person. The subject of the subjunctive clause comes directly after the verb of the main clause. The subjunctive mood is characterized by the prefixation of the subject prefix directly

[16] The class 2 verbal suffix *-wu* is used as a class 2 subject marker coreferential with the subject agreement prefix *a-* when the relativized head noun is either a direct object or a locative noun phrase. This is also found in adverbial constructions.

onto the verb without any tense marker, and the verb stem is coded with the suffix *-i*.[17] For illustration, consider the following examples:

(36) Chachiwáhi antu anyamuki lélu
chachi-wahi a-ntu a -nyamuk-i lélu
7 -good 2-person SA2-leave -SUBJ today
'It is better for the people to leave today.' ('Lit: It is better that the people leave today.')

(37) Chatela Matewu ayí.[18]
chi-a -telel -a Matewu a -y -i
7 -TNS-be necessary-fv Matewu SA1-go-SUBJ
'It is necessary that Matewu go.'

Subjunctive dependent complement clauses that express purpose, intention, and desire also occur subject-agreeing complementizers. These embedded clauses have irrealis meanings. The absence of the tense marker indicates that the subjunctive lacks an intrinsic temporal reference, as seen in the examples below.

(38) a. Nákéñi námi níkali nkóñi yénu.
Ø -na -kéñ -i námi ni -ikal-i nkóñi yi-énu
1sg-TAM-want-fv COMP1sg 1sg-be -SUBJ 9.worker 9 -POSS2pl
'I want to be your worker.' (Lit. 'I want that I be your worker.')

b. Túnakéñi nétu kánsi enzi kúnu.
tu -na -kéñ -i nétu ka-ánsi a -inz -i ku -nú
1pl-TAM-want-fv COMP.1pl 1 -child SA1-come-SUBJ LOC-DEM
'We want the child to come here.' (Lit. We want that the child come here.')

The subjunctive complement clauses in (38a) and (38b) come immediately after the first person singular and plural complementizers *námi* and *nétu* and their verbs *ikala* 'be, become' and *inza* 'come' are inflected with the subjunctive morpheme *-i*.

[17] The final vowel *-i* is also found with the present perfect in addition to the tense marker-aspect *na-*.

[18] The subject prefix *a-* is used for both classes 1 and 2 in the subjunctive form.

The subjunctive mood in the dependent complement clause is determined by the intrinsic semantic properties of the verb in the main clause, in conjunction with the prototypical inherent meaning of necessity, obligation, desire and wish associated with the subjunctive.

(39) a. Twáyilezha nétu ayí.

tú	-a	-yi	-lezh-a	nétu	chiña	a	-y	-i
1pl-TNS-OM2-tell		-fv		COMP1pl	should	SA1-go-SUBJ		

'We told them that they should come.'

b. Amwílili náwu witézhi.[19]

a	-a	-mu	-il	-ili	náwu	wu-itezh-i
SA2-TNS-OM1-tell-RP					COMP2	2sg -agree-SUBJ

'They told him that s/he should agree.' (Lit. 'They told him that you should accept.')

The use of the subjunctive embedded clause in (39) can be attributed to the inherent lexically specified semantic properties of the verbs *keña* 'want, wish' and *lezha* 'tell' in the main clause, in combination with the inherent meaning of desire and obligation that characterize the subjunctive mood.

It should be noted that complementizers are optional in subjunctive dependent clauses; they can be deleted without a change in their propositional meanings. Examples of a dependent subjunctive clause introduced by a complementizer and one without a complementizer are given in (40a) and (40b).

(40) a. Nákéñi námi kánsi afuntishi nkínga.

Ø	-na	-kéñ	-i	námi	ka-ánsi	a	-funt	-sh	-i	nkínga
1sg-TAM-want-fv				COMP1sg	1 -child	SA1-return-CAUS-SUBJ				9.bicycle

'I want the child to return the bicycle.' (Lit. 'I want that the child return the bicycle')

[19]Generally, the verb *ila* 'do, make' is used with the meaning of 'tell, order' instead of *lezha* 'tell, show, explain'.

b. Nákéñi kánsi afuntishi nkínga.
Ø -na -kén -i ka-ánsi a -funt -sh -i nkínga
1sg-TAM-want-fv 12 -child SA1-return-CAUS-SUBJ 9.bicycle
'I want the child to return the bicycle.' (Lit. 'I want (that) the child return the bicycle')

There is no difference in meaning between infinitival complement clauses and subjunctive complement with types of verbs if the subject of the dependent clause is the same as that of the main clause. Consider the construction in (41a) and its alternative in (41b).

(41) a. Nákéñi níkali nkoñi yénu.
Ø -na -kéñ -i ní -ikal-i nkóñi yi-a -énu
1sg-TAM-want-fv 1sg-be -SUBJ 9.worker 9 -POSS-2pl
'I want to be your worker.' (Lit. 'I want that I be your worker.')

b. Nákéñi kwikala nkóñi yénu.
Ø -na -kéñ -i ku -ikala nkoñi yi-a -énu
1sg-TAM-want-fv INF-be worker 9 -POSS-2pl
'I want to be your worker.'

Subjunctive complement clauses are also employed in discourse for an intended and unfulfilled event or action. In that case, the verb *ila* 'do' is used in the matrix clause.

(42) Chélili níndi atáli hanyíma wamwéni mutúpa.
chi -a -a -il -ili níndi a -tál -i ha -nyíma
when-SA1-TAM-do-RP COMP1 SA1-look-fv LOC-back
wu -a -món-eni mu-túpa
SA1-TNS-see-RP 1 -lion
'When he thought of looking behind, he saw a lion.'

5. Conclusion.

This study has explored the structures of the various types of complement clauses which Lunda has at its disposal. These are infinitive complement clauses, complement clauses without complementizer and those that require the obligatory

use of complementizers as well as non-finite embedded complements that require complementizers.

Tensed complement clauses that cannot take complementizers occur immediately after the direct object of the main clause. The object follows a limited set of perceptual and evidential complement-talking verbs to code situations and events that are either simultaneous with the main clause or completed prior to those encoded by the verb of the main clause. Embedded interrogative complement clauses are introduced by an invariable complementizer.

The prefix *chi-* also functions as a complementizer with emotive and evaluative verbs. Declarative complement clauses are introduced by complementizers which obligatorily agree in person and number with the subject of the verb of the main clause. Besides introducing complement clause, the same complementizers are also used to head the complement of the direct object or a locative noun phrase. They equally function as question morphemes affixing the question marker *-di* with verbs of utterance. These complementizers derive from personal possessive pronouns, and not from the verb 'say' as is the case in some Bantu languages. Depending on the properties of certain verbs, complementizers can be optional in subjunctive complement clauses.

It has been noted that some of the evaluative verbal expressions with expletive subjects that take infinitival complement clauses can also take subjunctive complement clauses if a specific person is mentioned.

REFERENCES

Chilayi, M.S. 1989. *Chihandilu cha Kabuchi.* Lusaka: Kenneth Kaunda Foundation.

Chipoya, Albert, et al. 1995. *Lunda Mañu: Mukanda Wakadizi.* Lusaka: ZEPH.

Doke, Clement M. 1967. *Bantu: Modern Grammatical, Phonological and Lexicological Studies Since 1860.* London: International African Institute.

Du Plessis, Jacobus A. 1982. "The analysis of the infinitive". *Journal of the African Language Association of Southern Africa.* 2.2: 18-48.

Fisher, M. K. 1984. *Lunda-Ndembu Handbook.* Lusaka: Neczam.

Fleisch, Axel. 2000. *Lucazi Grammar: A Morphosemantic Analysis*. Köln: Rüdiger Köppe Verlag.

Givón, Talmy. 1972a. *Studies in ChiBemba and Bantu Grammar*. *Studies in African Linguistics*, Supplement 3. Los Angeles: UCLA.

Givón, Talmy. 1990. *Syntax: A Functional-Typological Introduction*, Vol II. Amsterdam: John Benjamins.

Givón, Talmy. 2001. *Syntax: An Introduction*, Vol II. Amsterdam: John Benjamins.

Haegeman, Liliane. 2001. *Introduction to Government and Binding Theory*. Second Edition. Oxford and Cambridge: Blackwell.

Horton, Alonzo E. 1949. *A Grammar of Luvale*. Johannesburg: Witwatersrand University Press.

Kakoma, Ben C. 1988. *Noliya*. Lusaka: Kenneth Kaunda Foundation.

Kawasha, Boniface. 2003. *Lunda Grammar: A Morphosyntactic and Semantic Analysis*. Eugene: University of Oregon, Doctoral dissertation.

Keenan, Edward L. 1976a. "'Some universals definition of subjects'". *Subject and Topic*, ed. by C. Li. New York: Academic Press. Pp 303-333.

Matoka, Brighton K. 1995. *Sayitamba*. Lusaka: Neczam.

Ngonyani, Deo. 1999. "X-movement in Kiswahili relative verbs". *Linguistic Analysis* 29: 137-159.

Thompson, Sandra A. 2002. "'Object complements' and conversation: towards a realistic account." *Studies in Language* 26: 125-164.

Wardhaugh, Ronald. 2003. *Understanding English Grammar: A Linguistic Approach*. Second Edition. Oxford: Blackwell.

White, Charles M.N. 196? *A Chokwe Grammar*. White Fathers and Northern Rhodesia and Nyasaland Publications Bureau.

White, Charles M.N. 1949. *A Short Lwena Grammar*. London: Longmans.

White, Charles M.N. 1944. "The noun prefixes of the West-Central zone of Bantu languages". *African Studies* 3: 153-160.

Department of Liberal Arts
Savannah State University
128 Payne Hall
Savannah, GA 31404
bkawasha@yahoo.com

[received July 13, 2005
accepted July 3, 2006]

Studies in African Linguistics
Volume 35, Number 1, 2006

TOPICS IN TAITA TONE II*

David Odden
Ohio State University

This paper describes aspects of tone in the Mbololo dialect of Taita, compariing it to the Dembwa dialect described in Odden (2001). A salient feature of tone in the language is a covert lexical distinction between words with final H versus those with no final tone. Phrasal tone alternations provide ample evidence allowing the recovery of this underlying distinction. The language also has a process of rightward H tone shift, also found in languages such as Jita and Dembwa Taita. In contrast to Dembwa Taita, where language-internal evidence clearly indicates that surface shift is the result of general spreading and restricted delinking, the patterns of spread and delinking in Mbololo Taita are perfectly matched, so that there is no synchronic evidence for a two-step account of tone shift.

1. Introduction.

The Bantu language Mbololo is one of the dialects of Davida (E74a), a sister language of Saghala (E74b) within the Taita subgroup of Bantu, which is spoken in southeastern Kenya. The purpose of this paper is to continue the description of tone in the language started in Odden (2001), which describes aspects of tone in the Dembwa dialect, and to provide comparative background on how the system may have developed. Philippson (1991) and Philippson & Montlahuc (2003) provide Davida data, from the Josa dialect, which is briefly discussed in the last section, along with some data from the Rong'e dialect.

* Data for this paper was collected in Nairobi during April-May 1997 with the assistance of Renson Mbogho, as well as Rose Lugano for the data from Rong'e, and was supported financially by NSF Grant SBR-9421362 and, in part, CASTL, University of Tromsø. Earlier versions of this paper were presented at ACAL 36 in Savannah and CALL 35 in Leiden. I would like to thank Robert Botne and two anonymous reviewers for helpful comments on this paper.

Like the more distantly related Bantu languages Rimi, Kikuyu, Sukuma and Jita, and the more closely related Chaga and the mutually intelligible dialect Dembwa Taita (henceforth "Dembwa"), Mbololo Taita (henceforth "Mbololo") has rightward shift of H tones from their underlying position. Tone shift is a typological anomaly — one does not find "voicing shift" or "rounding shift" in languages, and stress shift, perhaps the closest analogue to tone shift, is heavily conditioned by rhythmic factors that play little role in tone shift — and therefore investigation into the nature of tone shift potentially reveals something unique about the nature of the human language faculty. The quality of any such crosslinguistic investigation depends on the availability of the fullest range possible of basic descriptions of the facts. This paper seeks to contribute to our knowledge of phonology by expanding the database of language description to include a previously undescribed tonal system.

Section 2 of the paper discusses NP-internal alternations of tone, focusing on evidence for the distinction between surface toneless nouns which have an underlying word-final H, versus those stems with no underlying H tone, a distinction which is neutralized in citation forms in favor of a toneless pattern. This section also presents evidence for phrasal rules which insert and dock a H tone between a noun and a modifier, rules which partially obscure the underlying final H vs. toneless distinction. These rules interact with Meeussen's Rule, which deletes a H tone after a H — in Mbololo, this affects only floating tones. A further problem is posed by the existence of modifiers which do not trigger phrasal H tone insertion. It is shown that the number of underlying syllables in the modifier affects whether phrasal H is inserted, so that underlyingly disyllabic modifiers do not cause H-insertion. Finally, subject noun plus verb constructions are considered, further supporting the proposed underlying tonal distinctions in nouns and showing that phrasal H-insertion is limited to applying within the NP.

Section 3 considers tone in verbs, including interaction between verb and following noun, which provides evidence for a reflex of the common Bantu system of melodic tone inflection as part of the tense-aspect system. The final section compares the system of tonal alternations of Dembwa and Mbololo, and considers the historical development of lexical distinctions in nouns.

2. Noun Tone.

Since nominal word-formation processes in Taita contribute negligibly to tonal alternations, there is little to say about word-internal noun tone. However, phrasal combinations of noun plus word, or word plus noun, do give rise to interesting

alternations whose nature is not immediately obvious. An investigation of lexically-governed alternations between citation and modified forms in 2.1 motivates an opaque distinction between nouns with final H versus those with no H, considering combinations of noun plus adjective and noun plus certain numerals in 2.1. Failure of phrasal H insertion before "tonally inert" modifiers is discussed in 2.2. Section 2.3 considers the tone of nouns in preverbal position.

2.1 Noun + adjective constructions. There are two main surface tone classes of nouns in Mbololo: those with a H on the penultimate syllable, and those which are surface toneless. Examples of penult-H nouns are given in (1).[1]

(1)	ifúmu	'spear'	lúmbo	'song'
	msénge	'walking stick'	msídu	'forest'
	mukáβo	'vertical stud'	ŋóndi	'sheep'
	ngánga	'guinea fowl'		

Surface toneless nouns are given in (2), with the data being divided into two morphophonemic classes, which will be justified below.

(2)	a. iγeγo	'tooth'	iγembe	'hoe'
	masoka	'axe'	kijiko	'spoon'
	kikoto	'hand'	lundi	'rafter'
	lwau	'foot'	mudi	'tree'
	βandu	'people'	mungulu	'bean'
	miri	'roots'	muzi	'village'
	maγu	'legs'	βalimi	'farmers'

[1] Transcriptions of data given are in phonetic transcription where *j* represents a voiced alveopalatal affricate (IPA [dʒ]), *š* is a voiceless alveopalatal fricative (IPA [ʃ]) and *č* is a voiceless alveopalatal fricative (IPA [tʃ]). In addition, *ng* is phonetically [ŋg]. This differs from the quasi-orthography for consonants used in Odden (2001). Unlike Dembwa, which allows both level H and falling tone on the penult, in Mbololo, the phrasal penult is somewhat lengthened, but the length of the penult has no phonological consequences, a H toned penult always having level H pitch. Some nouns in classes 1 and 3, which have the noun class prefix /mu/, realize that prefix in these examples as [m̩], e.g. [m̩sénge] 'walking stick', while others realise the prefix as [mu], e.g. [mukáβo] 'vertical stud'. I have not investigated the circumstances surrounding this alternation thoroughly but it appears that /mu/ reduces to [m̩] optionally. Examples are presented here in the form in which I record them in my notes. Any dishomorganic [mC] cluster has syllabic [m̩], so syllabicity is marked only before a labial.

b.	βukuta	'wall'	iriso	'eye'
	ituku	'day'	kiju	'shadow'
	lumi	'tongue'	mikonu	'arms'
	mori	'moon'	mukame	'sp. tree'
	βana	'child'		

Nouns with an overt H tone such as in (1) are significantly less common, compared to surface toneless nouns such as in (2).

While there is no reason to distinguish the two subsets of nouns (2a) and (2b) given just the citation forms of the nouns, phrasal phonology provides evidence for an underlying distinction. As seen in (3) and (4), the citation-toneless class must be differentiated into two sub-classes before an adjective. In the group (2a), to be referred to as the "toneless nouns", the first syllable of the following adjective, which is usually a noun class agreement prefix, has H.[2]

(3)	iγeγo í-ɓaha	'big tooth'	iγembe í-ɓaha	'big hoe'
	masoka má-lača	'long axes'	kijiko kí-lača	'long spoon'
	kikoto kí-ɓaha	'big hand'	lundi lú-lača	'long rafter'
	lwau lú-lača	'long foot'	mudi mú-lača	'tall tree'
	βandu βá-lača	'tall people'	mingulu mí-ɓaha	'big beans'
	muzi m̀-ɓaha	'big village'	miri í-dadu	'3 roots'
	maγu á-dadu	'3 legs'	βalimi βá-linga	'how many farmers?'
	maγu βúnyanya	'8 legs'		

Since such nouns are themselves toneless in phrase-medial context, it is reasonable to assume that these nouns are underlyingly toneless.

In the other group, (2b) — the "H nouns" — a final H emerges on the last vowel of the noun.

(4)	βukutá m-lača	'long wall'	irisó i-ɓaha	'big eye'
	itukú i-lača	'long day'	kijú ki-ɓaha	'big shadow'
	lumí lu-lača	'long tongue'	mikonú mi-ɓaha	'big arms'
	morí m̀-ɓaha	'big moon'	mukamé m-lača	'tall tree (sp.)'
	βaná βa-ɓaha	'big children'	βaná βa-dadu	'3 children'
	βaná βa-linga	'how many children?'	mikonú βunyanya	'8 arms'

[2] However, the numeral 'eight', among others, does not agree in class with the head noun.

These data present two puzzles: what lexical property distinguishes the nouns of (4) which have a final H before an adjective from those of (3) which do not, and what explains the presence of H on the adjective in (3) and its lack in (4)?

The tone alternation in the adjective could be explained by positing a H tone on the adjective prefix which is directly manifested in (3) and is deleted after a final H in (4) — hypothesizing /itukú ílača/ → [itukú ilača]. Alternatively, the data can be explained by assuming that the adjective prefix is underlyingly toneless, so that (4) involves no rule application, and we can explain the data of (3) by insertion of H on the adjective when no H is present in the preceding word, thus /iɣembe iɓaha/ → [iɣembe íɓaha].

There is additional evidence to support the latter insertion approach. The adjective is also toneless when it comes after a penult-H noun: such nouns do not themselves undergo tonal alternations.

(5)	ifúmu i-ɓaha	'big spear'	lúmbo lu-lača	'long song'
	misénge mi-lača	'long stick	msídu m̩-ɓaha	'big forest'
	mikáɓo mi-lača	'long stud'	ŋóndi m-baha	'big sheep'
	ngánga m-baha	'big guinea fowl'	saɓúni n-dača	'long soap'

This fact follows directly from the assumption that the adjective is toneless, and receives H only after a toneless noun. In addition, we also find that the adjective is toneless in its citation form.

(6)	lulača	'long (cl. 11)'	milača	'long (cl. 4)'
	m̩ɓaha	'big (cl. 3)'	kiɓaha	'big (cl. 7)'

Since the nouns of (3) do not have a surface H tone either in citation forms or phrasally, in the data considered so far, the most transparent account of them, the one adopted here, posits that the toneless nouns are underlyingly toneless. They thus differ from the H nouns, which have an underlying H tone. Since that H is not always manifested on the surface, the question arises as to where that H is associated underlyingly, if it is associated at all. Four imaginable accounts of the H noun *iriso* 'eye' are given in (7).

(7) a. H b. H c. H d. H

iriso iriso iriso iriso

We can rule out representation (7a) for two reasons. First, that would falsely render H nouns indistinguishable from non-alternating penult-H nouns such as [mikáɓo]. Second, there are monosyllabic roots in the set of H nouns, e.g. [ki-ju] 'shadow', [vi-ju] 'shadows', [βu-šu] 'face' — see *kijú kiɓaha* 'big shadow', *βušú mlača* 'long face'.[3] An underlying representation which requires the H nouns to lexically bear tone on the penultimate syllable predicts that there would be no monosyllabic roots in the H class, and yet there are. This reduces the choices of underlying form to (7c) or (7d), either with a floating H or a H linked to the last syllable.

Providing a more explicit account of the adjectival tone alternation helps to narrow the choice of underlying form for nouns down to (7c). I assume underlying /irisó/, which undergoes the Prepausal H Deletion rule (8) — "##" indicates prepausal position in that rule.

(8) *Prepausal H Deletion*
H → ∅ / ___ ##

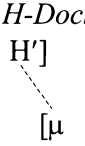
Since the adjectival H is not underlyingly present, it must be inserted and associated. As seen below, the surface realization of the adjectival H can vary according to phonological properties of the phrase. I assume the Phrasal H Insertion rule (9).

(9) *Phrasal H Insertion*
∅ → H / [$_{NP}$ [$_{N}$ ___] [...]]

The exact phonological and morphosyntactic conditions on this rule require further discussion and empirical investigation. Analogous phrasal H insertion between words within a phrase can be found in Kikerewe (Odden 2000a), Jita (Downing 1996), Zinza (Odden 2000b), Runyankore (Poletto 1998) and Kimatuumbi (Odden 1996). This floating H then docks to the first vowel on the right.

[3] A reviewer suggests the possibility that the stem for 'shadow' is disyllabic *-iju*, where vowel deletion maps /ki-iju/ onto [kiju]. This theory could be tested with a form selecting a prefix not ending in *i*, which unfortunately is not available in my data. Theoretically, the stem for 'face' could likewise be *-ušu*. Further fieldwork is required to definitively resolve this issue.

(10) *H-Docking*



According to this rule, only a floating H docks to the next word.[4] As stated in (9), the H is inserted within the noun. The derivation of *iɣembe íɓaha* from /iɣembe iɓaha/ thus inserts a floating H tone into the noun *iɣembe* by (9), and (10) then links that H′ to the left edge of the following adjective.

Given these rules for the variable adjectival H, the lexically H nouns of (4) such as *iriso* must have a H linked to the final syllable, to maintain the behavioral distinction between *irisó iɓaha* and *iɣembe íɓaha*. If *iriso* had a floating H, and if the combination of toneless noun plus adjective *iɣembe* + *iɓaha* also received a floating H, there would be no way to distinguish the behavior of toneless and H nouns before an adjective. If H nouns have a lexically-linked final H and a floating H is inserted when a toneless noun is combined with an adjective, the distinction is easily maintained via the difference between linked and floating tones.

This analysis raises the question what happens to the floating H in *irisó iɓaha* (4) where the noun has a lexical final H, or *ifúmu iɓaha* (5) with a penult H? The lack of H can be explained in two ways. Insertion of H by (9) could be constrained, to insert H only after a toneless noun. This would render (9) parallel to similar rules of Kikerewe and Kimatuumbi, where H insertion is blocked when the triggering word has a H tone. How to encode such a restriction on insertion is a problem of phonological theory: see Reiss (2003) for discussion of the role of existential quantifiers and variables in a formal theory of phonology. Since a formal statement of H-tone blockage would seem to require a number of devices to express the condition $\forall x((x \in Y) \supset ((x \neq H))$ — variables, quantifiers and a membership operator — which are not independently known to be part of the theory of rules, I will not adopt a blocking condition on H insertion. The alternative,

[4] Robert Botne (p.c.) suggests the alternative that such nouns have a floating H (as distinct from the finally-linked H underlying the nouns of (2b)). There is no contrast between toneless noun stems and those with floating H, so this is conceivable; the tradeoff is that the floating H must be deleted in the complement of the context (9), and all nouns must be assumed to have some H tone. In addition, however, an alternative analysis of the tone of the copula would be necessitated if the nouns of (2a) have a floating tone, since, as I show in section 3.2, the copula has a floating tone but behaves differently from toneless nouns.

adopted here, is an additional rule of H deletion, one deleting a floating H tone after any H.

(11) *Meeussen's Rule*
$H' \rightarrow \varnothing / H __$

I am aware of no facts showing whether restricting (9) is empirically better or worse in accounting for adjectival H than deletion (11). Derivations of relevant forms are given below to show how these alternations are accounted for.

(12)

/iriso/	/iriso iɓaha/	/iɣembe/	/iɣembe iɓaha/	*underlying*
	H H iriso iɓaha		H iɣembe iɓaha	*PHI* (9)
	H [iriso iɓaha]			*MR* (11)
			H [iɣembe iɓaha]	*H-Docking* (10)
[iriso]				*PHD* (8)

In the citation form *iriso*, the final H is simply deleted. In /irisó iɓaha/ a floating H is inserted before the adjective, but is deleted because of the preceding H. In contrast in /iɣembe iɓaha/, the inserted H is not deleted since no H precedes, and H-Docking (10) therefore maps the H to the following word.

A surface complication of this pattern is encountered when the noun is in agreement class 9-10, which has a surface nonsyllabic class prefix N-. In contrast to previous examples, where the adjective's assigned H appears on the class prefix (*ki-, i-, lu-* etc. as well as syllabic *m̩*), when the noun and adjective are in class 9-10, the H appears on the root-initial syllable. With H nouns in (13), no H is ex-

pected on the adjective because the floating H would be deleted due to the noun's H tone.

(13)	čoka	'snake'	čoká ndača	'long snake'
	koši	'dog'	koší mbaha	'big dog'
	mbanga	'cave'	mbangá mbaha	'big cave'
	ngolo	'heart'	ngoló mbaha	'big heart'
	nguku	'chicken'	ngukú ndača	'tall chicken'
	singo	'neck'	singó ndača	'long neck'
	tindi	'tomato'	tiɲdí mbaha	'big tomato'

Similarly, penult-H nouns predictably have no H tone assigned to the adjective.

(14)	ŋóndi	'sheep'	ŋóndi mbaha	'big sheep'
	ngánga	'guinea fowl'	ngánga mbaha	'big guinea fowl'
	saɓúni	'soap'	saɓúni ndača	'long soap'

After toneless nouns, however, a H appears on the first syllable of the adjective root.

(15)	kamba	'rope'	kamba ndáča	'long rope'
	mbaɣo	'savannah'	mbaɣo mbáha	'big savannah'
	mbua	'nose'	mbua ndáča	'long nose'
	mbuβa	'garden'	mbuβa mbáha	'big garden'
	ndaɣa	'knife'	ndaɣa ndáča	'long knife'
	ndana	'bow'	ndana ndáča	'long bow'
	nganda	'wall'	nganda mbáha	'big wall'
	njoɣolo	'rooster'	njoɣolo mbáha	'big rooster'
	rwai	'mosquito'	rwai mbáha	'big mosquito'

Two explanations for the position of H in such adjectives come to mind. First, the Class 9-10 prefix might be underlying /n̩/ and the prefix first takes the assigned H tone, but later desyllabifies, causing progressive tone shift, so that intermediate *ndana ńdača* becomes [ndana ndáča]. The other and more direct analysis is that the class 9-10 prefix is not a tone-bearer, and the assignment of the H on the root-initial syllable takes place directly, because the docking rule assigns the H to the first available TBU in the following word, i.e. the root-initial vowel. We will see evidence in the following section that argues that the prefix *N-*

is syllabic, which makes the first scenario at least plausible though it does not automatically rule out the latter analysis, given appropriate rule ordering.

The data considered so far have involved nouns plus surface-toneless adjectives. Some nominal modifiers have a root-initial H, which creates an opportunity to observe another generalization about the language, that combinations of H tones are always separated by a downstep on the surface. As seen in (16), after a toneless noun, the phrasally-assigned H on the class prefix is separated from the root H by downstep.

(16)

ɓoi βá!-tíni	'small cats'	miri mí!-tíni	'small roots'
meda mí!-tíni	'small rivers'	maγembe má!-tíni	'small hoes'
iγeγo í!-tíni	'small tooth'	čongo kí!-tíni	'small head'
maγembe má!-sánu	'5 hoes'	kamba í!-sánu	'5 ropes'
vijiko ví!-sánu	'5 spoons'	vikoto ví!-sánu	'5 hands'
čwau í!-sánu	'5 feet'	mbuβa í!-sánu	'5 gardens'
βadaβana βá!-sánu	'5 youths'	βaka βá!-sánu	'5 women'

The downstep can be explained structurally by positing the representation (17).

(17)

```
        H H
        | |
βaka βasanu        = [βaka βá!sánu]
```

This representation is interpreted according to the convention that concatenated H autosegments are separated by a phonetic downstep — for further examples of Bantu languages with downsteps arising under H-concatenation, see Odden (1982) for Shambaa, Leung (1991) for Llogoori, Bickmore (2001) for Namwanga and Odden (2001) for Dembwa.

As predicted by this analysis, H nouns retain their H at the end of the noun, and no H appears on the adjective.

(18)

kikapú ki-tíni	'small basket'	irisó i-tíni	'small eye'
mikonú mi-tíni	'small arms'	βaná βa-tíni	'small children'
čalá ki-tíni	'small finger'		
valá vi-sánu	'5 fingers'	čoká i-sánu	'5 snakes
čumí i-sánu	'5 tongues'	meŕi i-sánu	'5 moons'
βaná βa-sánu	'5 children'	ngukú i-sánu	'5 chickens'

While H and toneless nouns are usually surface-distinguishable before an adjective, just in case the adjective has a stem-initial H and is in class 9-10, there is tonal neutralization between the two tonal classes. The nouns in (19) have an underlying final H tone, which surfaces as expected, and is separated from the lexical H of the adjective by a downstep.

(19)	čoká ꜜnɗini	'small snake'	koši ꜜnɗini	'small dog'
	ngukú ꜜnɗini	'small chicken'	singó ꜜnɗini	'small neck'
	tinɗí ꜜnɗini	'small tomato'		

Compare (19) with the toneless nouns in (20), which have the same tone pattern.

(20)	kambá ꜜnɗini	'small rope'	mbeβá ꜜnɗini	'small rat'
	ndaná ꜜnɗini	'small bow'	ngandá ꜜ ndini	'small wall'
	nyungú ꜜnɗini	'small pot'		

Examples of penult-H nouns are given in (21) for completeness.

(21)	ŋóndi ndini	'small sheep'
	ngánga ndini	'small guinea fowl'

The comparative derivations in (22) demonstrate that this convergence of patterns is accounted for by the rules established above.

(22)

H	H H	
kamba ndini	čoka ndini	*underlying*
H H	H H H	
kamba ndini	čoka ndini	*PHI* (9)
	H H	
	čoka ndini	*MR* (11)

H H
| |
kamba ndini *H-Docking* (10)

[kambá ˈnd́ini] [čoká ˈnd́ini] *Surface interpretation of* H+H

The explanation for surface neutralization of tone patterns here resides in the fact that with adjectives in class 9-10, there is no accessible vowel in the adjective for the inserted H tone to associate to.

2.2 Tonally-inert modifiers. Certain modifiers do not bear H after a toneless noun. Examples of two such modifiers, the numerals '2' and '4', are illustrated in (23) with H nouns. As expected, the underlying final H of H nouns surfaces when another word follows the noun.

(23)	βukutá iβi	'2 walls'	matukú aβi	'2 days'
	mikonú iβi	'2 hands'	ngoló iβi	'2 hearts'
	βaná βaβi	'2 children'		
	βaná ɓana	'4 children'	singó inya	'4 necks'
	koší inya	'4 dogs'	merí inya	'4 moons'
	mikamé inya	'4 tree (sp.)'	miind́ı inya	'4 legs'

The combination of penult-H noun and one of these modifiers results in no tone changes, also as expected.

(24)	mafúmu aβi	'2 spears'	mikáɓo iβi	'2 vertical studs'
	ŋóndi iβi	'2 sheep'		
	mikáɓo inya	'4 vertical studs'	čúmbo inya	'4 songs'
	ngánga inya	'4 guinea fowls'	saɓúni inya	'4 soaps'

Unexpectedly, there is no H tone when a toneless noun is combined with one of these modifiers.

(25)	βuli iβi	'2 beds'	maγo aβi	'2 stones'
	vikoto viβi	'2 hands'	βadaβana βaβi	'2 youths'
	βaγosi βaβi	'2 elders'	βandu βaβi	'2 people'
	mingulu iβi	'2 beans'	minyango iβi	'2 doors'
	muri iβi	'2 roots'	ndana iβi	'2 bows'
	njoγolo iβi	'2 roosters'	rwai iβi	'2 mosquitos'
	ɓoi ɓana	'4 cats'	maγembe ana	'4 hoes'
	maγo ana	'4 stones'	vijiko vina	'4 spoons'
	manga ɓana	'4 cassavas'	βadaβana ɓana	'4 youths'
	meda inya	'4 rivers'	βaka ɓana	'4 women'
	minyaro inya	'4 paths'	mizi inya	'4 villages'

The tonal anomaly of this set of modifers is the fact that they fail to induce insertion of the phrasal H tone. The nouns themselves have the predicted surface form before these modifiers: penult-H nouns retain their penultimate H, toneless nouns have no H, and H nouns retain their final H.

There are a number of tonally-inert modifiers. Examples of demonstratives are seen in (26) after a toneless noun.

(26)	maγeγo aγa	'these teeth'	iγembe iji	'this hoe'
	masoka aγa	'these axes'	lundi ulu	'this rafter'
	mudi uhu	'this tree'	mundu uhu	'this person'
	muzi uhu	'this village'	kamba ihi	'this rope'

Parallel examples of H and penult-H nouns are seen in (27).

(27)	koší ihi	'this dog'	irisó iji	'this eye'
	itukú iji	'this day'	lumí ulu	'this tongue'
	mkonú uhu	'this arm'	morí uhu	'this moon'
	mukamé uhu	'this tree'	mwaná uhu	'this child'
	ifúmu iji	'this spear'	lúmbo ulu	'this song'
	mkáɓo ihi	'this stud'	ŋóndi ihi	'this sheep'

The quantifiers 'some' and 'all' have this same behavior.[5]

[5] The stem *-m* 'some' has the phonetic characteristics of a syllabic nasal as found in various other languages, thus the *m* of Mbololo *rim* is longer and is not comparable to English

(28) a. *toneless nouns*

βaka βam	'some women'	βandu βam	'some people'
βadaβana βam	'some youths'	vikoto vim	'some hands'
ɓoi βam	'some cats'	mbuβa rim	'some gardens'
ndaɣa rim	'some knives'	masoka ɣam	'some axes'
βaka βose	'all women'	βandu βose	'all people'
mbuβa rose	'all gardens'	masoka ɣose	'all axes'

b. *H nouns*

βaná βam	'some children'	vaná vim	'some chicks'
ngukú rim	'some chickens'	mikamé im	'some trees'
matukú ɣam	'some days'		
βaná βose	'all children'	vaná vose	'all chicks'
ngukú rose	'all chickens'		

c. *Penult H nouns*

ŋóndi rim	'some sheep'	mafúmu ɣam	'some spears'
ŋóndi rose	'all sheep'		

The adjective 'many' is another tonally-inert modifier.

(29) a. *toneless nouns*

meda nyingi	'many rivers'	minyango nyingi	'many doors'
maɣembe mengi	'many hoes'	vikoto vingi	'many hands'

b. *H nouns*

ngukú nyingi	'many chickens'	mikamé nyingi	'many trees'
matukú mengi	'many days'		

c. *Penult H nouns*

ngóndi nyingi	'many sheep'	mafúmu mengi	'many spears'
mikáɓo nyingi	'many studs'		

'ream'. However, there is no clear phonological evidence that indicates whether this nasal should be treated as syllabic, or as a coda consonant.

Finally, possessive pronouns fall into this category.

(30) a. *toneless nouns*

βuγanga γwapo	'my medicine'	βuli γwapo	'my bed'
čangu čapo	'my stick'	iɓata japo	'my duck'
igi japo	'my egg'	iγembe japo	'my hoe'
kijiko čapo	'my spoon'	kilambo čapo	'my thing'
lundi lwapo	'my rafter'	mudi γwapo	'my tree'
munyango wapo	'my door'[6]	muzi γwapo	'my village'

b. *H nouns*

čalá čapo	'my finger'	ibembá japo	'my maize'
kijú čapo	'my shadow'	koší yapo	'my dog'
mfukó wapo	'my bag'	munyú γwapo	'my salt'
ngukú yapo	'my chicken'	singó japo	'my neck'
mwaná wapo	'my child'	βukutá γwapo	'my wall'

c. *Penult H nouns*

lúmbo lwapo	'my song'	msénge γwapo	'my stick'
msídu γwapo	'my forest'	mukáɓo γwapo	'my stud'
ŋóndi yapo	'my sheep'	ngánga yapo	'my fowl'
saɓúni yapo	'my soap'	sóɓo yapo	'my stick'

Can we predict which adjectives are tonally inert and which trigger insertion of phrasal tone? The relevant factor is the length of the modifier; specifically whether it is longer than bisyllabic.

A considerable number of these modifiers are determiners, which select a special demonstrative-type set of agreement morphemes, and it is reasonable to at least suspect that the tone behavior has to do with the kind of class prefix on the modifier. For example, the nominal-type agreement for class 3 selected by both nouns and adjectives such as 'big' is /mu/, but the demonstrative-type agreement is /γu/; the class 10 noun prefix is /N/ but the demonstrative agreement is /ji/.

[6] The form of agreement for possessives in class 3 appears to be variable, thus *γwapo* and *wapo*, the latter being the same as class 1 agreement.

Careful scrutiny of the data of the previous section and this section reveals that the nature of the prefix is not the determining factor. First, the numerals '2' and '4' fall into the tonally inert class, unlike '1', '3' and '5' as well as 'how many?' which are tonally regular — see *ndana íˡmwéri* 'one bow' vs. *ngoló imwéri* 'one heart'; *mayu á-dadu* 'three legs' vs. *βaná βa-dadu* 'three children'; *mayembe máˡsánu* '5 hoes' vs. *mesó masánu* '5 eyes'; *mayembe álinga* 'how many hoes?' vs. *marisó alinga* 'how many eyes?'.[7] But some of the numerals use this same series of agreement morphemes, the demonstrative-type prefixes (see *mayu á-dadu* 'three legs', *muri yú-ˡmwéri* 'one root', *mayu álinga* 'how many legs?'). Therefore, not all modifiers selecting the demonstrative series of agreements are tonally inert. Second, the adjective 'many' takes the nominal-type agreement — see *ma-yembe m-engi* 'many hoes', *mbuβa ny-ingi* 'many gardens' — but is still tonally inert. Thus, tonal inertness is not necessarily connected with the kind of agreement morpheme (if any) used on the modifier.

The correct generalization is simply that the modifier must be longer than disyllabic in order to trigger Phrasal H Insertion. Taking the class 2 form for illustration purposes, the known tonally inert modifiers are *βaβi* '2', *ɓana* '4', *aβa* 'these', *βam* 'some', *βose* 'all', *βengi* 'many', *βapo* 'my' (as well as other possessive pronouns) — all disyllables — and these contrast with polysyllabic modifiers which condition H insertion, such as the numerous adjectives and longer numerals such as *βa-ɓaha* 'big', *βa-tíni* 'small', *βa-lača* 'long', *βa-vui* 'short', *βa-rífu* 'thick', *βa-dadu* 'three', *βa-sánu* '5', *βunyanya* '8' and *βá-linga* 'how many'.[8]

Presumably, the distinction between tonally-inert and tonally-regular modifiers historically correlated more tightly with the adjective vs. demonstrative distinction. The inserted H tone is most likely a reflex of the so-called pre-prefix, a H-toned prefix that often appears before the noun class prefix in nouns and adjectives (but not determiners), so that the historical antecedents of [βandu βálača] 'tall people' and [βandu βam] 'some people' were probably something like **βandu á-βalača* versus **βandu βamwe*. With the loss of the overt segmental pre-

[7] The noun 'eye' has two plural forms, *meso* and *mariso*, the latter on analogy to singular *iriso*.

[8] It should be noted that the determination of syllable count is not a strictly surface matter since, as we have seen in the previous section, the class prefix N- for class 9-10 is not surface syllabic, thus especially contrast *muzi ṃ̀-ɓaha* 'big village (cl. 3)' versus *mbuβa mbáha* 'big garden (cl. 9)'. It is assumed that the class 9-10 prefix is — if preconsonantal — syllabic at the stage in the derivation where Phrasal H Insertion applies. But the same prefix is prevocalically desyllabified before Phrasal H Insertion applies in *mbuβa ny-ingi* 'many gardens'. My data do not include any other vowel-initial adjective stems.

prefix, assuming that the tone was preserved as a floating tone that associated with the preceding noun, the puzzle would have arisen as to what the conditions are for appearance of this H. Since the vast majority of adjectives were polysyllabic and the vast majority of determiners were disyllabic, it should not be surprising that a historically incorrect alternative generalization was uncovered by learners of the language, which, when adopted, would have led to analogical extension of the restriction to the numbers '2' and '4' as well as the adjective 'many'.

Synchronically there are any number of ways formally to express the disyllabic exclusion, for example Phrasal H Insertion rule (9) might be restricted so that the triggering modifier must contain more than three syllables; or, a special deletion rule could delete a floating H before a disyllabic modifier. One might even consider cliticizing disyllabic modifiers onto the head noun, as in the Kanerva 1990 account of Chichewa, which combines certain modifiers with their head nouns into a single phonological word, so that the necessary phonological word-plus-word configuration necessary for (9) does not arise. There being no compelling basis for selecting a specific account of surface failure of H insertion, this will be left as an area for future research.

2.3 Noun plus verb. The morphosyntactic conditions on phrasal H have not been investigated in depth. However, it is clear from the available data that the rule only operates within the noun phrase. The following examples of toneless noun plus verb show that no H is inserted in this context.

(31)	maɣembe ɣáguye	'hoes fell'
	njoɣolo yéegwa	'a rooster fell'
	ndaɣa rápotokie	'knives fell'
	βandu βéegwa	'people fell'
	midi yáguye	'trees fell'
	munyango góogwa	'the door fell'
	βaka βálimie	'women cultivated'
	ɓoi βéegwa	'the cats fell'

As expected, the underlying final H of H nouns surfaces before a verb.

(32) koší ¹yáguye 'a dog fell'
βasaβí ¹βéegwa 'witches fell'
βaná ¹βálimie 'children cultivated'
βaná ¹βéegwa 'children fell'
koší ¹yéegwa 'a dog fell'

Finally, penult-H nouns retain their H on the penult.

(33) ngánga yéegwa 'a guinea fowl fell'
saɓúni yápotokie 'soap fell'
ifúmu jéegwa 'a spear fell'
mafúmu γápotokie 'spears fell'

All available data with N+V sentences have a H tone on the subject prefix, making it impossible to separate that phonological fact from the syntactic distinction between verbs and adjectives, in explaining lack of tone insertion. As noted previously, a number of Bantu languages including Kikerewe, Jita, Zinza, Runyankore and Kimatuumbi have a similar morphosyntactically-conditioned H insertion process operating only within the NP.

This section has shown the essential characteristics of tone in nouns and noun phrases: there is an opaque contrast between underlyingly toneless stems and those with a final H tone, the latter H being deleted pre-pausally. In the presence of a modifier with more than two syllables, a floating H is inserted in a noun (though insertion is only evident when the noun is toneless, due to Meeussen's Rule), which then docks to the modifier if possible, otherwise docking to the final vowel of the noun.

3. Verbal Tone.

Issues of verb tone in Mbololo center around two questions: first, what are the factors that determine the pattern of verbs in their citation forms, and second, under what conditions does a H shift from a verb to a following object. The first question is motivated by the fact that Mbololo has rightward tone shifting (which is not evident from noun tonology) as well as prepausal deletion of H which leads to opaque alternations, and the second question is motivated by the fact that postverbal objects sometimes, but not always, receive a H tone after a verb, so again we want to know what facts cause the appearance of H on objects — properties both of the verb and of the noun are relevant to answering that question.

3.1 Citation tone. As in most Bantu languages, Mbololo has two tone classes of verb roots, H and toneless. Toneless roots, in (34a), have no H, regardless of word length. H roots, in (34b), have no H if the root-initial syllable is word final, H on the root-initial syllable if that is the penult, and otherwise have H on the second syllable of the stem.

(34) a. *toneless roots*

ku-gw-a	'to fall'	ku-š-a	'to grind'
ku-lal-a	'to sleep'	ku-sek-a	'to laugh'
ku-lil-a	'to cry'		
ku-ziɣan-a	'to unlock'	ku-dumbu-a	'to slice'
ku-ruku-a	'to unearth'		

b. *H roots*

ku-j-a	'to eat'	ku-nyw-a	'to drink'
ku-βón-a	'to see'	ku-dék-a	'to cook'
ku-tál-a	'to count'	ku-dém-a	'to chop'
ku-sikír-a	'to hear'	ku-laɣáy-a	'to be lost'
ku-zoɣú-a	'to pay'	ku-dafún-a	'to chew'

The pattern of toneless verbs requires little comment: there is no underlying H so none appears on the surface. The pattern of H verbs is generally consistent with the assumption that the H is underlyingly on the first vowel of the stem, where it surfaces in forms such as *kuβóna*. The absence of H in /kujá/ → [kuja] is explicable given the lack of surface final H in the language: I will consider the exact mechanism for deriving toneless [kuja] in section 3.2.

Affixation provides evidence for an underlying distinction between H and toneless monosyllabic stems, which is surface-neutralized in CV stems. When a H root is followed by an affix, the stem is disyllabic and therefore the stem-initial H is not also word-final, so it is not subject to Prepausal H Deletion (8).

(35) a. *toneless verbs*

ku-guša	'to make fall'
ku-šea	'to grind for'

b. *H verbs*

ku-jísa	'to feed'
ku-nyóša	'to water'

The affixed forms above indicate that there is an underlying H/toneless contrast in CV stems as well.

The appearance of H on the second stem syllable of forms such as *ku-dafúna* is indicative of a process of tone shift, which is found in various Bantu languages, including Nyamwezi, Jita and Dembwa, where H shifts one syllable to the right from /ku-dáfuna/. This rightward shift is also motivated by paradigmatic alternations. Examples of toneless verbs such as *ku-lim-i-a* 'to cultivate for', *ku-sek-e-a* 'to laugh for' and *ku-lip-an-a* 'to pay each other' show that the applied and reciprocal affixes *-i-* and *-an-* contribute no H tone. Data in (36) show shifting of the root H to the second stem syllable, compared to the unshifted root-initial position of disyllabic H stems.

(36)	ku-βon-án-a	'to see e.o'	(kuβóna 'to see')
	ku-dek-é-a	'to cook for'	(kudéka 'to cook')
	ku-tal-í-a	'to count for'	(kutála 'to count')
	ku-ɓor-é-a	'to sing for'	(kuɓóra 'to sing')

Furthermore, the data in (37) show that regardless of the number of syllables which follow, H shifts by only one syllable, i.e. this is a bounded process of shifting and not unbounded shift as in Digo (see Kisseberth 1984).

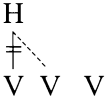
(37)	ku-tem-ér-e-a	'to cut for'
	ku-dek-é-an-a	'to cook for e.o'
	ku-tal-í-an-a	'to count for e.o.'
	ku-om-éš-er-an-a	'to dry for e.o'

As observed in Kisseberth & Odden (2003), there are often two conceivable approaches to tone shifting in languages, on one hand positing a direct shifting rule which moves H from its input position, on the other hand accomplishing shift by separate steps of spreading followed by delinking of multiply-linked H

tones. The idea behind the two-step approach is that languages with tone shift strongly tend not to have multiply-linked H, which may allow shift to be handled by independently motivated tone processes. Odden (2001) argues for a spread-and-delink approach to Dembwa tone, based on the fact that the contexts where H spreads are much broader than the contexts where multiply-linked H delinks. Thus in Dembwa, we find only spreading in /kudéka/ → [kudééká] 'to cook' and /kudékia/ → [kudékíia] 'to cook for', but spreading and delinking in /kudékiana/ → [kudekíaana] 'to cook for each other' and /kudékia βandu/ → [kudekiá βaandu] 'to cook for people'.

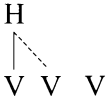
Such an argument is not forthcoming in Mbololo. There seem to be no multiply-linked H tones in the language — no surface HH sequences.[9] Consequently a direct-shifting rule such as in (38) is empirically viable.

(38) *Shift*



The inclusion of a vowel to the right encodes the restriction that the target of shifting cannot be word final, so that Shift does not apply to /kuβóna/. An alternative would be the pair of rules, Spread and Delink.

(39) *Spread*



Delink

There being no facts suggesting an empirical advantage to either account synchronically, I assume the shifting account on the grounds of simplicity and greater concreteness, regardless of the fact that tone shift no doubt arises historically

[9] My notes do contain some transcriptions of the type [βá!lúmáne] 'they bit each other' from /βá-lúmane/ along with [βísikíriana] 'they will hear each other' from /βí-síkiriana/. These pronunciations seem to be in free variation, with the latter HLH pronunciation being more frequent. Pending a deeper phonetic investigation of surface ...HLH... sequences, I conclude that forms such as [βá!lúmáne] are the result of a low-level phonetic tonal interpolation which raises F_0 in a L syllable between Hs, a process known in many tone languages (Hyman 1978) and especially in Kipare (Odden 1985), a language geographically close to Taita.

from the convergence of tone spread and tone delinking.[10] The fact that neither spreading nor shifting targets the final vowel may also have a connection to the loss of pre-pausal H tones, but these non-finality facts are not the same fact since H deletion only deletes prepausal H, whereas shift / spread is restricted from applying to a word-final vowel regardless of phrasal context (see *ni-déka mabemba* 'I will cook maize'). See Kisseberth & Odden (2003) for discussion of the various manifestations of nonfinality in Bantu.

Another context for tone shift is the combination of object prefix and toneless stem. As (40) shows, the toneless stem *-lela* receives a H tone when an object prefix precedes, which is explained by the assumption that object prefixes have H tone, which is subject to bounded rightward shift. As expected, the H of the OP shifts only to the immediately following syllable.

(40)	ku-lela	'to raise a child'
	ku-ni-lé́la	'to raise me'
	ku-di-lé́la	'to raise us'
	ku-ziɣana	'to look at'
	ku-ni-zíɣana	'to look at me'

Consideration of H-toned verbs with an object prefix reveals evidence for a rule of H tone deletion, since such verbs present two underlying H tones but only one surface H. As we see in (41), the only surface H appears where it would be expected to, given just the H of the root: on the penult of disyllabic verbs and the second syllable of longer verbs. In fact, there is at most a single H on the macrostem, the morphological constituent composed of object prefixes plus the traditional stem.

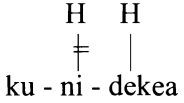
[10] As has been repeatedly emphasized in the history of linguistic theory, simplicity cannot be decided in a theoretical vacuum. An alternative theoretical consideration is that the single rule may require a "two-action" formulation of association insertion and deletion, running afoul of the "single node" conjecture assumed in numerous autosegmental works such as Clements (1985), namely that rules should be restricted to a single simple operation. Whether shift must be expressed formally as two distinct operations, or instead represents a single primitive operation of movement, is a highly abstract theoretical question, one which is orthogonal to the purpose of this paper.

(41)

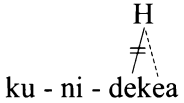
ku-βóna	'to see'
ku-ni-βóna	'to see me'
ku-di-βóna	'to see us'
ku-dekéa	'to cook for'
ku-ni-dekéa	'to cook for me'

This raises two possibilities. One is that the H of the object prefix deletes before the H of a verb stem by "reverse Meeussen's Rule", and the H which survives is then shifted (when applicable, i.e. when the second H is not in the penult) to the following syllable.

(42)



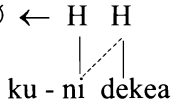
Reverse MR



Shift

An alternative is that the two H tones merge, resulting in a doubly-linked H.

(43)



Subsequently, the H may spread further to the right, but only the final tone association is preserved on the surface, and the multiply linked H then is delinked from the left. This second approach to H sequences in the macrostem would render more plausible the two-step approach of spreading and delinking, by showing that the delinking process has independent motivation. Since it is not evident that there has to be a process of tone fusion rather than direct tone deletion, we cannot draw any strong conclusions based on these data.

There is a contrast in subject prefixes between the third person prefixes, which have H tone, and first and second person which have no H. This H neither shifts nor deletes, as shown by the following data.

(44)

H verbs		*toneless verbs*	
ni-ja	'I will eat'	ni-gwa	'I will fall'
ú-ja	'he will eat'	ú-gwa	'he will fall'
ni-déka	'I will cook'	ni-lima	'I will cultivate'
ú$^{!}$-déka	'he will cook'	ú-lima	'he will cultivate'
di-déka	'we will cook'	di-lima	'we will cultivate'
βí$^{!}$-déka	'they will cook'	βí-lima	'they will cultivate'
na-ǰíe	'I ate'	na-šie	'I ground'
wá$^{!}$-ǰíe	'he ate'	wá-šie	'he ground'
da-lumáne	'we bit e.o.'	na-dirie	'I poured'
βá-lumáne	'they bit e.o'	βá-dirie	'they poured'

The lack of any tone shifting, especially in toneless verbs, where one might expect the H tone of the subject prefix to shift to the root initial position, can be explained by restricting shift to applying only within the macrostem and not across the macrostem boundary. Similarly, the fusion or deletion process that eliminates the H of the object prefix in /ku-ní-dékea/ is restricted to applying just within the macrostem. The presence of downstep in *βí$^{!}$-déka* 'they will cook' and *wá$^{!}$-ǰíe* 'he ate' is predicted under the assumed principle of phonetic interpretation whereby a downstep appears between any two surface-concatenated H tones.

An additional tone pattern is found in verbs, illustrated below in the negative imperative, where verbs lack H tones altogether.[11]

(45)

H stems		*toneless stems*	
kse-je	'don't eat!'	kse-še	'don't grind!'
kse-deke	'don't cook!'	kse-lime	'don't cultivate!'
mse-lumane	'don't (pl) bite e.o.!'	kse-dumbuo	'don't slice!'

The analysis of these forms will be taken up in the next section, since revealing evidence also comes from their phrasal behavior.

[11] The initial [ks] cluster is typologically odd since Taita does not generally allow initial obstruent clusters, and on comparative grounds we would expect [kusedeke] etc. I have never recorded an audible vowel in such examples, but it is possible that under some condition the vowel is phonetically manifested.

3.2. Copula + Noun. The combination of verb plus object does not, in and of itself, give rise to tone alternations; as can be seen in (46), the lexical H of a H verb root remains in the expected stem-initial position before an object, the object's tone is unaffected by the preceding verb, and in particular the combination of a toneless verb plus a toneless object does not lead to insertion of any H.

(46) ku-tála βalimi 'to count farmers'
ku-rukua miri 'to dig up roots'

Contrast the lack of inserted H in *kurukua miri* with the fact that H is inserted in an analogous NP structure *masoka málača* 'long axes' from /masoka malača/.

Under certain circumstances, the combination of verb plus complement noun results in the appearance of an unexpected H. These data provide evidence for a H tone which is underlyingly part of the copula, and shifts into a following noun. The phonological conditions on verbal complements can be clearly illustrated with the copula *ni*. The data in (47) show that a H is assigned to the first vowel of a noun after *ni*.

(47) a. *toneless nouns*

ni íγembe	'it's a hoe'	ni másoka	'it's axes'
ni kíjiko	'it's a spoon'	ni ḿsangaγa	'it's sand'
ni múnjiγe	'it's a girl'	ni múnyango	'it's a door'

b. *H nouns*

ni írina	'it's a name'	ni kídasi	'it's a basket'
ni ḿfuko	'it's a bag'	ni ḿkonu	'it's a hand'

These data suggest either a floating tone as part of the lexical representation of the copula, or an associated H — that is, either (48a) or (48b).

(48) a. H b. H
|
n i n i

This H then appears on the noun by a mechanism similar or identical to that needed for toneless noun plus modifier. Choosing between these representations is not easy, but I assume the linked tone account, and discuss evidence later.

The data in (49) show the copula plus nouns with penult H, where H is assigned after the copula on the first syllable of the noun, separated from any immediately following H by a downstep.

(49)	ni má!fúmu	'it's a spear'	ni mú!káɓo	'it's a vertical stud'
	ni mí!sídu	'it's forests'	ni kíserére	'it's salt'

These forms are parallel to (16) with toneless N plus adjective with H on the second stem syllable, e.g. *iɣeɣo í!tíni* 'small tooth'. Lack of downstep in *ni kíserére* 'it's salt' is due to the intervening syllable between the copula and lexical Hs.

The examples considered so far have involved nouns in classes other than 9-10, which have a surface prefix with a vowel. As (50) shows, the H appears on the first noun-stem syllable when the noun is class 9-10, again separated by a downstep from any adjacent H in the stem.

(50)	njoɣolo	'rooster'	ni njóɣolo	'it's a rooster'
	nyamandu	'animal'	ni nyámandu	'it's an animal'
	suɓéni	'young goat'	ni sú!ɓéni	'it's a young goat'
	saɓúni	'soap'	ni sá!ɓúni	'it's soap'

This again parallels the pattern of H inserted after toneless nouns: the H appears on the first syllable of the following word, regardless of whether it is a prefix or stem syllable.

The preceding data include only trisyllabic or longer nouns: disyllabic nouns are different. The data of (51) present no problem, being composed of disyllabic toneless nouns. The data on the left motivate the conclusion that these nouns are lexically toneless, as shown by their lack of H before an adjective and conditioning of a H on the following adjective by Phrasal H-Insertion (9). The data on the right show H shifted from the copula to the beginning of that noun.

(51)	*N+modifier*		*copula+N*	
	čangu kílača	'long stick'	ni čángu	'it's a stick'
	čia βúnyanya	'8 paths'	ni čía	'it's a path'
	kamba ndáča	'long rope'	ni kámba	'it's a rope'
	maɣo aβi	'2 stones'	ni máɣo	'it's stone'
	mundu múlača	'tall person'	ni múndu	'it's a person'
	ŋombe βúnyanya	'8 cows'	ni ŋómbe	'it's a cow'
	nyumba βúnyanya	'8 houses'	ni nyúmba	'it's a house'

We now turn to two complications.

Examples of penult-H nouns preceded by *ni* are given in (52).

(52)	ngánga	'guinea fowl'	ni ngánga	'it's a guinea fowl'
	ŋóndi	'sheep'	ni ŋóndi	'it's sheep'
	lúmbo	'song'	ni lúmbo	'it's a song'

It is perhaps not surprising that these forms surface as such. If the H were to link to the following noun, it would be automatically absorbed by the H which is already there. But contrast the disappearance of H in (52) with data such as [mbeβá ˈndíni] 'small rat' which involve a toneless N undergoing Phrasal H Insertion (9), where the floating H is linked to the last vowel of the preceding noun. We would have analogously expected **ní ˈngánga* — why does H not appear on the copula?

As shown in (53), the H of the copula is manifested on the copula (rather than appearing on the following noun, or being deleted) when the word-initial target syllable in the noun stands immediately before an underlying word-final H, that is with /cvcv́/ nouns. The examples on the left show that these nouns have underlying final H, and those on the right show that the copula's H does not shift to the noun, as would have been expected.

(53)	čalá kilača	'long finger'	ní čala	'it's a finger'
	kijú kiɓaha	'big shadow'	ní kiju	'it's a shadow'
	koší mbaha	'big dog'	ní koši	'it's a dog'
	mačí γapo	'my water'	ní mači	'it's water'
	mburí βunyanya	'8 goats'	ní mburi	'it's a goat'
	morí mɓaha	'big moon'	ní mori	'it's the moon'
	ngoló mbaha	'big heart'	ní ngolo	'it's a heart'
	tindí βunyanya	'8 tomatos'	ní tindi	'it's a tomato'

Penult-H data like [ni múˈkáɓo] shows that the restriction against H-shifting from the copula is not simply due to the fact of there being a following H: rather, it is a final H that blocks tone shift. Descriptively, we can say that a H is blocked from associating to a vowel before a final H, or that it is blocked from associating to a stressed vowel before a H, insofar as penult stress is automatic in the language.

Assuming that the copula has an underlying floating H, it is not surprising for it to behave somewhat differently from nouns discussed in section 2, since no nouns have an underlying floating H. The synchronic data do not point to any

well-founded conclusions as to why noun plus modifier behave differently from verb plus complement, but it can be speculated that the explanation for this difference has to do with the different historical origins of the floating H. The phenomena in question — blockage of H association and deletion of H — are instances of a common tonal pattern found in Bantu, namely the avoidance of H+H sequences (compliance with the Obligatory Contour Principle). We can easily reconstruct pre-shift forms along the lines of **ní ngoló*, **ní ngángá* and **ní mundu*, which appear contemporarily as *ní ngoló*, *ni ngánga* and *ni múndu*. The case of **ní ngángá* represents straightforward application of reverse Meeussen's rule — deletion of H before adjacent H. Failure of tone shift in **ní ngoló* is comprehensible as blockage of tone shift due to the OCP, and *ni múndu* is the result of unobstructed tone shift. But we also know that simple OCP blockage cannot be the synchronic explanation for *ní ngolo*, since when the target syllable in the next word is followed by a non-final H — /ní suɓéni/ → *ni sú'ɓéni* 'it's a young goat' — shifting does in fact take place.

It was noted above in connection with (41) that regressive deletion of H before H is motivated within the word in Mbololo, since the H tone of an object prefix deletes in /ku-dí-βóna/ -> [kudiβóna] 'to see us'. Because there is no deletion of H in a subject prefix ([ú'-déka] 'he will cook'), regressive deletion must be restricted within the word to the macrostem domain (the subword composed of the stem plus any object prefix). Yet we also see a phrase-level instance of this same process in /ní ngánga/ -> [ni ngánga]. This is theoretically problematic if these are instances of the same rule, because the domain where regressive H deletion applies would be discontinuous — the macrostem but not the word, and the VP but not the NP. The connection between these domains becomes more obvious when you consider the historical structural parallelism between object prefix and verb, and verb plus complement — both involve VP-internal structures, that is, the domain of regressive deletion rule is something about the verb.

Synchronically, the divergence of the shifting H of the NP and the shifting H of the VP does not follow automatically from any representational assumption, most obviously the distinction between linked and floating H. In the NP, as we have seen, linked final H tones do not shift into modifiers and floating H's do, but floating H's in NP do not delete before CV́CV modifiers, so the analogy with NP tonology is close but imperfect.

3.3 Verb + Noun. The emergence of H tones on a word following a verb is not restricted to the copula. The same phenomenon is encountered with the combination of a monosyllabic H stem plus an object. Drawing on examples in the pres-

ent-future tense, (54a) shows that objects receive no H when preceded by a toneless verb. Similarly after disyllabic H toned verbs in (54b), there is no H on the object. But in (54c) we see that the initial vowel of the object receives H after an underlyingly monosyllabic H verb.

(54) a. ni-ša mabemba 'I will grind maize'
ú-ša mabemba 'he will grind maize'
ni-lima mabemba 'I will cultivate maize'
ú-lima mabemba 'he will cultivate maize'

b. ni-déka mabemba 'I will cook maize'
ú$^{!}$-déka mabemba 'he will cook maize'

c. ni-ja mábemba 'I will eat maize'
ú-ja mábemba 'he will eat maize'

The appearance of a H on an object after a H-toned CV stem makes sense in light of the fact demonstrated above that tones also shift from the copula to a following noun. What must be clarified is why H shifts into the object only after a H-toned CV stem. The obvious answer is that since lexical H is assigned to the first vowel of the stem, in a CV stem the H tone would appear on the final vowel, and thus we have shifting from a word-final vowel into the following noun, thus [nija mábemba] derives from /ni-já mabemba/.

Further data show full parallelism with post-copular tone. The H toned CV stems in (55) show that the H shifts into a disyllabic toneless stem, but not into a stem with final H. The data in (55a) illustrate toneless stems and those in (55b) illustrate final H; the data on the right motivate the assignment of these nouns to the toneless vs. H class.

(55) a. ni-ja mánga 'I will eat cassava' manga ɓana '4 cassava'
ni-nywa čófi 'I will drink beer' čofi βúnyanya '8 beers'
ni-ja mági 'I will eat eggs' magi máɓaha 'big eggs'

b. ni-nywá mači 'I will drink water' mači aga 'this water'
ni-nywá βuki 'I will drink honey' βukí uγu 'this honey'

The forms *ni mánga* 'it is a cassava', *ni čófi* 'it is beer' versus *ní mači* 'it is water', *ní βuki* 'it is honey' show the parallelism between monosyllabic H verbs and the copula.

We encounter this pattern in other tenses as well, with the conditional in (56a), the recent past in (56b), the future in (56c) and the infinitive in (56d). In these cases, toneless stems regardless of length contribute no H, nor do polysyllabic H stems, but monosyllabic H stems trigger appearance of H at the beginning of the noun (or end of the verb, in case the noun is /cvcv́/).

(56) a. nika-tála mabemba 'if I count maize'
nika-gua mabemba 'if I buy maize'
nika-ša mabemba 'if I grind maize'
nika-ja mábemba 'if I eat maize'

b. na-tála mabemba 'I just counted maize'
na-lima mabemba 'I just cultivated maize'
na-ša mabemba 'I just ground maize'
na-ja mábemba 'I just ate maize'

c. niča-tála mabemba 'I will count maize'
niča-lima mabemba 'I will cultivate maize'
niča-ša mabemba 'I will grind maize'
niča-ja mábemba 'I will eat maize'
niča-nywá mači 'I will drink water'

d. ku-tála mabemba 'to count maize'
ku-lima mabemba 'to cultivate maize'
ku-nywa čófi 'to drink beer'

As pointed out in (45), certain tenses in Mbololo render the verb surface toneless, examples being repeated below.

(57)

H stems		*toneless stems*	
kse-je	'don't eat!'	kse-še	'don't grind!'
kse-deke	'don't cook!'	kse-lime	'don't cultivate!'
mse-lumane	'don't bite e.o.!'	kse-dumbuo	'don't slice!'

It is common for Bantu languages to make a distinction between tenses where only the lexical H/toneless root distinction (interacting with general phonological principles of the language) determines tone, versus those where an additional H tone is added to the stem. The pattern of (57) is an opaque reflex of this original system, where H was added to the stem in certain tense-aspect categories. This H often appears on the final vowel of the stem (for example in Kikamba, Ekegusii, and the Luhya languages) or varies between the final vowel vs. the second stem vowel, depending on the lexical tone of the root (e.g. Shona and most Rutara languages). One property often associated with this melodic H is that it conditions deletion of preceding H tones within the stem or word, a property found throughout Rutara and Luhya. The data in (59), from the Luhya language Tachoni, illustrate both the melodic H and the deletion of lexical H conditioned by the melodic H. In Tachoni, the melodic H does not surface on the word-final vowel; it spreads to the left, the position being determined by the lexical tone (to the second syllable when the root is toneless, to the third syllable when the root is H-toned). The first two examples illustrate the contrast between the exclusively lexical tone-based pattern of the infinitive in a toneless verb versus the melodic H of the (near) future tense. The second two examples illustrate the pattern of H verbs; note in the last example that a lexical H is deleted in the presence of the melodic H.

(58)	oxu-sukuwanila	'to scrape for each other'
	bali-sukúwáníla	'they will scrape for each other'
	oxu-bótooxananila	'to go for each other'
	bali-botooxánáníla	'they will go for e.o.'

Mbololo forms such as *mse-lumane* presumably reflect earlier *mse-lúmané* with deletion of the lexical tone due to the melodic H, and then deletion of the melodic H itself because it is word-final.

Phrasal data support this account of the all-toneless pattern for Mbololo, since these tenses have the additional quirk of causing assignment of H to a following object noun, with the expected further complication that disyllabic H-final nouns block this tone shift, and realize the H on the final vowel of the verb. Note that H appears after the verb (or at the end of the verb when followed by a CV́CV noun) regardless of the lexical tone or syllable count of the stem.

(59)	H verbs	kse-tale βálimi	'don't count farmers!'	
		kse-tale míri	'don't count roots!'	
		kse-talé koši	'don't count dogs!'	(/košı́/)
	Toneless verbs	kse-kumbe mágo	'don't throw eggs!'	
		kse-kumbe ndága	'don't throw knives!'	
		kse-kumbé tindi	'don't throw a tomato!'	(/tindı́/)

To summarize, this section has shown that verbs provide further evidence for deletion of final H, a process motivated from noun alternations as well. A synchronic shifting process is motivated which moves a H tone one syllable rightwards into a non-final syllable, a process which does not move H from a subject prefix to a verb root or object prefix. A second H-dissimilation process, Reverse Meeussen's Rule, deletes H before H in an object prefix or the copula. It was also shown that a final H tone in a verb will shift into a following complement, and that a final H may arise either with lexically H toned monosyllabic verb stems, or with any stem bearing the reflex of an earlier tense-aspect conditional melodic H.

4. Comparative Tonology of Mbololo.

Synchronic analysis of tone alternations in the Dembwa dialect of Taita also motivates an underlying three-way distinction in noun tone between toneless stems (which are tonally inert), those with final H (which shifts into the following modifier or deletes prepausally), and penult H which spreads or shifts to the final syllable — see Odden (2001) for details. Although the surface behavioral classes are roughly similar, the lexical correspondence between the classes is not one-to-one in the two dialects. The three-way distinction in Dembwa nouns is reduced in Mbololo to a two-way distinction with lexically irregular failure of tone shift. Simple examples of the Dembwa tone classes are given in (60). The appearance of H two syllables after the noun is a reflection of Dembwa's shifting and delinking processes. The underlying forms of the nouns are /βandu/, /βaká/ and /ŋóndi/.

(60)	βandu	'people'	βandu βunyanya	'8 people'
	βaka	'women'	βaka βunyánya	'8 women'
	ŋóndı́	'sheep	ŋondı́ βunyanya	'8 sheep'

Comparison of Mbololo and Dembwa nouns shows that the toneless nouns of Dembwa correspond to toneless nouns in Mbololo. The preceding sections show that these nouns are toneless in Mbololo, and the Dembwa form before *βunyanya* "8" reveals the underlying tone — H nouns condition a H on the following adjective (Dembwa does not automatically insert H after toneless nouns).

(61)	*Mbololo* (*toneless*)	*Dembwa* (*toneless*)	*Dembwa "8 N's"*	*gloss*
	βandu	βandu	βandu βunyanya	people
	meda	meda	meda βunyanya	rivers
	maɣembe	maɣembe	maɣembe βunyanya	hoes
	maɓata	mabata	mabata βunyanya	ducks
	maɣeɣo	maɣeɣo	maɣeɣo βunyanya	teeth
	vikoto	vikoto	vikoto βunyanya	hands
	mbeβa	mbeβa	mbeβa βunyanya	rats
	ndaɣa	ndaɣa	ndaɣa βunyanya	knives
	ŋombe	ŋombe	ŋombe βunyanya	cows
	njoɣolo	njoɣolo	njoɣolo βunyanya	roosters

Nouns in the H class of Dembwa (those with an underlying final H, which causes assignment of a H on the following modifier) also correspond to nouns in the toneless class of Mbololo.

(62)	*Mbololo* (*toneless*)	*Dembwa* (*H*)	*Dembwa "8 N's"*	*gloss*
	βaɣosi	βagosi	βagosi βunyánya	old men
	βaka	βaka	βaka βunyánya	women
	midi	midi	midi βunyánya	trees
	vongo	vongo	vongo βunyánya	heads
	masoka	masoka	masoka βunyánya	axes
	nyumba	nyumba	nyumba βunyánya	houses
	mbuβa	mbuβa	mbuβa βunyánya	gardens
	ndana	ndana	ndana βunyánya	bows
	nyungu	nyungu	nyungu βunyánya	pots

The class of H nouns of Mbololo, with underlying final H, corresponds to the penult-H class of nouns of Dembwa in the following examples.

(63)	*Mbololo* (*H*)	*Dembwa* (*penult-H*)	*Dembwa "8 N's"*	*gloss*
	vala	válá	valá βunyanya	hands
	matuku	matúkú	matukú βunyanya	days
	koši	kóší	koší βunyanya	dogs
	čoka	čóká	choká βunyanya	snakes
	mburi	mbúrí	mburí βunyanya	goats
	tindi	tíndí	tindí βunyanya	tomatoes
	nguku	ngúkú	ngukú βunyanya	chickens
	mizata	mizátá	mizatá βunyanya	sticks

This suggests a standard correspondence and sound change: final H deletes in Mbololo, resulting in lexical restructuring, and penult H subsequently shifts to the right, giving the synchronic /CVCV́/ structure of H nouns in Mbololo.

However, not all Dembwa penult-H nouns correspond to (final)-H nouns in Mbololo. In the following examples, the penult-H nouns of Mbololo also correspond to Dembwa penult-H nouns. Recall that there are relatively few penult-H nouns in Mbololo.[12]

(64)	*Mbololo* (*H*)	*Dembwa* (*penult-H*)	*Dembwa "8 N's"*	*gloss*
	misénge	miséngé	misengé βunyanya	sticks
	misídu	misídú	misidú βunyanya	forests
	mafúmu	mafúmú	mafumú βunyanya	spears
	ŋóndi	ŋóndí	ŋondí βunyanya	sheep
	ngánga	ngángá	ngangá βunyanya	guinea fowl

I assume that the historical process shifting penult H to the final syllable, which affected most nouns with an original penult H, applied incompletely in Mbololo.

Toneless nouns of Dembwa correspond to LL nouns of proto-Bantu or LL patterns in geographically close and tonally conservative (Gonja) Kipare, see for example /βa-ndu/ = *-*ntu* 'people', /m̩-ri/ = *-*di* 'root', /ma-ɣembe/ = *-*gembe* 'hoes', /ma-bata/ = *-*bata* 'ducks', /ma-ɣeɣo/ = *-*gego* 'teeth', /m-beβa/ = *-*beba* 'rats', /ŋombe/ = *ŋ*ombe* 'cow'; /moda/ = Kipare *mw-eta* 'river'. The nouns

[12] Philippson 1991 also notes such a pattern in the Josa dialect and observes that the number of such nouns is very low: apart from *mséngé* 'stick', none of those nouns appears in my data.

which are underlyingly H-final in Dembwa reflect a historically earlier LH pattern, as exemplified by /mi-ɗí/ = *-*tí* 'tree', /nyumbá/ = **jʊmbá* 'house', /masoká/ = **coká* 'axe', /nyungú/ = **jʊngú* 'pot'; /βa-gosí/ = Kipare *va-gosí* 'old men', /βa-ká/ = Kipare *va-čé* 'women. Nouns which in Dembwa have underlying /HL/ (citation [HH]) nouns correspond to earlier *HL (*mbúrí* = **búdi* 'goat', *čóká* = **jóka* 'snake', *m-sídú* = **títʊ* 'forest', *ngángá* = *-*kánga* 'guinea fowl' *i-fúmú* = *-*túmo* 'spear', *m-kónú* = **kóno* 'arm').

The historical development of original *HH is more difficult to trace in the dialects which I have worked on. Philippson (1991) notes the correspondence HH → LL in *singo* 'neck', *msaβi* 'sorcerer' which trigger H on the following word — as H-final nouns of Dembwa do — and (p.c.) finds that correspondence in a number of other words. My notes include a few such nouns, including /m-saβí/ 'sorcerer', /m-lambá/ 'baobab', /i-indí/ 'bone' and /mbangá/, the latter three of which are reconstructed by Guthrie as having *HL tone (Gerard Philippson p.c. argues that Guthrie's tonal reconstructions are mistaken). I also have the correspondence *HH = /HL/ → [HH] (*ngúkú* = **kúkú* 'chicken', *ma-bémbá* = *-*pémbé* 'corn'; *m-zátá* = Kipare *n-zátá* 'stick', *máčí* 'water' = Kipare *mází*), only the first of which unquestionably reflects proto-Bantu. Given the small number of stems with uncontroversial proto-Bantu HH appearing in my Taita data, it is impossible to draw firm conclusions, but based on Philippson's data for the Josa dialect I assume that [HH] is not a regular correspondence for Dembwa and Mbololo.

In the synchronic tonal grammar, the Dembwa and Mbololo dialects have in common certain patterns, including nearly universal ones in Bantu such as the two-way root-initial tone contrast in verbs and some system of melodic tone marking tense-aspect distinctions, as well as more language-specific patterns such as emergence of downstep under H-concatenation and the loss of underlying word-final H. The tendency for rightward shift is found in both dialects, but the specifics of shift and spread differ. Dembwa has a more extensive system of tone spreading and shifting, where H tone can shift two syllables to the right — thus Dembwa /ku-dáfuna nyama/ → [ku-dafuná nyama] 'to chew meat' (vs. Mbololo [kudafúna nyama]). This double-shifting pattern is only found in connection with phrasal combinations or across the macro-stem boundary, so contrast /ku-dáfunia/ → [kudafúnia] in both Mbololo and Demba. The main differences are summarized below.

(65) *Mbololo*	*Dembwa*
No [HH]	[HH] possible if one of the two syllables is the penult
Only one H shift	Phrasally-conditioned secondary shift, including across macro-stem boundary
Direct shifting a possible analysis	Clear decomposition of shift into (broader) spread and (narrower) delinking
No prepausal H's at all	Prepausal H arises via spreading (always [HH#]
Insertion of H in NP after toneless N	No H insertion

Mbololo might seem to be a bit more tonally conservative, in not having the double-shifting of the Dembwa dialect, but overall, Mbololo has a more innovative tonal phonology. Both dialects have final lowering where a single prepausal H is deleted, so that earlier **nyumbá* 'house' becomes [nyumba] in Mbololo and Dembwa. The difference between the dialects lies in the fact that final H is synchronically preserved in the underlying form in Dembwa (as seen from the fact that H shifts from the noun to a modifier — *nyumba βunyánya* '8 houses'), but in Mbololo, original final-H nouns have all been relexicalized as toneless, thus neutralizing the patterns of earlier **ngombe* and **nyumbá* — see Mbololo *ŋombe éegwa* 'the cow fell', *nyumba éegwa* 'the house fell'.

The Mbololo dialect has generalized left-branch delinking, so that where original *HL → HH in Dembwa, such an output undergoes regressive delinking to give underlying LH in Mbololo (compare Dembwa *kudáfûna* vs. Mbololo *kudafúna*). This delinking process feeds final-lowering. The synchronic rule of final lowering may be identical between the dialects, deleting any singly-linked final H. It is likely, however, based on the correspondence in nouns where proto-Bantu *HH appears as LL, that an earlier form of the rule applied to all final H tones, regardless of whether the H was multiply-linked. Dembwa has no lowering in *kóši* "dogs" because the final H is multiply-linked, but in Mbololo, which does not have surface ...HH... at all, *kóši* may have first changed to *koši* due to unrestricted delinking, which then became [koši] due to general final lowering.

A seeming puzzle arises from the fact that a systematic set of historical HL words appear as HL in Mbololo rather than being restructured to /LH/: see infinitives (and other inflected forms) such as earlier **kubóna* → [kuβóna] 'to see' (Dembwa [kuβóná]), contrasting with nouns such as **kóši* → Mbololo /koší/ =

[koši], in not becoming /βoná/ = [βona]. The different shifting patterns in nouns and verbs reflect their different grammatical statuses. The position of the underlying H tone in a verb stem is non-lexical — it is entirely predictable, always on the first vowel of the stem, and the final vowel *-a* is a distinct inflectional morpheme with no underlying tone. The evidence of paradigmatic alternations thus makes impossible lexical reanalysis of the H shift in verbs, and /ku-βón-a/ could not be reanalyzed as /ku-βon-á/. In contrast, because roots such as **kóši* are morphologically simple and the position of H in a noun was not rule-governed, there was no structural impediment to relexicalizing a phonetic output [koší] as underlying /koší/, which is the synchronic underlying form in the Mbololo dialect.

The exact realization of H-shifting in Taita dialects appears rather varied. In the following comparisons, the Josa data are from Philippson 1991, and Rong'e data are from my own notes.

(66)	Dembwa	CVCV	ku-βóná	'to see'
		CVCVCV	ku-dáfûna	'to chew'
	Mbololo	CVCV	ku-βóna	'to see'
		CVCVCV	ku-dafúna	'to chew'
	Josa	CVCV	ku-lodâ	'to dream
		CVCVCV	ku-dafúna	'to chew'
	Rong'e	CVCV	ku-βóná	'to see'
		CVCVCV	ku-dafúná	'to chew'

Three parameters of variations can be inferred from analysis of the dialects. The first is rightward spread, to be further distinguished as primary spread plus secondary spread involving proximity to word boundaries. Second, the spreading process may show resistance of final syllables to receiving H. Third, the languages may show left-branch delinking (unrestricted or restricted from applying to certain penultimate or antepenultimate syllables). Dembwa has unrestricted primary spreading which means that H always spreads one syllable to the right; it also has restricted secondary spreading which means that H will spread again across or into word-final position as long as the target is not phrase-final; and it has restricted left branch delinking, meaning roughly that doubly-linked H is preserved when one branch of the H is on a long penult (the conditions are more complex: see Odden 2001 for further discussion). Mbololo, on the other hand, has restricted primary spreading (no spreading to the final syllable), no synchronic secondary spreading but evidence of earlier unrestricted secondary spreading in nouns, and unrestricted left branch delinking (HH is unattested). The data from Josa suggest

unrestricted primary spreading and unrestricted left branch delinking, and the data from Rong'e suggest unrestricted primary and secondary spreading, and restricted left branch delinking.

(67)

		primary spread	*secondary spread*	*left branch delinking*
Dembwa	ku-βóná	unrestricted		restricted
	ku-dáfûna		restricted	
Mbololo	ku-βóna	restricted		unrestricted
	ku-dafúna		none	
Josa	ku-loɗǎ	unrestricted		unrestricted
	ku-kumbúka		restricted	
Rong'e	ku-βóná	unrestricted		restricted
	ku-dafúná		unrestricted	

Further descriptive and dialect research will be required in order to determine what other tonal patterns are found in Taita, and whether "proto-Taita" fully retained the 4-way system of nominal contrasts from proto-Bantu.

REFERENCES

Bickmore, Lee. 2001. "Downstep and fusion in Namwanga". *Phonology* 17: 297-333.

Clements, G.N. 1985. "The geometry of phonological features". *Phonology Yearbook* 2: 225-252.

Downing, Laura. 1996. *The Tonal Phonology of Jita*. Lincom Europa: Munich.

Hyman, Larry M. 1978. "Tone and/or accent". *Elements of Tone, Stress and Intonation*, ed. by Donna Jo Napoli. Washington: Georgetown University Press. Pp. 1-20.

Kanerva, Jonni. 1990. Focus and Phrasing in Chichewa Phonology. Stanford: Stanford University, Doctoral dissertation.

Kisseberth, Charles & David Odden. 2003. "Tone". *The Bantu Languages*, ed. by Derek Nurse & Gerard Philippson. London & NY: Routledge. Pp. 59-70.

Kisseberth, Charles. 1984. "Digo tonology". *Autosegmental Studies in Bantu Tonology*, ed. by G. N. Clements & John Goldsmith. Dordrecht: Foris. Pp. 105-182.

Leung, Elizabeth. 1991. *The Tonal Phonology of Llogoori: A Study of Llogoori Verbs*. Working Papers of the Cornell Phonetics Lab, No. 6.

Odden, David. 2000. "Opacity and ordering: H-deletion in Kikerewe". *Linguistic Review* 17: 323-335.

Odden, David. 1982. "Tonal phenomena in Kishambaa". *Studies in African Linguistics* 13: 177-208.

Odden, David. 1985. "Three dialects of Kipare". *Current Approaches to African Linguistics*, Vol. 3., ed. by Gerritt Dimmendaal. Dordrecht: Foris. Pp. 257-280.

Odden, David. 1996. *The phonology and morphology of Kimatuumbi*. Oxford: Clarendon Press.

Odden, David. 2000. "The phrasal tonology of Zinza". *Journal of African Languages and Linguistics* 21: 45-75.

Odden, David. 2001. "Tone shift and spread in Taita I". *Studies in African Linguistics* 30: 75-110.

Philippson, Gerard. 1991. *Tons et accent dans les langues bantu d'afrique orientale: étude comparative, typologique et diachronique*. Paris: Universite Paris V, Doctorat d'etat.

Philippson, Gerard & Marie-Laure Montlahuc. 2003. "Kilimanjaro Bantu (E60 and E74)". *The Bantu Languages*, ed. by Derek Nurse & Gerard Philippson. London & NY: Routledge. Pp. 475-500.

Poletto, Robert. 1998. *Topics In Runyankore Phonology*. Columbus: OSU, Doctoral dissertation.

Department of Linguistics
222 Oxley Hall
Ohio State University
Columbus, OH 43210
odden@ling.osu.edu

[received June 5, 2006
accepted Sept. 12, 2006]

Studies in African Linguistics
Volume 35, Number 1, 2006

ASPECTS OF MAAY PHONOLOGY AND MORPHOLOGY*

Mary Paster
Pomona College

This paper presents a descriptive overview of the phonology and morphology of the Lower Jubba dialect of Maay, a language of southern Somalia. The paper highlights several points of typological, dialectological, and theoretical interest in this language. For example, the nominal morphology exhibits a somewhat unusual pattern of plural marking that interacts in a complex way with the gender marking system. Where relevant, comparisons are made between this dialect and other dialects of Maay and Somali, and speculation is made as to the historical origin of some of the unusual phonological and morphological phenomena observed in this dialect.

1. Introduction.

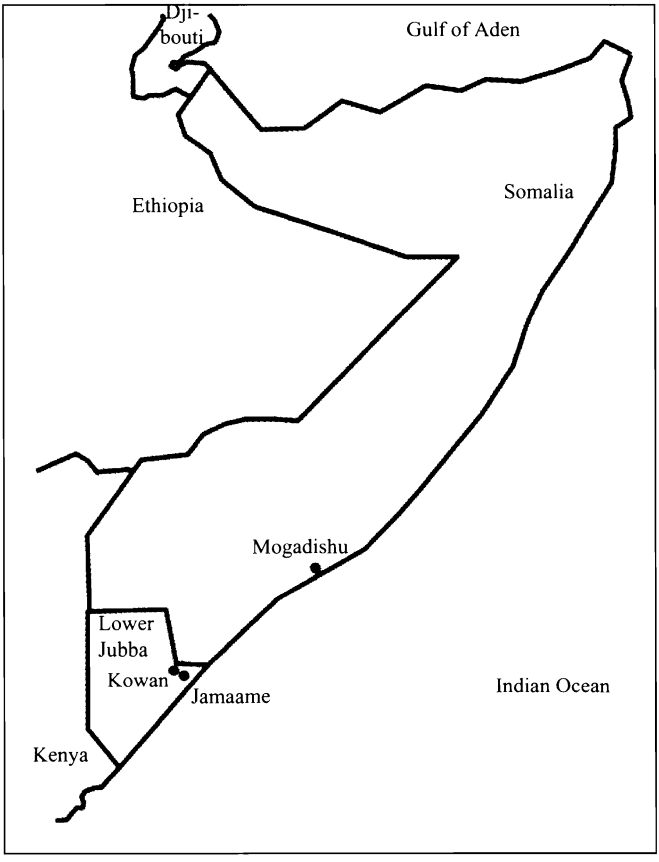
This paper presents aspects of the phonology and morphology of a dialect of Maay, a Cushitic language of southern Somalia. The dialect to be discussed here, which I will refer to as Lower Jubba Maay (LJM), appears to be undescribed in the literature. The data in this paper are the result of four months of research with a native speaker of LJM in Pittsburgh, Pennsylvania in winter and spring of 2006.

1.1 Somali Dialects. There exists no comprehensive study of Somali and Maay dialects, and in fact the question of whether Somali and Maay represent dialects of the same language or different languages entirely has not been resolved, since

* Many thanks to the Maay consultant for this research, Mr. Osman Mohamed. Thanks also to Dave Odden and an anonymous reviewer for helpful comments on an earlier version of this paper, and to the students in Linguistics 1441/2441 at University of Pittsburgh, who ran some of the elicitation sessions from which data presented here have been taken. All data are from my own field notes.

what are sometimes described as Somali dialects (including Maay dialects) are in some cases mutually unintelligible (Saeed 1987: 2). Anecdotal impressions from Maay speakers suggest that the language situation in Somalia is a "dialect continuum" in that neighboring dialects are all mutually intelligible, but the dialects at opposite ends of the continuum are not mutually intelligible. For example, the Maay consultant for the present study is from the far south of Somalia and reports that he is able to understand the Central Somali dialect described by Saeed (1982) but not the Somali spoken in the far north. As will be discussed, in several ways LJM appears to be an innovative dialect with respect to other dialects of Maay and Somali, such as Central Somali (Saeed 1982) and Standard Somali (Saeed 1987).

Map 1: Map of Somalia showing Lower Jubba state and city of Kowan



1.2 Lower Jubba Maay. The dialect to be described here (Lower Jubba Maay, or LJM) is spoken in the state of Lower Jubba, which is the southernmost state in Somalia. The consultant is a 27 year-old man from Kowan, which is just across the Jubba River from the city of Jamaame (see Map 1).

LJM shares many features with Central Somali (Saeed 1982) and the Standard Somali spoken in the north, but there are significant differences, including differences in the consonant and vowel inventories, morphology, and lexical items. These will be pointed out throughout the paper as they become relevant.

2. Phonology.

2.1 Segmental Inventory. The segmental inventory of LJM differs not only from the inventory of Standard Somali, but also from that of the more closely related Central Somali. The consonantal inventory of LJM is presented below. Sounds in parentheses are very rarely attested, while sounds in brackets occur in surface forms but are not posited as phonemes of the language.

(1) *Consonants of Lower Jubba Maay*

Labial	Dental	Alveolar	Alveo-Palatal	Palatal	Velar	Glottal	
		ɗ		ʼy	ɠ		Implosive
(p) b	t d				k g	ʔ	Plosive
			ǰ				Affricate
f [β]	[ð]	s	š		[γ]	h	Fricative
m	n			ñ	[ŋ]		Nasal
		l r					Liquid
w				y			Glide

The alveolar and velar implosives [ɗ] and [ɠ] correspond to a voiced retroflex plosive [ɖ] and voiceless uvular plosive [q], respectively, in both Standard and Central Somali. The palatal implosive [ʼy] may correspond to the voiced palatal stop [ɟ] in Somali, though no cognates have been established to verify this. Though long consonants are documented in Standard and Central Somali, they are not found in LJM. In all cases where affixation would yield sequences of identical consonants, some process prevents these from surfacing. In the case of heteromorphemic sequences of any nasal + *n*, the first nasal always surfaces as [ŋ], as in forms such as *aaŋ-ni* 'we ate' (from underlying /aam-ni/). This could be

analyzed as a dissimilatory process if we assume that the first nasal in such sequences first assimilates to the following *n* via the regular assimilation process to be described in section 2.4., though such an analysis is admittedly somewhat abstract. Sequences of identical consonants other than *n* are reduced to a single consonant. As in Central Somali (as discussed by Saeed 1982: 4), the phonological difference between underlying C_iC_i vs. C is maintained among stops in intervocalic position since underlying singleton stops undergo weakening to fricatives whereas sequences of identical stops resist weakening. For example, input /k+k/ surfaces as [k] ~ [g] intervocalically, while input /k/ and /g/ surface as [γ] in the same environment. This accounts for the difference between the intervocalic velar obstruents in [diiki] ~ [diigi] 'the rooster' (from underlying /diik + ki/) and [diβiγi] 'bull' (from underlying /dibigi/).

Though its consonants differ significantly from other dialects of Maay and Somali, the vowel inventory in LJM is identical to those of both Central and Standard Somali except that Saeed describes a sixth vowel in the short vowel inventory of Central Somali, a high central vowel, that does not seem to exist in LJM. The vowel inventory of LJM is presented below.

(2) *Vowels of Lower Jubba Maay*

	Front	Central	Back
High	i		u
Mid	e		o
Low		a	

All five vowels have both long and short forms. As described by Saeed (1982, 1987) for Central and Standard Somali, corresponding long and short vowels in LJM have somewhat different qualities. In LJM, the short vowels in general are less widely dispersed in the vowel space than their long counterparts. This phonetic difference is not phonologically contrastive. Throughout this paper, I will use the five standard vowels to indicate both long and short vowels, but the phonetic difference in quality between long and short vowels should be kept in mind. On a related note, there is no evidence for a vowel harmony process in LJM like the one found in Standard Somali (Saeed 1987: 19, Armstrong 1934).

2.2 Tone or Accent. Hyman (1981), Saeed (1982, 1987), and Armstrong (1934) document contrastive tone and/or accent in some dialects of Somali. In Standard Somali, tone distinguishes not only lexical items, but also some grammatical

categories such as case (Saeed 1987). However, no such effects of tone or accent are found in LJM. Stress is root-final, but it is not very prominent and is often not distinguishable at all, and the pitch profile of words is predictable based on the number and shape of syllables in the word and the position of the word in the sentence. Saeed (1982: 9) shows that in Central Somali (CS), tone is contrastive on noun roots. According to Saeed, most nouns have final high tone, while some disyllabic roots have initial high tone. As seen in the examples below, both patterns correspond to final stress in LJM. (3a) shows nouns with final high tone in CS and the corresponding final-stressed nouns in LJM (high tone is marked with an acute accent for the CS examples; stressed syllables in LJM are indicated by underlining the vowel). (3b) shows high-initial nouns in CS for which LJM cognates were found, and as can be seen here, the LJM cognates have final stress, not initial stress.[1]

(3)

	CS	*LJM*	
a.	osbə́	usbo̲	'salt'
	boodə́	boodo̲	'thigh' (CS) / 'heel' (LJM)
	ɖilmaañə́	ɖilmaaño̲	'mosquito'
b.	fárow	faro̲	'zebra'
	ókun	oku̲ŋ	'egg'
	éyduur	e̲e̲y duure̲t	'wild dog'

In monosyllables, CS contrasts high vs. low tone. There is no such contrast in LJM; all monosyllables are produced with the same kind of word stress. Some examples are shown below (words with no acute accent in CS have low tone). Note that in some cases, tone distiguishes masculine nouns (4a) from feminine nouns (4b) in CS; this distinction is neutralized in the LJM cognates.

[1] While *éyduur* 'wild dog' is transcribed by Saeed (1982: 85) as a single word, the LJM cognate appears to be a noun phrase, *e̲e̲y duure̲t*. In LJM, *duuret* is an adjective meaning 'wild', and is used in the names of other animals such as *mukulal duuret* 'wild cat' and *loi duuret* 'wild cow'. Because *e̲e̲y duure̲t* has two roots, its stress pattern does conform to the root-final stress generalization. It should also be pointed out that the LJM nouns cited here are monomorphemic, despite the high frequency in this data set of final *o* that might suggest that these words are morphologically complex. I believe the high frequency of *o* here to be an accident resulting from the particular CS cognates cited by Saeed, since *o* is not necessarily the most common final vowel in LJM.

(4)

	CS	*LJM*	
a.	éey	e̲e̲y	'male dog'
	wéel	we̲l	'male calf'
	móos	mo̲o̲s	'banana'
	róob	ro̲o̲p	'rain'
b.	eey	e̲e̲y	'female dog'
	weel	we̲l	'female calf'
	ǰeer	ǰe̲e̲r	'hippopotamus'
	lug	lu̲k	'leg'

In addition to the lack of lexically contrastive stress, the case-marking function of tone in some Somali dialects is also absent in LJM. Saeed (1982) gives an example of two sentences distinguished by tone: *úsə dîli* 'he killed it' vs. *usə́ dîli* 'it killed him'. The two sentences are homophonous in LJM (*usú dîli*), since in LJM nouns are pronounced with the same pitch pattern regardless of their function in the sentence. Thus, the lack of case marking (whether by tones or segments) results in ambiguity in sentences where the subject and object would trigger the same verb agreement marking. To give another example, the sentences *ii yahas aanti* and *yahas ii aanti* can both mean either 'she ate a crocodile' or 'a crocodile ate her'. This is because the pronoun *ii* 'she' and the noun *yahas* 'crocodile' are both feminine singular forms and therefore can both be the subject of the verb *aan-t-i* 'eat-Fem-Past'. The word order in LJM is relatively free with a preference for the verb to occur last, but in the sentences cited above, word order may be used to disambiguate the meaning, since the consultant first volunteers forms in which the subject occurs before the object (e.g., the consultant volunteers *ii yahas aanti* for 'she ate a crocodile' and *yahas ii aanti* for 'a crocodile ate her'). However, it is also possible that this is merely an effect of the word order in the English stimulus.

Saeed also reports that verbs exhibit characteristic tonal patterns in different morphological contexts in Central Somali (1982: 10). These are absent in LJM. Below are the forms of the Central Somali verb *šeeŋ* 'bring' (Saeed 1982: 24-26) that have clear correspondents in LJM. Note that regardless of the location of the high tone in each Central Somali form, the root bears stress in the corresponding LJM form.

(5)	*CS*	*LJM*	
	šéen-i	šeen-i	'I brought' (simple past)
	šeen-ə ǰér-i	šeen ǰir-i	'I used to bring'
	šeen-óoy-ə	šeen-oy-e	'I am bringing'
	šeen-é	šeen-e	'I am about to bring'
	šeen-ə dóon-ə	šeen doñ-ya	'I will bring'
	šeen	šeen	'bring!'
	šeen-á	šeen-a	'bring! pl.'

I conclude that LJM is not a tonal language. It is unclear whether LJM has lost its tone or whether tonal contrasts were innovated in dialects spoken further to the north, but the former seems more likely since root-final stress is uniform in LJM and there is no obvious environment that would have conditioned a split into high vs. low tone in the northern and central dialects.

2.3 Root Shape and Loanword Adaptation. The largest native roots in LJM are three syllables; longer words appear to be affixed forms, compounds, or borrowings. Roots may begin with a consonant or a vowel (in the latter case, initial glottal stops are inserted to provide an onset when the preceding word does not end in a consonant). Roots may end with a consonant or vowel, though some segments are much more common than others in root-final position. For example, while many roots end in /m/, very few end in /n/, and it seems that no root ends in /ñ/ or /ŋ/ (though almost all nasal-final words have final [ŋ] on the surface due to a process to be described in section 2.4). Glottal stop is also very rare as a root-final segment. Impressionistically, among stem-final vowels, /e/, /o/, and /a/ are common while /i/ is somewhat less common and /u/ is rare.

The maximal syllable in LJM is CVVC. Consonant clusters are not permitted in onset or coda position. The longest sequences of consonants consist of two consonants, and these occur only intervocalically. The minimal syllable consists of a single short vowel, but no words of this shape are recorded; the smallest words have the shape VV (e.g., *ii* 'she').

Loanwords have been identified as being borrowed from at least four different languages: English, Italian, Swahili (or other Bantu), and Arabic. The patterns of loanword adaptation provide evidence for the root and syllable structure generalizations mentioned above as being part of the grammar of the language rather than mere statistical generalizations. For instance, as seen in the examples below, consonant clusters in the source language are eliminated via vowel inser-

tion or consonant deletion (inserted vowels are in bold type; sites of consonant deletion are underlined).

(6)		
	basipor_	'passport'
	tareŋ	'train'
	kombuyuter	'computer'
	isbuña	'sponge' (< It. *spugna*)
	fiyus	'fuse'
	bol_	'bolt'
	kareem	'shaving cream'

Borrowings from Arabic include *ilbab* 'door' (cf. St. Ar. *el baab* 'the door') and *saʔat* 'watch/clock' (cf. St. Ar. *saʕa*, pl. *saʕat*); borrowings with a Bantu source include *ñaama* 'meat' (cf. Proto-Bantu **nyama*) and *mateesa* 'peanut'. Words borrowed from these languages undergo minimal changes, probably because the syllable structure restrictions of the source languages are similar to those of LJM.

2.4 Phonological Processes. LJM exhibits four major phonological processes that result in alternations: Nasal Place Assimilation, Final Nasal Velarization, Coronal Fusion, and Intervocalic Lenition. There is no crucial ordering or ranking of these processes, since no combination of them applies to the same type of sound in the same environment. The four processes are described below.

First, a process of Nasal Place Assimilation is observed, in which nasals agree in place of articulation with any immediately following consonant, in some cases resulting in alternations. This applies within words via both affixation (7a) and compounding (7b). The nasal-final roots are shown in both pre-consonantal (assimilating) and pre-vocalic (non-assimilating) contexts to give evidence for the underlying place of articulation of the nasal (in each of these cases, the underlying nasal is /m/; see below for further discussion).

(7)		*Pre-consonantal context*		*Pre-vocalic context*	
	a.	ereñ-yal	'goats'	erem-o	'goats'
		aan-ti	'she ate'	aam-i	'he ate'
		ɗan-ti	'she drank'	ani ina-ɗam-aw	'I might drink'
		bilan-tew	'which woman'	bilam-o	'women'
		saan-ti	'the foot'	saam-o	'feet'
		gaʔan-tey	'my hand'	gaʔam-o	'hands'
		miniŋ-ki	'the house'	minim-o	'houses'

b.	okun šalal	'egg and tomato dish'	okum-o	'eggs'
	inaŋ gewer	'baby girl'	inam-o	'babies'
	ereŋ gondolo	'sheep'	erem-o	'goats'

The one exception to this generalization is that any nasal before *n* surfaces as *ŋ*, as discussed in section 2.1.

A second process in LJM, Final Nasal Velarization, affects the place of articulation of nasals: word-final nasals in LJM, as in Central Somali (Saeed 1982: 5) neutralize to [ŋ]. A small number of exceptions have been found in LJM, but all of the exceptions found in this study were borrowed words, e.g., *kareem* 'shaving cream', *ɗalafilin* 'television', and *broon* 'brown'. Other nouns (including other borrowed words such as *biŋ* 'pin' from underlying /bin/ and *balooŋ* 'ball' from /baloon/) do undergo velarization, and the result of this in combination with the nasal assimilation rule discussed above is that the identity of a stem-final nasal is generally only recoverable in plural forms with the *-o* suffix. Below are examples of nouns with underlying /m/ (8a) and /n/ (8b).

(8)

a.	laam-o	'branches'	laaŋ	'branch'
	suum-o	'belts'	suuŋ	'belt'
	sum-o	'poisons'	suŋ	'poison'
	sim-o	'hips'	siŋ	'hip'
	bilam-o	'women'	bilaŋ	'woman'
	erem-o	'goats'	ereŋ	'goat'
	minim-o	'houses'	miniŋ	'house'
	diidim-o	'turtles'	diidiŋ	'turtle'
	ilim-o	'teardrops'	iliŋ	'teardrop'
	okum-o	'eggs'	okuŋ	'egg'
	naarǰim-o	'coconuts'	naarǰiŋ	'coconut'
	saam-o	'feet'	saaŋ	'foot'
	gaʔam-o	'hands'	gaʔaŋ	'hand'
	saham-o	'food trays'	sahaŋ	'food tray'
b.	buubun-o	'snails'	buubuŋ	'snail'
	bin-o	'pins'	biŋ	'pin'
	baloon-o	'balls'	balooŋ	'ball'

Interestingly, as is represented in the above data set, most nouns exhibit a single pattern: [m] in the plural form corresponds to [ŋ] in the singular form. It is a very

small number of words (e.g., 'snail' and 'pin') that establish the direction of the process seen here as {*m*, *n*} → *ŋ* in uninflected forms, rather than *ŋ* → *m* in the plural. It is possible that an analogical change is underway such that all of the nasal-final stems end in [m] in the plural form. Evidence for the change could include instances of stem-final [m] in LJM plurals corresponding to other, non-labial nasals in Standard Somali. Unfortunately, several sources such as Luling (1987) list nouns in their singular forms, which may have undergone neutralization in the place of articulation of final nasals, and I have been able to establish only one LJM cognate with forms cited in sources that do indicate the precise identity of stem-final nasals (e.g., Kenstowicz 1994). The one example is LJM *daŋ* 'affair' (pl. *dam-o*) corresponding to Somali *dan/ dan-o* (Kenstowicz 1994: 128). This example does support the hypothesis that stem-final nasals are changing to /m/ in LJM, but more examples are needed.

The domain of application for this rule does appear to be the word-final position, as opposed to, e.g., utterance-final position. As shown below, a word-final nasal surfaces as /ŋ/ even when followed by a vowel in the following word, at least within the syntactic contexts represented in these examples (words exhibiting Final Velar Nasalization are indicated in bold). No examples were found in which a word-final nasal fails to undergo Final Nasal Velarization (except in the case of the specific exceptional words mentioned above).

(9) niŋ-ki **inaŋ** ili ɗeɗeel-oy -e
man-det baby with play -pres.prog-3sgm.pres.prog
'the man is playing with a baby/child' (cf. *inam-o* 'babies')

ereŋ eey-ki ɗini-'ye roor-oy -e
goat dog-det side -3sg run -pres.prog-3sgm.pres.prog
'a goat is running beside/behind the dog' (cf. *erem-o* 'goats')

balooŋ inaŋ-ki dariša -ði ka 'yeβ-i
ball baby-det window-det inst. break-3sgm.past
'the baby/child broke the window with a ball'[2] (cf. *baloon-o* 'balls')

[2] The word order that is volunteered first for this sentence is *inaŋ-ki balooŋ dariša-ði ka 'yeβ-i*. However, the sentence presented here (selected in order to provide the pre-vocalic context for the final nasal of *balooŋ*) is also accepted by the consultant, along with corresponding sentences exhibiting four additional possible orders for a total of six.

A third phonological process of LJM is Coronal Fusion. LJM differs from both Central and Standard Somali in its treatment of /l+t/. In Central Somali, /l+t/ becomes [ll] (Saeed 1982: 5). In Standard Somali, these consonants fuse into [š] when the /t/ belongs to an inflectional suffix (Saeed 1987: 24) (this is very often the case, since all of the inflectional suffixes with feminine agreement begin with /t/, as will be discussed below). The result of the Standard Somali fusion process is seen in possessed forms of *walaal* 'sister' in LJM, as seen below (all possessive suffixes have underlying initial /t/ when the possessed noun is feminine).

(10)	walaaš-ey	'my sister'	walaaš-aynu	'our sister'
	walaaš-a	'your sister'	walaaš-iŋ	'your pl. sister'
	walaaš-is	'his sister'	walaaš-io	'their sister'
	walaaš-ie	'her sister'	walaaš-i	'the sister'

It appears that *walaal* is exceptional in undergoing this process, since all other /l+t/ sequences that were elicited in LJM reduce to [l] instead of [š]. Examples are shown below; all nouns in this set are feminine, and therefore, as will be explained in section 3.2, the suffixes have underlying initial /t/.[3]

(11)	weel	'calf'	hambal	'leaf'
	weel-ey	'my calf'	hambal-ey	'my leaf'
	weel-a	'your calf'	hambal-a	'your leaf'
	weel-i	'the calf'	hambal-i	'the leaf'
	'yonfol	'bark'	mukulal	'cat'
	'yonfol-ey	'my bark'	mukulal-ey	'my cat'
	'yonfol-a	'your bark'	mukulal-a	'your cat'
	'yonfol-i	'the bark'	mukulal-i	'the cat'
	kaal	'spoon'	il	'eye'
	kaal-ey	'my spoon'	il-ey	'my eye'
	kaal-a	'your spoon'	il-a	'your eye'
	kaal-i	'the spoon'	il-i	'the eye'

[3] The fact that these are feminine nouns is evident when they are contrasted with masculine *l*-final stems, which take *k*-initial masculine-agreeing suffixes: *alol-key* 'my tray', *baskil-key* 'my bicycle', *shawel-key* 'my tiger', *hel-key* 'my nut', *ǰornal-key* 'my newspaper', and *nal-key* 'my light'.

This process can be thought of in two different ways. It could be analyzed as assimilation of /t/ to an immediately preceding /l/ (as in Central Somali) followed by the application of the weakening process (already motivated in LJM) that reduces geminates to singletons. In this view, the reduction of /l+t/ to [l] would take place in two steps: *lt* → *ll* → *l*. Alternatively, one could analyze this as simply a single process that deletes /t/ after /l/. One advantage of the two-step analysis is that each step is independently motivated (though the first step is motivated in a different dialect); on the other hand, there is no direct evidence for the intermediate stage *ll*. The alternative one-step proposal does not have this problem, and furthermore, it seems likely to be the analysis posited by the language learner since /l+t/ apparently always surfaces as [l] in regular forms (except in forms of *walaal*). Therefore, I will assume that the reduction of /l+t/ is the result of a single rule deleting /t/ in this environment.

A final phonological process to be discussed here is Intervocalic Lenition. As was mentioned earlier in the discussion of underlying geminates vs. singleton consonants, stops in LJM occur as voiced fricatives at the same place of articulation when they are in intervocalic position. The resulting alternation can be observed in the examples below, where suffixation of the plural marker *-o* to a stem ending in a stop provides the intervocalic context that triggers lenition.[4]

(12)	geet	'tree'	geeð-o	'trees'
	belet	'city'	beleð-o	'cities'
	irbit	'needle'	irbið-o	'needles'
	hidik	'star'	hidiɣ-o	'stars'
	diik	'rooster'	diiɣ-o	'roosters'
	buuk	'book'	buuɣ-o	'books'
	luk	'leg'	luɣ-o	'legs'
	ɗek	'ear'	ɗeɣ-o	'ears'
	harak	'rope'	haraɣ-o	'ropes'
	kasap	'sugar cane'	kasaβ-o	'sugar canes'
	ilbap	'door'	ilbaβ-o	'doors'
	kop	'cup'	koβ-o	'cups'

[4] Note that although some roots are transcribed with final voiced obstruents while others have final voiceless obstruents, there is apparently no voicing contrast root-finally. No minimal or near-minimal pairs have been found that would motivate such a contrast. I have therefore reproduced these examples just as I transcribed them. Word-final dental stops tend to sound like [t], and word-final velars sound like [k], while word-final labial stops vary between [b] and [p]. All are unreleased word-finally.

The reason for assuming that these words have underlying final stops that change to fricatives rather than *vice versa* is that voiced fricatives have a more limited distribution than do stops in LJM. Voiced fricatives occur only intervocalically, whereas stops occur word-initially, word-finally, and in syllable-final position before another consonant. Stops do also occur intervocalically in words such as *diiki* 'rooster', but recall from section 2.1 that the [k] in this form corresponds to underlying /k+k/, so the presence of surface intervocalic stops results from the fact that geminate reduction applies after intervocalic lenition (reduction counterfeeds lenition).

Intervocalic lenition does not always apply; it is variable, but at least in morphologically derived contexts, application of the rule is always possible. There are some monomorphemic words within which the rule will never apply, even optionally. For example, in the data set above, the word [hidik] always surfaces with medial [d], never [ð]. A possible explanation for this is that the word has an underlying medial geminate, i.e. /hiddik/, and that the /dd/ reduces to [d] on the surface. There is no external evidence for /dd/, but this does solve the problem of non-application in words of this type, and it is consistent with the doubled consonant reduction pattern that we already know to exist in the language.

3. Noun Morphology.

The noun morphology of LJM exhibits a number of interesting characteristics, such as an unusual pattern of plural marking that includes optional phonologically licensed multiple plural marking, and an interesting interaction between number and gender. Markers modifying singular feminine nouns have initial /t/, while the masculine correspondents generally have initial /k/ with a few principled exceptions. The gender distinction is motivated by the fact that nouns referring to female humans and animals take suffixes beginning with /t/, while nouns referring to male humans and animals take suffixes beginning with /k/, and all other nouns pattern arbitrarily in the suffixes that they take, regardless of their phonological shape, semantics, or any other grammatical factor. Nouns taking *t*-initial suffixes include words corresponding to English 'woman', 'mother', 'girl', 'grandmother', 'daughter', 'female cow', 'female dog', and also 'knife', 'crocodile', 'napkin', 'foot', 'finger', 'leg'. Nouns taking *k*-initial suffixes include words corresponding to 'man', 'father', 'boy', 'grandfather', 'son', 'brother', 'bull', 'male dog', and also 'bicycle', 'cup', 'rabbit', 'tree', 'head', 'mouth', and 'thigh'. A

noun can have masculine or feminine gender agreement with a corresponding meaning change, e.g., *eey-ki* 'the (male) dog' vs. *eey-ti* 'the female dog'.

The *t* vs. *k* distinction is so prevalent that one could call them agreement markers and factor them out from the grammatical markers that include them (definite markers, demonstratives, and possessive markers). For example, we could assume that the definite marker does not have two underlying forms, feminine /-ti/ and masculine /-ki/, but rather that it has a single form /-i/, which can be preceded by a feminine agreement marker /t/ or a masculine agreement marker /k/, yielding the surface forms *-ti* and *-ki.* In the examples below, I have not included morpheme breaks after these 'gender agreement' markers, but one could assume that these are, in fact, separate morphemes.[5]

3.1 Number. LJM exhibits phonologically conditioned suppletive allomorphy (PCSA) in the plural marking. Plural is marked by two suffixes, *-o* and *-yal.* All vowel-final stems take the *-yal* suffix; they cannot take the *-o* suffix. Examples are shown below.

(13)				
	šati	'shirt'	šati-yal	'shirts'
	buundo	'bridge'	buundo-yal	'bridges'
	mindi	'knife'	mindi-yal	'knives'
	baaka	'box'	baaka-yal	'boxes'
	aweesa	'worm'	aweesa-yal	'worms'
	liwa	'lion'	liwa-yal	'lions'
	kora	'small monkey sp.'	kora-yal	'small monkey sp.'
	ɗeǰi	'snake'	ɗeǰi-yal	'snakes'
	bakaile	'rabbit'	bakaile-yal	'rabbits'
	muata	'duck'	muata-yal	'ducks'
	raka	'frog'	raka-yal	'frogs'
	mateesa	'peanut'	mateesa-yal	'peanuts'
	maða	'head'	maða-yal	'heads'
	inɗo	'eye'	inɗo-yal	'eyes'
	bakeeri	'cup'	bakeeri-yal	'cups'

[5] There are two main reasons why I have not indicated separate gender agreement morphemes. The first is mere notational convenience. The second is that, as will be seen, there are two problematic possessive markers that do not exhibit the usual *t* vs. *k* agreement pattern. Though the small number of exceptional morphemes does not necessarily disprove the gender agreement marker hypothesis, I have elected not to use a type of notation that would require a synchronic explanation for these exceptional forms.

At first, the distribution of the two plural suffixes might appear to be a neat complementary one, with vowel-final stems taking *-yal* and consonant-final stems taking *-o*. And, in fact, plural forms with *-o* are usually volunteered first when the consultant is asked to pluralize consonant-final nouns. However, the situation is more complicated, in that there are three ways to form a plural for any consonant-final stem. As seen in (14), consonant-final stems can take not only *-o*, but also *-yal*, or the combination of *-o* followed by *-yal*.

(14)

Singular	*Plural*	
gaʔaŋ	gaʔam-o ~ gaʔañ-yal ~ gaʔam-o-yal	'hands'
sahaŋ	saham-o ~ sahañ-yal ~ saham-o-yal	'food trays'
ereŋ	erem-o ~ ereñ-yal ~ erem-o-yal	'goats'
buubuŋ	buubun-o ~ buubuñ-yal ~ buubun-o-yal	'snails'
biŋ	bin-o ~ biñ-yal ~ bin-o-yal	'pins'
mukulal	mukulal-o ~ mukulal-yal ~ mukulal-o-yal	'cats'
eey	eey-o ~ eey-yal ~ eey-o-yal	'dogs'
geet	geeð-o ~ geed-yal ~ geeð-o-yal	'trees'
yahas	yahas-o ~ yahas-yal ~ yahas-o-yal	'crocodiles'
ees	ees-o ~ ees-yal ~ ees-o-yal	'grasses'
miis	miis-o ~ miis-yal ~ miis-o-yal	'tables'
kuras	kuras-o ~ kuras-yal ~ kuras-o-yal	'chairs'
hidik	hidiɣ-o ~ hidig-yal ~ hidiɣ-o-yal	'stars'
basal	basal-o ~ basal-yal ~ basal-o-yal	'onions'
af	af-o ~ af-yal ~ af-o-yal	'mouths'
kawaš	kawaš-o ~ kawaš-yal ~ kawaš-o-yal	'cabbages'

The consultant reports that there is no meaning difference among plurals formed in each of these three different ways. Although the forms with *-o* tend to be volunteered first (though this is not always the case), all three forms are judged by the consultant to sound equally good. The examples in (15) confirm that there is no difference in the function of the different types of plural nouns, since each can be a subject or object.

(15) a. **eey-o** usu dil-eena **yahas -o** usu aam-eena
dog-pl 3sgm kill-3pl.past crocodile-pl 3sgm eat -3pl.past
'dogs killed him' 'crocodiles ate him'

eey-yal usu dil-eena **yahas -yal** usu aam-eena
dog-pl 3sgm kill-3pl.past crocodile-pl 3sgm eat -3pl.past
'dogs killed him' 'crocodiles ate him'

eey-o-yal usu dil-eena **yahas -o-yal** usu aam-eena
dog-pl-pl 3sgm kill-3pl.past crocodile-pl-pl 3sgm eat -3pl.past
'dogs killed him' 'crocodiles ate him'

b. usu **eey-o** dil-i usu **yahas -o** aam-i
3sgm dog-pl kill-3sgm.past 3sgm crocodile-pl eat -3sgm.past
'he killed dogs' 'he ate crocodiles'

usu **eey-yal** dil-i usu **yahas -yal** aam-i
3sgm dog-pl kill-3sgm.past 3sgm crocodile-pl eat -3sgm.past
'he killed dogs' 'he ate crocodiles'

usu **eey-o-yal** dil-i usu **yahas -o -yal** aam-i
3sgm dog -pl-pl kill-3sgm.past 3sgm crocodile-pl-pl eat -3sgm.past
'he killed dogs' 'he ate crocodiles'

The existence of three different plurals for all consonant-final stems is unusual and also problematic for some ideas in morphology, e.g. the treatment of blocking. Any theory of morphology must account for how, e.g., lexicalized forms block the production of regular inflected forms. Often the notion of economy has been invoked, so that the form with the smallest number of morphemes is always selected to convey any given set of meanings. For example, in English, the already plural *sheep* prevents the morphology from producing **sheeps* because *sheep* already conveys the semantics of the noun plus the plural all in one morpheme, so using two morphemes (*sheep* + *s*) would be uneconomical in comparison, and this is therefore ruled out. If this economy principle were a real property of grammars, we would expect it to extend to cases where there is a choice between a form in which a morphological category is marked by a single affix vs. a form where the same category is multiply exponed. Although economy would allow for the optional use of one affix or another to mark a particular cate-

gory plural (e.g., in Maay, *-o* vs. *-yal*), it also predicts that that simple affixation should always win out over multiple exponence, so that multiply marked forms such as the Maay plurals in *-o-yal* should be blocked by the existence of forms in *-o* and forms in *-yal*.[6] To allow for *-o-yal* plurals, one could assume that the economy requirement is not universally obeyed but is rather a violable constraint in the Optimality Theory sense. However, this would significantly weaken the economy concept, which has been invoked as an inviolable filter on surface forms in the analyses of many different languages. The problem of multiple plural marking therefore warrants further study.

It should be noted that there is no evidence in LJM for declension classes, unlike in some dialects of Somali (see e.g. Hyman 1981, Saeed 1987, Lecarme 2002). In LJM, the only division in nouns with respect to plural marking is between consonant- vs. vowel-final stems, and all nouns not following this pattern appear to be irregular rather than forming any additional classes. Nouns that in other dialects have plural forms other than *-o* or *-yal* do take these regular suffixes in LJM. For example, in the Somali dialect described by Lecarme, the noun *ey* 'dog' takes a 'prosodic plural', meaning that the plural is marked by a tone shift, while the noun *af* 'mouth' takes an 'internal *-a-* plural', which is a suffixed partial reduplicant with a fixed /a/ in place of the stem vowel (2002: 116-117). In LJM, both of these nouns take regular plural marking: *eey-o* ~ *eey-yal* ~ *eey-o-yal* 'dogs'; *af-o* ~ *af-yal* ~ *af-o-yal* 'mouths'.

Another interesting fact about plurals in LJM is that adjectives can optionally exhibit plural marking in a complex noun phrase. There are a variety of ways in which this can be manifested, as seen in the examples below.

---

[6] As discussed below, there is some evidence that while *-o* is a suffix, *-yal* is a clitic. One might therefore argue that the multiple plural marking is not problematic because it involves marking by two different types of morphemes rather than by two suffixes. However, blocking does not seem to differentiate between affixes and clitics. For example, in English, the possessive *-'s* has been analyzed as a clitic while the plural *-s* is a suffix. But forms like **my's* are blocked by the existence of lexical (monomorphemic) possessives like *mine* in just the same way that the plural form **womans* is blocked by *women*. Therefore, it is not clear that invoking the difference between affixes and clitics will solve the problem of multiple plural marking here.

(16) a. *Mass noun/ inherent plural with unmarked adjective*
moos ǰaale 'yellow bananas'
banana(s) yellow

b. *Mass noun/ inherent plural with reduplicated adjective*
det fa-fas 'beautiful people'
people pl-beautiful

c. *Mass noun/ inherent plural with adjective ending in* -yal
baraɗa kulel-yal 'hot potatoes'
potato(es) hot-pl

d. *Noun ending in* -o *with unmarked adjective*
geeð-o aɣar 'green trees'
tree-pl green

e. *Noun ending in* -o *with reduplicated adjective*
geeð-o ɗe-ɗeer 'tall trees'
tree-pl pl-tall

f. *Noun ending in* -o *with adjective ending in* -yal
geeð-o aɣar-yal 'green trees'
tree-pl green-pl

g. *Noun ending in* -yal *with unmarked adjective*
megel-yal ɗeer 'tall men'
man-pl tall

h. *Noun ending in* -yal *with reduplicated adjective*
megel-yal ɗe-ɗeer 'tall men'
man-pl pl-tall

i. *Noun ending in* -o-yal *with unmarked adjective*
geeð-o-yal aɣar 'green trees'
tree-pl-pl green

j. *Noun ending in* -o-yal *with reduplicated adjective*
geeð-o-yal mo-mooŋ 'big trees'
tree-pl-pl pl-big

We have already seen that (consonant-final) nouns can be pluralized by using either *-o* or *-yal*, or a combination of both, and in addition there are some mass nouns and inherent plurals that do not need an affix to convey plural meaning. Adjectives that modify a plural noun do not have to have plural marking, but when they do, they can either undergo prefixing reduplication or they can take *-yal* (this suggests that *-yal* may be better analyzed as a clitic rather than a suffix since it does not have to occur immediately next to the noun; *-o*, on the other

hand, must always occur next to the noun). The combination of four types of plural nouns (mass nouns/ inherent plurals, *-o*, *-yal*, and *-o-yal*) with three types of adjectives that can modify them (no marking, reduplication, and *-yal*) should yield twelve possibilities for plural noun phrases with a noun + adjective. However, as seen above in examples (16a-j), only ten of these possibilities are attested. The two unattested possibilities are a noun with *-yal* followed by an adjective with *-yal*, and a noun with *-o-yal* followed by an adjective with *-yal*. Both can be ruled out by a restriction that the same plural marking cannot be used more than once in the same noun phrase.

My analysis of this situation is that the plural marking on adjectives is not agreement *per se*, but is rather overt plural marking just like plural marking on nouns. There are three ways that the morphology can mark plural in a noun phrase: the suffix *-o*, the clitic *-yal*, and reduplication. At least one of these must be used within the noun phrase to make it plural (unless the noun is already inherently plural). All of these can co-occur, but each can only be used once within a single noun phrase. The suffix *-o* is restricted to occurring with noun roots, and reduplication can apply only to adjectives; *-yal*, on the other hand, can occur next to either a noun or a noun phrase. The interaction of these requirements yields the observed patterns of plural noun phrases with a noun + adjective.

3.2 Gender. All nouns in LJM have either masculine or feminine gender. In the noun phrase, gender agreement is manifested in the definite marker, demonstratives, and possessive markers. Examples of these will be given in sections 3.3, 3.4, and 3.5, respectively. In each case, where the masculine form of the marker has initial /k/, the feminine form of the marker has initial /t/. The pattern is consistent for all of the grammatical markers mentioned above with two exceptions: the 3sg masculine possessor of a masculine noun has the form *-'ye* rather than the form **-kie* which would be expected since its feminine-agreeing counterpart is *-tie*, and similarly, the 3pl masculine-agreeing possessor has the form *-'yo* rather than the expected *-kio*.[7]

Though there are two genders in singular forms of nouns, all nouns trigger

[7] But note that these could derive historically from **-kie* and **-kio* via a series of sound changes **ki* > **ʃ* > *'y*, where *k* and *i* merge into a palatal *ʃ* which later changes to *'y*. The change from *ʃ* to *'y* is plausible since we know that the other two stop sounds of Standard Somali that are absent from the inventory of LJM (namely, *ɗ* and *q*) correspond to implosives (*ɗ* and *ɠ*, respectively) in LJM. Further evidence in favor of **-kie* and **-kio* as the respective sources of LJM *-'ye* and *-'yo* is that the corresponding Standard Somali forms do begin with [k]: *-kiisa* and *-kooda* (Saeed 1999: 115).

masculine gender agreement when they are pluralized. This is true regardless of the way in which the plural is formed (for consonant-final stems that have three different plural forms). As seen in the examples below, nouns that take feminine agreement when in the singular form take masculine agreement in the plural. The feminine-agreeing suffixes all have allomorphs beginning in [t], [ð], and ∅, distributed as follows: [ð] occurs when the stem ends in a vowel (or *ʔ*, though there is only one example of this, which could possibly be an exception), ∅ occurs when the stem ends in *t*/*d* or *l*, and [t] occurs elsewhere. Similarly, the masculine-agreeing suffixes begin with [ɣ] when the stem ends in a vowel, ∅ when the stem ends in *k*/*g*, and [k] elsewhere.

(17)	ǰeer-tey	'my hippo'	ǰeer-o-ɣey	'my hippos'[8]
	walaaš-ey	'my sister'[9]	walaal-o-ɣey	'my sisters/brothers'
	gewer-tey	'my daughter'	gewer-o-ɣey	'my daughter'
	mindi-ðey	'my knife'	mindi-yal-key	'my knives'
	gaʔan-tey	'my hand'	gaʔamo-yal-key	'my hands'
	far-tey	'my finger'	far-o-ɣey	'my fingers'

As seen below, there is no change to masculine nouns in the plural; they retain masculine agreement.

(18)	awo-ɣey	'my grandfather'	awo-yal-key	'my grandfathers'
	walaal-key	'my brother'	walaal-o-ɣey	'my sisters/brothers'
	igar-key	'my son'	igar-o-ɣey	'my sons'
	bakeeri-ɣey	'my cup'	bakeeri-yal-key	'my cups'
	bakaile-ɣey	'my rabbit'	bakaile-yal-key	'my rabbits'
	aǰir-key	'my thigh'	aǰir-o-ɣey	'my thighs'

[8] For this and all other forms in my data (with no exceptions), the possessive suffix can be added to a plural noun made in any of the three ways that are possible for consonant-final stems. For example, in addition to *jeer-o-ɣey*, 'my hippos' can also be *jeer-yal-key* or *jeer-o-yal-key*. Here I will give only the possessed plurals formed with *-o* for consonant-final stems.

[9] The form *walaaš-ey* comes from /walaal-tey/; /l+t/ fuses into [š] here as described above in section 2.4. We know that this form has feminine agreement in the 1sg possessive suffix (i.e., that the suffix is /-tey/ rather than the masculine /-key/) because the initial /k/ of the masculine form would not fuse with stem-final /l/. This is apparent in the word 'brother', which differs from 'sister' only in its gender; the form meaning 'my brother' is *walaal-key*.

A point of interest here is that in at least one case, the neutralization of the gender distinction in the plural leads to ambiguity. In the singular, the words meaning 'brother' and 'sister' are homophonous (*walaal*) and are distinguished only via agreement, as in *walaaš-ey* 'my sister' vs. *walaal-key* 'my brother' (see footnote 3). In the plural, since both take masculine agreement, the form *walaal-o-ɣey* has two possible interpretations: it can mean 'my sisters' or 'my brothers'.

The relationship between gender and number in LJM is different not only from Standard Somali but also from the more closely related Central Somali. Standard Somali exhibits a phenomenon known as 'gender polarity' in which 'most nouns reverse their gender when they become plural' (Saeed 1987: 115). This applies to both masculine and feminine nouns and is true of plurals formed with *-o* or with *-yal*, so the identity of the plural suffix does not condition polarity. (Unlike in LJM, the choice of plural suffixes in Standard Somali is determined by the noun's 'declension class'.) In Central Somali (as in Standard Somali), the choice between *-o* and *-yal* is determined by declension class, but in Central Somali, only plurals with *-o* exhibit true polarity. Plurals with *-yal* exhibit a different pattern in which all nouns are masculine in the plural. Thus, there is gender reversal when the singular noun is feminine since it becomes masculine in the plural, but there is no change when a singular masculine noun is pluralized. LJM exhibits a third variation on the gender polarity theme: as demonstrated above, all plurals are masculine regardless of whether the plural is formed with *-o* or *-yal*. There is no evidence for declension classes in LJM; as has been shown above, all vowel-final stems take *-o* plural marking regardless of their gender, while all consonant-final stems can take *-o*, *-yal*, or *-o-yal* regardless of their gender. In the unidentified Somali dialect discussed by Lecarme (2002), there is yet a fourth variation: plurals in *-yal* exhibit true polarity, while plurals in *-o* are all masculine (Lecarme 2002: 118-119) (i.e., the reverse of the Central Somali pattern).[10] It would seem that LJM is the most innovative of the dialects, since the existence of gender polarity in other Cushitic languages (e.g. Oromo (Andrzejewski 1960) and Rendille (Oomen 1981)) suggests that it is an old feature. If gender polarity was a feature of the common ancestral language of Somali and Maay, then Central Somali has undergone a change in the *-yal* plurals, while the dialect described by Lecarme

[10] The situation is more complicated in this dialect than I have represented it, in that there are more than two ways to form plurals. The reader is referred to Lecarme (2002) for more details as well as a theoretical analysis of gender polarity in the Distributed Morphology framework.

(2002) has undergone a change in the *-o* plurals, and LJM exhibits the same change in both types of plurals.

3.3 Definiteness. Whereas Central and Standard Somali have remote (past or physically far away) vs. non-remote (present or future) definite marking on nouns (Saeed 1982, 1987), LJM has only one set of definite markers, *-ki/-ti.* These are cognates with the Standard Somali and Central Somali remote/past definite markers. They exhibit gender agreement with nouns, as seen below.

(19)	eey-ki	'the dog (generic)'	eey-ti	'the female dog'
	diβi-γi	'the bull'	saʔ-ði	'the cow (female)'[11]
	inaŋ-ki	'the boy'	gewer-ti	'the girl'
	niŋ-ki	'the man'	aano-ði	'the milk'
	miis-ki	'the table'	istaraša-ði	'the napkin'
	geet-ki	'the tree'	yahas-ti	'the crocodile'
	ɗeǰi-γi	'the snake'	saan-ti	'the foot'
	moos-ki	'the banana'	suuk-ti	'the market'
	barit-ki	'the rice'	baaka-ði	'the box'
	buug-i	'the book'	tubo-ði	'the jar'

As mentioned above, all nouns trigger masculine agreement in the plural. The definite marker obeys this generalization: as demonstrated below, the definite marker /-ki/ is used for plural nouns regardless of whether the singular form is masculine (20a) or feminine (20b).

(20)	a.	moos-ki	'the banana'	moos-o-γi	'the bananas'
		inaŋ-ki	'the boy'	ɗalo-γi	'the boys'
	b.	far-ti	'the finger'	far-o-γi	'the fingers'
		okun-ti	'the egg'	okum-o-γi	'the eggs'
		galanša-ði	'the fem. elephant'	galanša-yal-ki	'the fem. elephants'

[11] This is the one exception in my data to the generalization that the voiced fricatives occur only intervocalically. The noun in isolation does have a final glottal stop ([saʔ] 'cow'), so there is no evidence for an underlying root-final vowel. Perhaps glottal stops are transparent to the intervocalic lenition process described in section 2.4. Word-final glottal stops are very rare, so it has not yet been possible to test the hypothesis that glottal stops are transparent to lenition.

Though the notation in the examples above implies that the definite markers are suffixes, there is evidence to suggest that they are instead clitics. The evidence for this is that in a noun phrase consisting of a noun + adjective, the definite marker occurs after the adjective, as seen in the examples below.

(21) geet ɗeer-ki 'the tall tree'
baaka geðud-i 'the red box'

Note that these are not analyzable as agreement markers, since only one instance of the definite marker is permitted for a given noun phrase (thus, the forms **geet-ki ɗeer-ki* and **baaka-ði geðud-i* are ungrammatical).

3.4 Demonstratives. There are three demonstratives in LJM, corresponding to 'this', 'that', and 'which...?'. Each exhibits the same *t-* vs. *k-* gender agreement pattern as in the definite markers described above. Examples of masculine-agreeing demonstrative markers are shown below.

(22)	eey-kaŋ	'this dog'	buug-aŋ	'this book'
	eey-kas	'that dog'	buug-as	'that book'
	eey-kew	'which dog'	buug-ew	'which book'
	geet-kaŋ	'this tree'	megel-kaŋ	'this man'
	geet-kas	'that tree'	megel-kas	'that man'
	geet-kew	'which tree'	megel-kew	'which man'

Examples of feminine-agreeing demonstrative markers are shown below with feminine nouns in the singular form.

(23)	yahas-taŋ	'this crocodile'	istaraša-ðaŋ	'this napkin'
	yahas-tas	'that crocodile'	istaraša-ðas	'that napkin'
	yahas-tew	'which crocodile'	istaraša-ðew	'which napkin'
	mukulal-aŋ	'this cat'	bilaan-taŋ	'this woman'
	mukulal-as	'that cat'	bilaan-tas	'that woman'
	mukulal-ew	'which cat'	bilaan-tew	'which woman'

Like the definite markers, the demonstrative markers always take the masculine form when the noun is plural, even when the singular form of the noun is feminine, as in the examples below.

(24)	yahas-o-ɣaŋ	'these crocodiles'	istaraša-yal-kaŋ	'these napkins'
	yahas-o-ɣas	'those crocodiles'	istaraša-yal-kas	'those napkins'
	yahas-o-ɣew	'which crocodiles'	istaraša-yal-kew	'which napkins'
	mukulal-o-ɣaŋ	'these cats'	bilaam-o-ɣaŋ	'these women'
	mukulal-o-ɣas	'those cats'	bilaam-o-ɣas	'those women'
	mukulal-o-ɣew	'which cats'	bilaam-o-ɣew	'which women'

Also like the definite markers, demonstratives in LJM appear to be clitics since in complex noun phrases they occur at the end of the phrase rather than immediately after the noun, as in the examples below.

(25)	geet gab-kaŋ	'this short tree'
	geet ɗeer-kaŋ	'this tall tree'
	baaka geðud-as	'that red box'

However, as with the definite markers, there cannot be multiple instances of the demonstrative marker within the same noun phrase. Phrases such as ***geet-kaŋ gab-kaŋ* are ungrammatical, which shows that demonstrative marking on an adjective is not simply agreement with the noun.

3.5 Possessives. Possessive marking exhibits the same gender agreement pattern as the definite and demonstrative markers, including the pattern of all-masculine agreement in the plural forms discussed in section 3.2. Some examples of masculine possessed nouns are shown below. [12]

[12] Forms given here for 'her X' are in the regular masculine agreement form, but there is an interesting effect where (apparently) all masculine nouns can optionally take *-tie* instead of the expected *-'ye*. That is, when the 3sg possessor is feminine, the feminine-agreeing suffix can optionally be used with a masculine noun. The effect is only found in the 3sg, and it does not apply in the opposite direction (i.e., the masculine-agreeing 3sg masculine suffix *-'ye* cannot be used for 'his X' where X is a feminine noun; instead, the feminine-agreeing *-tis* must be used).

(26)

walaal-key	'my brother'	walaal-kaynu	'our brother'
walaal-ka	'your brother'	walaal-kiŋ	'your pl. brother'
walaal-'ye	'his/her brother'	walaal-'yo	'their brother'
igar-key	'my son'	igar-kaynu	'our son'
igar-ka	'your son'	igar-kiŋ	'your pl. son'
igar-'ye	'his/her son'	igar-'yo	'their son'
aw-key	'my father'	aw-kaynu	'our father'
aw-ka	'your father'	aw-kiŋ	'your pl. father'
aw-'ye	'his/her father'	aw-'yo	'their father'
bakeeri-ɣey	'my cup'	bakeeri-ɣaynu	'our cup'
bakeeri-ɣa	'your cup'	bakeeri-ɣiŋ	'your pl. cup'
bakeeri-'ye	'his/her cup'	bakeeri-'yo	'their cup'
eey-key	'my dog'	eey-kayno	'our dog'
eey-ka	'your dog'	eey-kiŋ	'your pl. dog'
eey-'ye	'his/her dog'	eey-'yo	'their dog'
buug-ey	'my book'	buug-ayno	'our book'
buug-a	'your book'	buug-iŋ	'your pl. book'
buuk-'ye	'his/her book'	buuk-'yo	'their book'

Feminine possessed (singular) nouns are shown below. Note that, unlike masculine nouns, feminine nouns take different forms depending on whether the 3sg possessor is masculine or feminine.

(27)

gewer-tey	'my daughter'	gewer-tayno	'our daughter'
gewer-ta	'your daughter'	gewer-tiŋ	'your pl. daughter'
gewer-tis	'his daughter'	gewer-tio	'their daughter'
gewer-tie	'her daughter'		
mindi-ðey	'my knife'	mindi-ðayno	'our knife'
mindi-ða	'your knife'	mindi-ðiŋ	'your pl. knife'
mindi-ðis	'his knife'	mindi-ðio	'their knife'
mindi-ðie	'her knife'		

saʔ-ðey	'my cow'	saʔ-ðayno	'our cow'
saʔ-ða	'your cow'	saʔ-ðiŋ	'your pl. cow'
saʔ-ðis	'his cow'	saʔ-ðio	'their cow'
saʔ-ðie	'her cow'		
hambal-ey	'my leaf'	hambal-ayno	'our leaf'
hambal-a	'your leaf'	hambal-iŋ	'your pl. leaf'
hambal-is	'his leaf'	hambal-io	'their leaf'
hambal-ie	'her leaf'		
istaraša-ðey	'my napkin'	istaraša-ðayno	'our napkin'
istaraša-ða	'your napkin'	istaraša-ðiŋ	'your pl. napkin'
istaraša-ðis	'his napkin'	istaraša-ðio	'their napkin'
istaraša-ðie	'her napkin'		
ǰeer-tey	'my hippo'	ǰeer-tayno	'our hippo'
ǰeer-ta	'your hippo'	ǰeer-tiŋ	'your pl. hippo'
ǰeer-tis	'his hippo'	ǰeer-tio	'their hippo'
ǰeer-tie	'her hippo'		

As mentioned in section 3.2, feminine nouns take masculine agreement when pluralized. The nouns seen above are shown here in their plural possessed forms with masculine agreement.

(28)	gewer-o-ɣey	'my daughters'	gewer-o-ɣayno	'our daughters'
	gewer-o-ɣa	'your daughters'	gewer-o-ɣiŋ	'your pl. daughters'
	gewer-o-'ye	'his/her daughters'	gewer-o-'yo	'their daughters'
	mindi-yal-key	'my knives'	mindi-yal-kayno	'our knives'
	mindi-yal-ka	'your knives'	mindi-yal-kiŋ	'your pl. knives'
	mindi-yal-kis	'his/her knives'	mindi-yal-'yo	'their knives'
	saʔ-o-ɣey	'my cows'	saʔ-o-ɣayno	'our cows'
	saʔ-o-ɣa	'your cows'	saʔ-o-ɣiŋ	'your pl. cows'
	saʔ-o-'ye	'his/her cows'	saʔ-o-'yo	'their cows'
	hambal-o-ɣey	'my leaves'	hambal-o-ɣayno	'our leaves'
	hambal-o-ɣa	'your leaves'	hambal-o-ɣiŋ	'your pl. leaves'
	hambal-o-'ye	'his/her leaves'	hambal-o-'yo	'their leaves'

Like definite markers and demonstratives, the possessive markers occur at the end of the noun phrase when the noun is followed by an adjective. This is seen in the examples below.

(29)	saʔ wiin-tey	'my big cow'
	geet ɗeer-key	'my tall tree'
	mindi yariis-tey	'my small knife'
	baaka geðud-ey	'my red box'

4. Verb Morphology.

4.1 Derivational Morphology. This study did not reveal a robust system of verbal derivational morphology. The verbal extensions documented by Saeed (1982) are difficult to elicit from the LJM consultant and may be lexicalized in the forms that are attested. The two attested extensions, Causative and Reflexive, are discussed below.

A causative suffix *-i* is exhibited with one verb, *warab* 'drink'. When the suffix is added, the meaning of the verb is 'water' (i.e., cause to drink). No other instances of this suffix are documented.

(30)	ani		bio	waraβ-i	'I drank water'
	1sg		water	drink -1sg.past	
	mukulal-i		bio	warap-ti	'the cat drank water'
	cat	-def	water	drink -3sg.fem.past	
	mukulal-i		bio	waraβ-i -i	'I watered the cat'
	cat	-def	water	drink -caus-1sg.past	

A second verbal extension in LJM is the reflexive. Like the causative, this suffix is apparently not very productive; it was found with only three verbs in this study, and in one case the meaning of the suffix is not transparent, suggesting that the combination of the verb with the reflexive suffix is lexicalized, at least for that particular verb. Examples of the reflexive suffix are shown below.

(31) a. *Reflexive forms with transparent semantics*

ani	bar -oy -e	'I am teaching'
1sg	teach-pres-1sg	
ani	bar -ið -oy -e	'I am learning'
1sg	teach-refl-pres-1sg	
ani	miniŋ dĩs -oy -e	'I am building a house'
1sg	house build-pres-1sg	
ani	miniŋ dĩs -ið -oy -e	'I am building myself a house'
1sg	house build-refl-pres-1sg	

b. *Reflexive form with non-transparent semantics*

ani	gað-oy -e	'I am selling'
1sg	sell -pres-1sg	
ani	gað-ið -oy -e	'I am buying'
1sg	sell -refl-pres-1sg	

4.2 Person marking and agreement. Verbs are marked with suffixes that indicate person and number (and, for 3sg, masculine or feminine gender). These can co-occur with an independent proclitic pronoun, or the independent pronoun can be omitted (this is, in fact, the default case; the independent pronoun is used only to emphasize the subject). For each tense/aspect/mood (to be discussed in the sections to follow), each person/number/gender is marked by a separate suffix, except that the 1sg verb forms are always identical to the 3sg masculine forms, and 2sg forms are always identical to 3sg feminine forms. This is true in other dialects as well; for example, in Central Somali, 1sg and 3sgm are identical, and 2sg and 3sgf are identical, except in a small number of irregular verbs (Saeed 1982: 23-28).

Feminine gender is indicated on the verb only when the subject is 3sg. Tense, aspect, and mood suffixes are *t*-initial when the subject is feminine. There is likely a connection between this *-t* and the *t* that is observed at the beginning of feminine-agreeing noun markers, but this does not necessarily demonstrate the existence of a separate /-t/ feminine suffix since verbs with 3sg feminine subjects lack [t] in some contexts (e.g., the simple future forms to be described in section 4.3). Also, verb forms with 2sg and 2spl subjects also have *t*-initial verb suffixes

regardless of the gender of the subject, so if there is a feminine suffix /-t/, there would have to be a homophonous second person suffix /-t/ despite the fact that first person and third person are not marked.

4.3 Tense. Six tenses are distinguished in LJM: past, two present tenses, and three different futures. The past, both present forms, and the simple future consist of individual verb stems inflected with a single tense suffix, while the two other future tenses involve the use of what are analyzed as auxiliary verbs.

The set of subject markers indicating past tense (Simple Past) are given below.

(32)	-i	1sg	-ni	1pl
	-ti	2sg	-teena	2pl
	-i	3sg masc	-eena	3pl
	-ti	3sg fem		

Some examples of the use of these suffixes are given below.

(33)	ani	roor-i	'I ran'	unu	roor-ni	'we ran'
	aði	roor-ti	'you ran'	isiŋ	roor-teena	'you pl. ran'
	usu	roor-i	'he ran'	iyo	roor-eena	'they ran'
	ii	roor-ti	'she ran'			
	ani	šaɠeey-i	'I worked'	unu	šaɠeey-ni	'we worked'
	aði	šaɠeey-ti	'you worked'	isiŋ	šaɠeey-teena	'you pl. worked'
	usu	šaɠeey-i	'he worked'	iyo	šaɠeey-eena	'they worked'
	ii	šaɠeey-ti	'she worked'			
	ani	ɗow-i	'I hit'	unu	ɗow-ni	'we hit'
	aði	ɗow-ti	'you hit'	isiŋ	ɗow-teena	'you pl. hit'
	usu	ɗow-i	'he hit'	iyo	ɗow-eena	'they hit'
	ii	ɗow-ti	'she hit'			
	ani	aam-i	'I ate'	unu	aaŋ-ni	'we ate'
	aði	aan-ti	'you ate'	isiŋ	aan-teena	'you pl. ate'
	usu	aam-i	'he ate'	iyo	aam-eena	'they ate'
	ii	aan-ti	'she ate'			

The category that I will refer to as Simple Present A is used to form the present tense of active verbs. It is apparently not very commonly used, since the consultant first volunteers a different form (the Present Progressive) when prompted to give a present form, even when the English prompt is stated in a generic future form rather than progressive (e.g., 'I eat' instead of 'I am eating'). The Simple Present A was first found on auxiliary verbs in constructions such as the Generic Future and Future Potential, and was never elicited with other, lexical verbs. The set of suffixes that mark Simple Present A is given below.

(34)	-e	1sg	-ne	1pl
	-te	2sg	-teena	2pl
	-e	3sg masc	-eena	3pl
	-te	3sg fem		

Some examples of Simple Present A verbs are shown below.

(35)	ani	raβ-e	'I will'	unu	rab-ne	'we will'
	aði	rap-te	'you will'	isiŋ	rap-teena	'you pl. will'
	usu	raβ-e	'he will'	iyo	raβ-eena	'they will'
	ii	rap-te	'she will'			
	ani	muð-e	'I think'	(no other simple present forms		
	usu	muð-e	'he thinks'	were accepted for this verb)		

A different simple present form is used with stative verbs. I refer to this as Simple Present B. The subject agreement suffixes used in Simple Present B are shown below.

(36)	-ya	1sg	-na	1pl
	-ta	2sg	-tena	2pl
	-ya	3sg masc	-yena	3pl
	-ta	3sg fem		

Some examples of stative verbs in Simple Present B are given below.

(37)

ani	farahsiñ-ya	'I am happy'	unu	farahsiŋ-na	'we are happy'
aði	farahsin-ta	'you are happy'	isiŋ	farahsin-tena	'you are happy'
usu	farahsiñ-ya	'he is happy'	iyo	farahsiñ-yena	'they are happy'
ii	farahsin-ta	'she is happy'			
ani	ɗeer-ya	'I am tall'	unu	ɗeer-na	'we are tall'
aði	ɗeer-ta	'you are tall'	isiŋ	ɗeer-tena	'you pl. are tall'
usu	ɗeer-ya	'he is tall'	iyo	ɗeer-yena	'they are tall'
ii	ɗeer-ta	'she is tall'			
ani	buuriñ-ya	'I am fat'	unu	buuriŋ-na	'we are fat'
aði	buurin-ta	'you are fat'	isiŋ	buurin-tena	'you pl. are fat'
usu	buuriñ-ya	'he is fat'	iyo	buuriñ-yena	'they are fat'
ii	buurin-ta	'she is fat'			
ani	mooñ-ya	'I am big'	unu	mooŋ-na	'we are big'
aði	moon-ta	'you are big'	isiŋ	moon-tena	'you pl. are big'
usu	mooñ-ya	'he is big'	iyo	mooñ-yena	'they are big'
ii	moon-ta	'she is big'			

Another tense, the Generic Future, indicates general future action with no specific timeframe. The Generic Future verb consists of an uninflected form of the main verb followed by a form of the auxiliary verb /don/[13] with a subject agreement suffix taken from the set below. Note that this set of suffixes is very similar to those used with the Simple Present B (stative) forms discussed above, but the suffixes are not identical.

[13] The underlying form of this verb, with respect to the final nasal, is not fully determined by the data since it occurs only in pre-consonantal environments. As was seen above, the most common final nasal in nouns is /m/, so this could be extended to argue in favor of /dom/ rather than /don/. However, we have no clear evidence for a similar pattern in verbs (only two nasal-final lexical verbs were observed, and although both happen to end in /m/, this sample size seems too small to generalize). Furthermore, the verb never surfaces with the form [dom], whereas it does surface as [don] when it occurs with *t*-initial suffixes. Although this fact is consistent with both /dom/ and /don/, I will assume /don/ for the sake of minimizing abstractness.

(38)	-ya	1sg	-ne	1pl
	-te	2sg	-teena	2pl
	-ya	3sg masc	-yeena	3pl
	-te	3sg fem		

Examples of Generic Future forms are given below.

(39)	ani	roor	doñ-ya	'I will run'
	aði	roor	don-te	'you will run'
	usu	roor	doñ-ya	'he will run'
	ii	roor	don-te	'she will run'
	unu	roor	doŋ-ne	'we will run'
	isiŋ	roor	don-teena	'you pl. will run'
	iyo	roor	doñ-yeena	'they will run'
	ani	nook	doñ-ya	'I will be tired'
	aði	nook	don-te	'you will be tired'
	usu	nook	doñ-ya	'he will be tired'
	ii	nook	don-te	'she will be tired'
	unu	nook	doŋ-ne	'we will be tired'
	isiŋ	nook	don-teena	'you pl. will be tired'
	iyo	nook	doñ-yeena	'they will be tired'
	ani	šaɠeey	doñ-ya	'I will work'
	aði	šaɠeey	don-te	'you will work'
	usu	šaɠeey	doñ-ya	'he will work'
	ii	šaɠeey	don-te	'she will work'
	unu	šaɠeey	doŋ-ne	'we will work'
	isiŋ	šaɠeey	don-teena	'you pl. will work'
	iyo	šaɠeey	doñ-yeena	'they will work'
	ani	hees	doñ-ya	'I will sing'
	aði	hees	don-te	'you will sing'
	usu	hees	doñ-ya	'he will sing'
	ii	hees	don-te	'she will sing'
	unu	hees	doŋ-ne	'we will sing'
	isiŋ	hees	don-teena	'you pl. will sing'
	iyo	hees	doñ-yeena	'they will sing'

The Immediate Future is a simple future tense that indicates action that will take place very soon, within even a few seconds. The meaning seems to correspond to that of the English construction 'about to do X'. Immediate Future forms consist of the verb followed by a subject agreement suffix from the set shown below.

(40)

-e	1sg	-ane	1pl
-ase	2sg	-aseena	2pl
-e	3sg masc	-ayeena	3pl
-ase	3sg fem		

Some examples of Immediate Future verbs are shown below.

(41)

ani	roor-e	'I will run'	unu	roor-ane	'we will run'
aði	roor-ase	'you will run'	isiŋ	roor-aseena	'you pl. will run'
usu	roor-e	'he will run'	iyo	roor-ayeena	'they will run'
ii	roor-ase	'she will run'			
ani	kooy-e	'I will come'	unu	kooy-ane	'we will come'
aði	kooy-ase	'you will come'	isiŋ	kooy-aseena	'you pl. will come'
usu	kooy-e	'he will come'	iyo	kooy-ayeena	'they will come'
ii	kooy-ase	'she will come'			
ani	gor-e	'I will write'	unu	gor-ane	'we will write'
aði	gor-ase	'you will write'	isiŋ	gor-aseena	'you pl. will write'
usu	gor-e	'he will write'	iyo	gor-ayeena	'they will write'
ii	gor-ase	'she will write'			
ani	nooɣ-e	'I will be tired'	unu	nooɣ-ane	'we will be tired'
aði	nooɣ-ase	'you will be tired'	isiŋ	nooɣ-aseena	'you pl. will be tired'
usu	nooɣ-e	'he will be tired'	iyo	nooɣ-ayeena	'they will be tired'
ii	nooɣ-ase	'she will be tired'			

The Near Future form of a verb indicates action that will happen shortly, perhaps within the next 15 minutes to an hour, according to the consultant. Near Future forms consist of the main verb in its Generic Potential form (the Generic

Potential will be described in section 4.4) followed by the Simple Present A form of the auxiliary verb /rab/. Examples are shown below.

(42)				
	ani	roor-o	raβ-e	'I will run'
	aði	roor-to	rap-te	'you will run'
	usu	roor-o	raβ-e	'he will run'
	ii	roor-to	rap-te	'she will run'
	unu	roor-no	rab-ne	'we will run'
	isiŋ	roor-tona	rap-teena	'you pl. will run'
	iyo	roor-ona	raβ-eena	'they will run'
	ani	umboh-o	raβ-e	'I will go'
	aði	umboh-to	rap-te	'you will go'
	usu	umboh-o	raβ-e	'he will go'
	ii	umboh-to	rap-te	'she will go'
	unu	umbah-no	rab-ne	'we will go'
	isiŋ	umbah-tona	rap-teena	'you pl. will go'
	iyo	umbah-ona	raβ-eena	'they will go'
	ani	šaɠeey-o	raβ-e	'I will work'
	aði	šaɠeey-to	rap-te	'you will work'
	usu	šaɠeey-o	raβ-e	'he will work'
	ii	šaɠeey-to	rap-te	'she will work'
	unu	šaɠeey-no	rab-ne	'we will work'
	isiŋ	šaɠeey-tona	rap-teena	'you pl. will work'
	iyo	šaɠeey-ona	raβ-eena	'they will work'
	ani	ɠor-o	raβ-e	'I will write'
	aði	ɠor-to	rap-te	'you will write'
	usu	ɠor-o	raβ-e	'he will write'
	ii	ɠor-to	rap-te	'she will write'
	unu	ɠor-no	rab-ne	'we will write'
	isiŋ	ɠor-tona	rap-teena	'you pl. will write'
	iyo	ɠor-ona	raβ-eena	'they will write'

Two primary moods are distinguished aside from the unmarked, default (indicative) mood: Imperative and Potential. Each of these moods is discussed below.

Imperative is unmarked when the subject is singular, and is marked by *-a* when the subject is plural, as seen in the examples below.

(43)	aði roor	'run!'	aaŋ	'eat!'
	isiŋ roor-a	'run! pl.'	aam-a	'eat! pl.'
	bah	'go!'	ɠor	'write!'
	bah-a	'go! pl.'	ɠor-a	'write! pl.'

Potential mood is generally used to indicate actions that may be taking place in the present or future: 'maybe X' or 'I think that X' or actions that did not take place in the past (past conditional forms of the type 'I would have X, but...'). Potential mood is marked by *ina*, which occurs before the verb and is indicated as a prefix here but may be a complementizer that introduces clauses containing potential verbs. There are two types of Potential verbs: Future Potential and Generic Potential.

Future Potential verbs consist of a main verb preceded by *ina* and inflected with a suffix from the set in (44), followed by *muð-e*, which is the 1sg Simple Present A form of the verb meaning 'to think'.

(44)	-aw	1sg	-aano	1pl
	-aso	2sg	-aasona	2pl
	-aw	3sg masc	-aayona	3pl
	-aso	3sg fem		

Examples of Future Potential verbs are shown here. Note that these forms are not complete utterances: in actual use, each of these forms would be followed by *muð-e*.

(45)	ani	ina-[ʔ]aam-aw	'I might eat'
	aði	ina-[ʔ]aam-aso	'you might eat'
	usu	ina-[ʔ]aam-aw	'he might eat'
	ii	ina-[ʔ]aam-aso	'she might eat'
	unu	ina-[ʔ]aam-aano	'we might eat'
	isiŋ	ina-[ʔ]aam-aasoona	'you pl. might eat'
	iyo	ina-[ʔ]aam-aayoona	'they might eat'

ani	ina-hees-aw	'I might sing'
aði	ina-hees-aso	'you might sing'
usu	ina-hees-aw	'he might sing'
ii	ina-hees-aso	'she might sing'
unu	ina-hees-aano	'we might sing'
isiŋ	ina-hees-aasoona	'you pl. might sing'
iyo	ina-hees-aayoona	'they might sing'

ani	ina-kooy-aw	'I might come'
aði	ina-kooy-aso	'you might come'
usu	ina-kooy-aw	'he might come'
ii	ina-kooy-aso	'she might come'
unu	ina-kooy-aano	'we might come'
isiŋ	ina-kooy-aasoona	'you pl. might come'
iyo	ina-kooy-aayoona	'they might come'

ani	ina-ɗam-aw	'I might drink'
aði	ina-ɗam-aso	'you might drink'
usu	ina-ɗam-aw	'he might drink'
ii	ina-ɗam-aso	'she might drink'
unu	ina-ɗam-aano	'we might drink'
isiŋ	ina-ɗam-aasoona	'you pl. might drink'
iyo	ina-ɗam-aayoona	'they might drink'

Generic Potential forms indicate action that may be taking place currently or may have happened in the past. Present forms consist of the main verb preceded by *ina*, inflected using one of the suffixes in (46), and obligatorily followed by *lakayaawe* 'maybe'.

(46)

-o	1sg	-no	1pl
-to	2sg	-tona	2pl
-o	3sg masc	-ona	3pl
-to	3sg fem		

Some examples of present tense Generic Potential forms are shown below. Note that in order for these forms to become coherent utterances, they should each be followed by *lakayaawe*.

(47)

ani	ina-kooy-o	'I might be coming'
aði	ina-kooy-to	'you might be coming'
usu	ina-kooy-o	'he might be coming'
ii	ina-kooy-to	'she might be coming'
unu	ina-kooy-no	'we might be coming'
isiŋ	ina-kooy-tona	'you pl. might be coming'
iyo	ina-kooy-ona	'they might be coming'
ani	ina-hees-o	'I might be singing'
aði	ina-hees-to	'you might be singing'
usu	ina-hees-o	'he might be singing'
ii	ina-hees-to	'she might be singing'
unu	ina-hees-no	'we might be singing'
isiŋ	ina-hees-tona	'you pl. might be singing'
iyo	ina-hees-ona	'they might be singing'

Another context for the use of the Generic Potential is in conditional forms, which are apparently only used in the past tense. A past conditional form consists of the Generic Potential form of the main verb (without *ina*) followed by the Past Progressive form (see section 4.5) of /rap/, which is the same auxiliary verb stem that is used in the Near Future tense described in section 4.3. Examples are shown below.

(48)

ani	roor-o	raβ-ay-i	'I would have run'
aði	roor-to	raβ-ay-ti	'you would have run'
usu	roor-o	raβ-ay-i	'he would have run'
ii	roor-to	raβ-ay-ti	'she would have run'
unu	roor-no	raβ-ay-ni	'we would have run'
isiŋ	roor-tona	raβ-ay-teena	'you pl. would have run'
iyo	roor-ona	raβ-ay-eena	'they would have run'
ani	umbah-o	raβ-ay-i	'I would have gone'
aði	umbah-to	raβ-ay-ti	'you would have run'
usu	umbah-o	raβ-ay-i	'he would have run'
ii	umbah-to	raβ-ay-ti	'she would have run'
unu	umbah-no	raβ-ay-ni	'we would have run'
isiŋ	umbah-tona	raβ-ay-teena	'you pl. would have run'
iyo	umbah-ona	raβ-ay-eena	'they would have run'

4.5 Aspect. Two aspectual categories are marked in LJM: Progressive (present and past), and Habitual (past only). These aspects are described below.

The Present Progressive aspect is marked with the suffix *-oy*. This suffix occurs before the subject agreement suffixes, which are taken from the set of Simple Present A suffixes discussed in section 4.3.

(49)

ani	roor-oy-e	'I am running'
aði	roor-oy-te	'you are running'
usu	roor-oy-e	'he is running'
ii	roor-oy-te	'she is running'
unu	roor-oy-ne	'we are running'
isiŋ	roor-oy-teena	'you pl. are running'
iyo	roor-oy-eena	'they are running'
ani	aam-oy-e	'I am eating'
aði	aam-oy-te	'you are eating'
usu	aam-oy-e	'he is eating'
ii	aam-oy-te	'she is eating'
unu	aam-oy-ne	'we are eating'
isiŋ	aam-oy-teena	'you pl. are eating'
iyo	aam-oy-eena	'they are eating'
ani	hundur-oy-e	'I am sleeping'
aði	hundur-oy-te	'you are sleeping'
usu	hundur-oy-e	'he is sleeping'
ii	hundur-oy-te	'she is sleeping'
unu	hundur-oy-ne	'we are sleeping'
isiŋ	hundur-oy-teena	'you pl. are sleeping'
iyo	hundur-oy-eena	'they are sleeping'
ani	siy-oy-e	'I am giving'
aði	siy-oy-te	'you are giving'
usu	siy-oy-e	'he is giving'
ii	siy-oy-te	'she is giving'
unu	siy-oy-ne	'we are giving'
isiŋ	siy-oy-teena	'you pl. are giving'
iyo	siy-oy-eena	'they are giving'

The Past Progressive is marked by the suffix *-ay*, which is followed by a subject marker from the same set as used with the simple Past tense discussed in section 4.3. Thus, the Past Progressive is transparently composed of affixes marking progressive aspect and past tense (in that order).

(50)

ani	roor-ay-i	'I was running'
aði	roor-ay-ti	'you were running'
usu	roor-ay-i	'he was running'
ii	roor-ay-ti	'she was running'
unu	roor-ay-ni	'we were running'
isiŋ	roor-ay-teena	'you pl. were running'
iyo	roor-ay-eena	'they were running'
ani	šaɠeey-ay-i	'I was working'
aði	šaɠeey-ay-ti	'you were working'
usu	šaɠeey-ay-i	'he was working'
ii	šaɠeey-ay-ti	'she was working'
unu	šaɠeey-ay-ni	'we were working'
isiŋ	šaɠeey-ay-teena	'you pl were working'
iyo	šaɠeey-ay-eena	'they were working'
ani	luɣooy-ay-i	'I was walking'
aði	luɣooy-ay-ti	'you were walking'
usu	luɣooy-ay-i	'he was walking'
ii	luɣooy-ay-ti	'she was walking'
unu	luɣooy-ay-ni	'we were walking'
isiŋ	luɣooy-ay-teena	'you pl. were walking'
iyo	luɣooy-ay-eena	'they were walking'
ani	ɠawoosið-ay-i	'I was bathing'
aði	ɠawoosið-ay-ti	'you were bathing'
usu	ɠawoosið-ay-i	'he was bathing'
ii	ɠawoosið-ay-ti	'she was bathing'
unu	ɠawoosið-ay-ni	'we were bathing'
isiŋ	ɠawoosið-ay-teena	'you pl. were bathing'
iyo	ɠawoosið-ay-eena	'they were bathing'

The habitual aspect is used only in the past tense. Past Habitual verbs are

formed by using the infinitive (unmarked) form of the main verb followed by the Past Progressive form of the auxiliary verb *ǰir*. Examples are shown below.

(51)	ani	roor	ǰir-i	'I used to run'
	aði	roor	ǰir-ti	'you used to run'
	usu	roor	ǰir-i	'he used to run'
	ii	roor	ǰir-ti	'she used to run'
	unu	roor	ǰir-ni	'we used to run'
	isiŋ	roor	ǰir-teena	'you pl. used to run'
	iyo	roor	ǰir-eena	'they used to run'
	ani	šaǧey	ǰir-i	'I used to work'
	aði	šaǧey	ǰir-ti	'you used to work'
	usu	šaǧey	ǰir-i	'he used to work'
	ii	šaǧey	ǰir-ti	'she used to work'
	unu	šaǧey	ǰir-ni	'we used to work'
	isiŋ	šaǧey	ǰir-teena	'you pl. used to work'
	iyo	šaǧey	ǰir-eena	'they used to work'
	ani	lugoy	ǰir-i	'I used to walk'
	aði	lugoy	ǰir-ti	'you used to walk'
	usu	lugoy	ǰir-i	'he used to walk'
	ii	lugoy	ǰir-ti	'she used to walk'
	unu	lugoy	ǰir-ni	'we used to walk'
	isiŋ	lugoy	ǰir-teena	'you pl. used to walk'
	iyo	lugoy	ǰir-eena	'they used to walk'
	ani	aañ	ǰir-i	'I used to eat'
	aði	aañ	ǰir-ti	'you used to eat'
	iyo	aañ	ǰir-eena	'they used to eat'
	ii	aañ	ǰir-ti	'she used to eat'
	unu	aañ	ǰir-ni	'we used to eat'
	isiŋ	aañ	ǰir-teena	'you pl. used to eat'
	usu	aañ	ǰir-i	'he used to eat'

4.6 Negative. Each of the verb forms discussed above in sections 4.3-4.5 can be negated. In many cases, negation is marked by either or both of the following: a *ma-* prefix and an *-o* suffix that takes the place of one of the subject agreement

suffix vowels. This situation may be a bit more complex than in the related Central Somali dialect described by Saeed; only a general preverbal negative particle *mə* and a negative imperative particle *əŋ* are mentioned for that dialect (1982: 22) along with some tone changes (1982: 23). There is no mention of a correspondent to LJM *-o*; this may relate to the general reduction of many vowels (especially final vowels) in Central Somali to [ə].

In this section, I present examples of negative forms corresponding to each of the verb forms from sections 4.3-4.5. The negative verb forms are presented according to the way in which they are formed, with the most basic negative forms given first, followed by more complex forms. Since potential verbs are negated using only a single prefix, these are presented first.

Potential verbs are made negative by prefixing *ma-* to the verb and using the same set of person markers as in the affirmative. Examples are shown below.

(52) a. *Future Potential Negative*

ani	ina-ma-hees-aw	muð-e	'I might not sing' (lit. 'I think I won't sing')
aði	ina-ma-hees-aso	muð-e	'you might not sing'
usu	ina-ma-hees-aw	muð-e	'he might not sing'
ii	ina-ma-hees-aso	muð-e	'she might not sing'
unu	ina-ma-hees-aano	muð-e	'we might not sing'
isiŋ	ina-ma-hees-aasona	muð-e	'you pl. might not sing'
iyo	ina-ma-hees-aayona	muð-e	'they might not sing'

b. *Generic Potential Negative*

ani	ina-ma-hees-o	lakayaawe	'I might not be singing'
usu	ina-ma-hees-o	lakayaawe	'he might not be singing'
ii	ina-ma-hees-to	lakayaawe	'she might not be singing'
unu	ina-ma-hees-no	lakayaawe	'we might not be singing'
aði	ina-ma-hees-to	lakayaawe	'you might not be singing'
isiŋ	ina-ma-hees-tona	lakayaawe	'you pl. might not be singing'
iyo	ina-ma-hees-ona	lakayaawe	'they might not be singing'

Several other types of verbs form plurals by prefixing *ma-* and using the same set of subject agreement suffixes as in the affirmative except that the first vowel of each suffix is changed to [o]. As seen below, this happens in the Simple Present A (and therefore also in the Near Future, whose auxiliary verb is in the

Simple Present A), Simple Present B (stative), Generic Future, and Present Progressive (which uses the same subject agreement suffixes as the Generic Future).

(53) a. *Simple Present A Negative*

ani	ma-raβ-o	'I will not'	unu	ma-rab-no	'we will not'
aði	ma-rap-to	'you will not'	isiŋ	ma-rap-toona	'you pl. will not'
usu	ma-raβ-o	'he will not'	iyo	ma-raβ-oona	'they will not'
ii	ma-rap-to	'she will not'			

b. *Near Future Negative*

ani	roor-o	ma-raβ-o	'I will not run'
aði	roor-to	ma-rap-to	'you will not run'
usu	roor-o	ma-raβ-o	'he will not run'
ii	roor-to	ma-rap-to	'she will not run'
unu	roor-no	ma-rab-no	'we will not run'
isiŋ	roor-tona	ma-rap-toona	'you pl. will not run'
iyo	roor-ona	ma-raβ-oona	'they will not run'

c. *Simple Present B Negative*

ani	ma-ɗeer-yo	'I am not tall'
aði	ma-ɗeer-to	'you are not tall'
usu	ma-ɗeer-yo	'he is not tall'
ii	ma-ɗeer-to	'she is not tall'
unu	ma-ɗeer-no	'we are not tall'
isiŋ	ma-ɗeer-tona	'you pl. are not tall'
iyo	ma-ɗeer-yona	'they are not tall'

d. *Generic Future Negative*

ani	ma-roor	doñ-yo	'I will not run'
aði	ma-roor	don-to	'you will not run'
usu	ma-roor	doñ-yo	'he will not run'
ii	ma-roor	don-to	'she will not run'
unu	ma-roor	doŋ-no	'we will not run'
isiŋ	ma-roor	don-toona	'you pl. will not run'
iyo	ma-roor	doñ-yoona	'they will not run'

e. *Present Progressive Negative*

ani	ma-roor-oy-o	'I am not running'
aði	ma-roor-oy-to	'you are not running'
usu	ma-roor-oy-o	'he is not running'
ii	ma-roor-oy-to	'she is not running'
unu	ma-roor-oy-no	'we are not running'
isiŋ	ma-roor-oy-toona	'you pl. are not running'
iyo	ma-roor-oy-oona	'they are not running'

Three verb forms have plurals with a *ma-* prefix and *-ne* suffix: Simple Past, Past Progressive, and Past Habitual. There is no person marking on these Negative forms, but the subject pronoun is still able to be omitted. When there is no overt subject marker, the verb form is ambiguous and the intended subject must be recovered from context. In Central Somali as well, Simple Past Negatives have only a single form, which has a *-nə* suffix (Saeed 1982: 23), but unlike in LJM, Past Habitual forms in Central Somali use the same set of person/number/gender suffixes as in the affirmative rather than using *-nə*. Examples of LJM Past Negative forms are shown below.

(54) a. *Past Negative*

ani	ma-roor-ne	'I didn't run'
aði	ma-roor-ne	'you didn't run'
usu	ma-roor-ne	'he didn't run'
ii	ma-roor-ne	'she didn't run'
unu	ma-roor-ne	'we didn't run'
isiŋ	ma-roor-ne	'you pl. didn't run'
iyo	ma-roor-ne	'they didn't run'

b. *Past Progressive Negative*

ani	ma-roor-ay-ne	'I was not running'
aði	ma-roor-ay-ne	'you were not running'
usu	ma-roor-ay-ne	'he was not running'
ii	ma-roor-ay-ne	'she was not running'
unu	ma-roor-ay-ne	'we were not running'
isiŋ	ma-roor-ay-ne	'you pl. were not running'
iyo	ma-roor-ay-ne	'they were not running'

c. *Past Habitual Negative*

ani	ma-roor ǰir-ne	'I didn't used to run'
aði	ma-roor ǰir-ne	'you didn't used to run'
usu	ma-roor ǰir-ne	'he didn't used to run'
ii	ma-roor ǰir-ne	'she didn't used to run'
unu	ma-roor ǰir-ne	'we didn't used to run'
isiŋ	ma-roor ǰir-ne	'you didn't pl. used to run'
iyo	ma-roor ǰir-ne	'they didn't used to run'

The Immediate Future Negative is formed by prefixing *ma-* to the verb and by changing the subject agreement suffixes. For the 2sg, 3sg feminine, and all plural subjects, the second vowel of the suffix changes to [o]. For 1sg and 3sg masculine, the negative suffix is *-aw*, which is not directly related to the corresponding affirmative suffix, *-e*, though it is not difficult to imagine that historically the negative suffix had the form *-eo*, which could have undergone some sound changes to surface in the modern language as [aw]. Central Somali has *-aw* for the 1sg and 3sgm here as well (Saeed 1982: 24); apart from the Simple Past Negative mentioned above, this is apparently the only segmental person/number/gender suffix change that occurs in the negative form for any tense/aspect in Central Somali. Immediate Future Negative forms in LJM are shown below.

(55) *Immediate Future Negative*

ani	ma-roor-aw	'I will not run'
aði	ma-roor-aso	'you will not run'
usu	ma-roor-aw	'he will not run'
ii	ma-roor-aso	'she will not run'
unu	ma-roor-ano	'we will not run'
isiŋ	ma-roor-asoona	'you pl. will not run'
iyo	ma-roor-ayoona	'they will not run'

The one verb form whose Negative form does not fit any of the descriptions above is the Imperative. The Imperative Negative is formed by prefixing *aŋ-* to the Imperative verb and adding a suffix *-to* or *-tona* (for singular or plural subjects, respectively). Note that the negative suffixes do not relate transparently to the corresponding affirmative suffixes, *-∅* (for a singular subject) and *-a* (for a plural subject). Imperative Negative examples are given below.

(56) *Imperative Negative*

aŋ-roor-to	'don't run!'
aŋ-roor-tona	'don't run! pl.'

An issue that arises in the analysis of Negative verb forms is in identifying what part(s) of a complex verb the negation applies to. In the case of simple verbs with no auxiliary verb, such as the Present Progressive, the negative prefix occurs immediately before the verb stem, and the negative 'suffix' is manifested by changing a vowel of the subject agreement suffix. In some verb forms, such as the Near Future, the negative markers apply only to the auxiliary verb, whereas in other complex forms, such as the Generic Future, the negative prefix occurs before the main verb stem while the suffix vowel change applies to suffixes attached to the auxiliary verb. It may be the case that in cases where a negative prefix and suffix 'surround' both the main and auxiliary verbs, then perhaps the auxiliary verb is better analyzed as a suffix on the main verb; perhaps the location of the negative markers can serve as a diagnostic for auxiliary verbs vs. suffixes. I leave this issue for future research.

The person/gender/number suffixes for each of the tenses and aspects described above (affirmative and negative) are summarized below in Table 1. It was observed above that the 1sg and 3sgm suffixes are always identical, as are the 2sg and 3sgf suffixes (except in the case of the imperative, since there is no 3sgf imperative form). Some further observations can be made about the form of the suffixes as follows. First, second person and feminine both appear to be marked with *t*. All second person and feminine suffixes begin with /t/ except for the Immediate Future and Future Potential; in those tenses/aspects, the second person and feminine suffixes contain /s/, which could be the reflex of a historical **t* (though the Central Somali correspondent to LJM Immediate Future also has /s/ in these suffixes (Saeed 1982: 24)).

A second generalization is that where 2sg/3sgf has /t/ or /s/, the 1pl suffix has /n/. This is the only difference between 2sg/3sgf and 1pl in every tense/aspect except the Future Potential, in which there is also a vowel length difference between the suffixes *-aso* and *-aano*. In addition, the 2pl and 3pl suffixes are always identical except that 2pl has /t/ or /s/ where 3pl has ∅ or /y/; their vowels are always the same, though the vowel portion of these suffixes cannot be analyzed straightforwardly as constituting the plural marking, since as mentioned above, the 1pl suffixes pattern with the singular suffixes in terms of their vowels and overall shape. Interestingly, despite several vowel differences, these generaliza-

tions about suffix consonants and suffix shapes in LJM are true of Central Somali (Saeed 1982) as well.

Table 1: Person/Number/Gender suffixes

		Person/Number/Gender suffix on main verb				
		1sg/3sgm	*2sg/3sgf*	*1pl*	*2pl*	*3pl*
Tense/Aspect						
Simple Past/	Aff.	-i	-ti	-ni	-teena	-eena
Past Progressive	Neg.	No person/number/gender suffix				
Simple Present A/	Aff.	-e	-te	-ne	-teena	-eena
Present Progressive	Neg.	-o	-to	-no	-toona	-oona
Simple Present B	Aff.	-ya	-ta	-na	-tena	-yena
	Neg.	-yo	-to	-no	-tona	-yona
Generic Future	Aff.	-ya	-te	-ne	-teena	-yeena
	Neg.	-yo	-to	-no	-toona	-yoona
Immediate Future	Aff.	-e	-ase	-ane	-aseena	-ayeena
	Neg.	-aw	-aso	-ano	-asoona	-ayoona
Near Future/ Generic Potential	Aff./ Neg.	-o	-to	-no	-tona	-ona
Imperative	Aff.	NA	-∅/NA	NA	-a	NA
	Neg.	NA	-to/NA	NA	-tona	NA
Future Potential	Aff./ Neg.	-aw	-aso	-aano	-aasona	-aayona
Past Habitual	Aff./ Neg.	No person/number/gender suffix				

5. Conclusion.

This paper has presented an overview of the phonology and morphology of Lower Jubba Maay. This is a previously undescribed language that is significantly different from dialects of Somali and Maay that have been described in the literature. It has been demonstrated that there are several areas of theoretical and typological interest in this language, in particular with regard to plural and gender marking in the nominal morphology.

REFERENCES

Andrzejewski, Bogumil. 1960. "The categories of number in noun forms in the Borana dialect of Galla". *Africa* 30: 62-75.

Armstrong, Lilias E. 1934. *The Phonetic Structure of Somali*. 1964 reprinted edition. Ridgewood, New Jersey: Gregg Press Incorporated.

Hyman, Larry M. 1981. "Tonal accent in Somali". *Studies in African Linguistics* 12.2: 169-201.

Kenstowicz, Michael. 1994. *Phonology in Generative Grammar*. Oxford: Blackwell.

Lecarme, Jacqueline. 2002. "Gender 'polarity': Theoretical aspects of Somali nominal morphology". *Many Morphologies*, ed. by Paul Boucher & Marc Plénat. Somerville, Massachusetts: Cascadilla Press. Pp. 109-141.

Luling, Virginia. 1987. *Somali-English Dictionary*. Wheaton, Maryland: Dunwoody Press.

Oomen, Antoinette. 1981. "Gender and plurality in Rendille". *Afroasiatic Linguistics* 8.1: 35-75.

Saeed, John I. 1982. *Central Somali: A Grammatical Outline. Monographic Journals of the Near East: Afroasiatic Linguistics* 8.2. Malibu, California: Undena Publications.

Saeed, John I. 1987. *Somali Reference Grammar*. Wheaton, Maryland: Dunwoody Press.

Saeed, John I. 1999. *Somali*. Amsterdam/Philadelphia: John Benjamins Publishing Company.

Department of Linguistics and Cognitive Science
110 Mason Hall
550 North Harvard Avenue
Pomona College
Claremont, CA 91711
mary.paster@pomona.edu

[received May 22, 2006
accepted Sept. 2, 2006]

Studies in African Linguistics
Volume 35, Number 1, 2006

PUBLICATIONS RECEIVED

Blench, Roger. *Archaeology, Language, and the African Past.* (African Archaeology Series, vol. 10. Lanham, MD: AltaMira Press. 2006. Pp. xxv, 361. ISBN 0-7591-0446-2. Paperback. $44.95.

This book comprehensively surveys the history of African language families, integrating linguistics, archaeology, genetics and history. The three parts of the book cover methodology, language phyla, and evidence from the history of economic subsistence. The chapter "Developing general models" [3-31] emphasizes the value of an interdisciplinary approach, and reviews the disciplines of African archaeology, historical linguistics, genetics, and ethnography. "Contested methodologies" [33-87] focuses on disputes over the scientific validity of methods in historical linguistics, problems with focusing on written languages, and introduces glottochronology, lexicostatistics, historical reconstruction, methods of language classification, and the impact of language contact and shift for historical research.

Chapters on language phyla follow. "Nilo-Saharan" [95-108] presents Nilo-Saharan, its internal grouping, previous research on reconstruction, the age of the phylum, how it expanded, and the problem that many major subgroups tend to be single languages. "Niger-Congo" [109-139] discusses the history of classification in this phylum, which includes more languages than any other in the world. Blench proposes a new classification of Niger-Congo which is not as strongly guided by the principle of branch-reduction as is traditionally the case; a model of Niger-Congo expansion from West Africa 7,000 years ago is proposed. "Afroasiatic" [139-162] reviews the history of Afroasiatic reconstruction and classification, discusses the problem of the preeminence of Semitic in classification, and proposes a reclassification of Afroasiatic and the dispersal from Ethiopia approximately 10,000 years ago. "Khoesan" [163-165] raises the question whether this is a legitimate phylum, given controversies over Sandawe and Hadza, Kwadi and Eastern ǂHõã. The chapter "Other language groups" [169-178] discusses Austronesian Malagasy and the arrival of man on Madagascar, mentions eight possible language isolates, and raises the question of the languages of pygmies and "Twa" populations.

In the section on economic history, "Plants" [191-232] surveys facts of trees such as the oil palm and bush candle which are relevant to historical reconstruction, the arrival and diffusion of various food crops, and problems of interpreting the evidence for a particular plant species. "Animals" [243-281] similarly surveys the relevant historical facts surrounding important animals: the crocodile, vulture, and sawfish, and domestic animals such as the camel, donkey, cattle, pig, cat, and dog. The book includes extensive references [287-339] as well as a list of websites including one designed for this book.

Bynon, James. *Recherches sur le vocabulaire du tissage en Afrique du Nord.* (Berber Studies, vol. 11). Cologne: Rüdiger Köppe Verlag. 2005. Pp. xii, 233, 6 drawings. ISBN 3-89645-390-4. Paperback. €34.80.

Professor Bynon's previously unpublished doctoral dissertation from the Ecole Nationale des Langues Orientales Vivantes, Paris, completed in 1963, is published in this book. This volume is a comparative linguistic work which investigates components of the weaving vocabulary in the Berber languages of North Africa. "Introduction" [1-18] describes contemporary and ancient looms in different regions of North Africa. "Methode de travail" [19-32] primarily presents the sources for the study, arranged geographically, as well as explaining notational conventions. Eight chapters follow, giving rich documentation of the lexicon, associated grammatical facts, and semantics surrounding different aspects of weaving vocabulary, covering "Le métier à tisser à haute lice" [33-70], "Les traverses du métier à tisser, ou ensouples" [71-100], "Les montants du métier à tisser" [101-121], "Les tendeurs latéraux du tissu" [122-130], "Le peigne à tisser" [131-204], "La lice" [205-216] and "Les roseaux" [217-225].

Dickens, Patrick J. *A Concise Grammar of Ju|'hoan. With a Ju|'hoan—English Glossary and a Subject Index.* (Research in Khoisan Studies, vol. 17). Cologne: Rüdiger Köppe Verlag. Pp. 114, 2 tables. ISBN 3-89645-145-6. Paperback. €16.80.

The previously unpublished manuscript of a teaching grammar for Ju|'hoan, prepared between 1989 and 1992 by the late Patrick Dickens and used as part of a set of materials used in teaching literacy in that language, is made available in this book. It begins with an introduction [5-16] by Megan Biesele on the impact of Dickens' work on Ju|'hoan language development, followed by the 22 lessons [21-95] prepared by Dickens. The core grammar presupposes familiarity with the practical orthography so there is no discussion of pronunciation. Each brief lesson presents a synopsis of the language focusing on a particular aspect of the grammar. These lessons cover general sentence structure, human pronouns, tense-aspect, plurals, adjectives, noun classes and pronouns, possession, transitivity, imperatives, 'where?', relative clauses, conjunctions, deixis, possessed pronouns, locatives, noun derivation, question words, serial verbs, irregular verbs, reflexives and reciprocals, and pronouns as clause heads. This is then followed by a Ju|'hoan glossary [99-110] and subject index [111-114].

Kossmann, Maarten. *Berber Loanwords in Hausa.* (Berber Studies vol. 12). Cologne: Rüdiger Köppe Verlag. 2005. Pp. x, 228. ISBN 3-89645-391-2. Paperback. €34.80.

This volume expands the line of research established by the Hausa scholar Claude Gouffé on linguistic contacts between Tuareg and Hausa. "Introduction" [1-26] discusses lexicographic

sources, transcription and the languages of the Niger desert which include a possible unknown substratum language. "Early Berber loanwords in Hausa" [27-81] discusses a set of loanwords which may be from an earlier period than the majority of Tuareg loans into Hausa, especially focusing on what is known about the introduction of the camel into North Africa, the reconstruction of Berber *alγəm, aḷəm*, and the spread of the term into numerous Sahelian languages. Other early loans include "cat", "chicken", "donkey", "pigeon", "sheep" and a number of items coming into Hausa through Kanuri.

The majority of the work is contained in the third chapter "Berber borrowings in Hausa" [83-153], which analytically lists around 100 clear Tuareg borrowings into Hausa, building on earlier work by Gouffé and Skinner, and another 60 problematic cases. "The integration of Berber borrowings in Hausa" [155-191] investigates how Tuareg words were adopted phonologically and morphologically into Hausa. "Conclusions and implications for Hausa linguistic studies" [193-204] then presents general conclusions regarding the chronology and mechanics of borrowing, in particular the importance of asymmetrical bilingualism in the process of loanword adaptation.

Sambiéni, Coffi. *Le Proto-Oti-Volta-Oriental. Essai d'application de la méthode historique comparative.* (Gur Monographs vol. 6). Cologne: Rüdiger Köppe Verlag. 2005. Pp. xviii, 316. ISBN 3-89645-116-2. Paperback. €39.80

The historical development of the Eastern Oti-Volta languages of Benin, Burkina Faso and Togo, comprising Byali, Ditammari, Nateni and Waaman, is the subject of this revision of the author's doctoral dissertation. "Introduction" [1-20] introduces the languages under investigation and previous theories of their genetic relation to each other and within Gur, and explains the comparative method. "Rappel des structures phonetiques et phonologiques" [21-35] gives the phonetic and phonemic inventories of the languages, and "Genres et classes nominales" [36-94] presents the system of noun classes for each of the languages. "La dérivation verbale" [95-112] covers varieties of verbal derivation including factitive and inchoative, reversive, separative and contactive, pluractional, and durative. The fourth chapter "Les categories verbales: temp, aspect et mode (TAM)" [113-159] completes the synchronic description of the languages by presenting the tense-aspect and mood systems of the languages.

Subsequent chapters treat the reconstruction of phonemes ("Correspondances vocaliques" [160-182] and "Correspondances consonantiques" [183-207]). This is followed by chapters on noun class reconstruction [208-234] and reconstruction of verbal derivational and TAM morphemes [235-259]. Chapter 10 "Correspondances lexicales" [260-280] provides reconstructions of a number of roots, and "Conclusions" [281-9] summarizes the results of the study, and the book ends with a comparative vocabulary of over 400 entries arranged according to the French gloss.

Voeltz, F. K. (editor) *Studies in African Linguistic Typology*. (Typological Studies in Language 64). Amsterdam & Philadelphia: John Benjamins Publishing. 2005. Pp. 426. ISBN 90-272-2975-9. Hardcover. $174.00

This book comprises 21 selected papers presented at the International Symposium: Typology of African Languages, May 21-24, 2001 in Sankt Augustin, Germany. The majority of these papers each present a survey of a language phenomenon and the broader implications for typology. Topics covered include the source of certain TAM markers in Sotho and Zulu (Batibo), marking of directional deixis (ventive and itive) in Somali (Bourdin), the typology of bound subject and object markers on verbs (Creissels), areal diffusion and historical drift in head and dependent marking and word order in Nilotic (Dimmendaal), varieties of strategies for expressing passive agents in Bantu (Fleisch), language-internal motivation for the grammaticalization of switch reference (Frajzyngier), complex predicates involving a generic auxiliary (Güldemann), the 'One-high-only' constraint (Hayward), and conflicting criteria for word status in Luganda (Hyman & Katamba). Other studies discuss the anomalous case system of Ik (König), a classification of relative clause formation strategies in African languages (Kuteva & Comrie), deixis in Gur (Lébikaza), the erosion of preprefixes in certain Southwest Bantu languages (Legère), the correlation between tense, aspect, and verbal versus nonverbal negation in Kabyle (Mettouchi), grammaticalization of 'give' in Kabba (Moser), the sentence-type and focus-marking role of Cushitic verb-inflectional 'selectors' (Mous), the historical question of whether Kiyansi is a Bantu language (Mufwene), verbal valence changes in Gur and Mande (Reineke & Miehe), incorporation (Riehl & Kilian-Hartz), a variety of 'be' constructions in Emai (Schaefer & Egbokhare), and a detailed analysis of focus in Hausa (Wolff).

Studies in African Linguistics
Volume 35, Number 1, 2006

UPCOMING MEETINGS ON AFRICAN LANGUAGES / LINGUISTICS

2007

March 16-18

35TH ANNUAL MEETING OF THE NORTH AMERICAN CONFERENCE ON AFROASIATIC LINGUISTICS. San Antonio, Texas. Abstract deadline: December 1, 2006. Abstract length 200-300 words as PDF file or Word document or printed page. See the NACAL webpage for further information: http://www.nacal.org.

March 22-25

38TH ANNUAL CONFERENCE ON AFRICAN LINGUISTICS AND THE 11TH ANNUAL CONFERENCE OF THE AFRICAN LANGUAGE TEACHER'S ASSOCIATION. University of Florida, Gainesville. Deadline for abstracts, December 4, 2006. Information to be available at the conference website: http://web.africa.ufl.edu/ACALALTA2007.pdf.

September 24, 2007

WORKSHOP ON THE TYPOLOGY OF AFRICAN LANGUAGES, in conjunction with the 7th International Conference of the Association of Linguistic Typology. Paris. Abstract (maximum 400 words) before January 15, 2007. Abstracts sent by e-mail should be included in the message (not appended as an attachment). Send abstracts to Guillaume Segerer, Workshop on African Languages; LLACAN - CNRS - B.P. 8; 7, rue Guy Môquet; 94801 Villejuif Cedex France. Or submit by email to segerer@vjf.cnrs.fr.