

NUMBER MARKING IN MADA NOUNS

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ABSTRACT

Mada, a Plateau language of Central Nigeria, is a part of a family of which originally had a rich system of alternating nominal prefixes and concord, inherited from proto-Benue-Congo. These prefixes have been deleted, creating a system of tone-oppositions on the stem to mark number. However, perhaps due to the large number of homophones created, Mada is developing new or pseudo-prefixes developed from a variety of lexical sources. These have not been wholly absorbed, hence the presence of alternative plurals and multiple affixing. Mada is thus a good example of how rapidly morphological systems can become highly idiosyncratic in the context of a multilingual environment.

Keywords; Mada; noun-classes; morphology; Niger-Congo

1. Number marking in nominal affix languages and its erosion

The Niger-Congo languages and in particular the Benue-Congo family are considered to have originally had a fully functional system of number marking through nominal affixation. Individual affixes may have semantic associations and shown alliterative concord, marked particularly on adjectives and demonstratives. Some branches, such as East Kainji, maintain a fairly complete system, but in many branches this system has broken down in various ways. In the West Benue-Congo (or Volta-Niger) languages, this appears to have happened so long ago that evidence for its nature is now very fragmentary; for example the initial floating tones in the Igbo associative construction (Williamson 1993). Elsewhere rather puzzling relics remain. Lower Cross languages have by and large no system of nominal affixes except for Usaghade, where a complete system is either retained or has been rebuilt (Connell 1987). Much the same is true for Gade, a language within the Nupoid family (Sterk 1978). Within Plateau, the picture is extremely mixed; some languages, such as Che retain a fairly complete system (Wilson 2002: 174), elsewhere it has completely disappeared leaving little trace. Such systems can also be rebuilt, in ways which result in little segmental cognacy with inherited systems.

Erosion processes are highly variable; most typical is the gradual loss of the prefix, leading either to complex initial consonants in C_1 position or palatal and labial prosodies where the affixes were front or back vowels. Very often the tone is retained, but moves rightwards into the stem, creating complex glides. This paper¹ explores the nominal morphology of Mada, where the erosion process has almost gone to term, creating a starburst of distinct outcomes. Mada has partly rebuilt a system of number marking through affix alternation for persons, but these are built out of grammaticalised lexemes and do not reflect an inherited system. Part of the interest of the Mada system is the apparent speed with which it has developed; the language most closely related to it still retain characteristic Benue-Congo affix alternation.

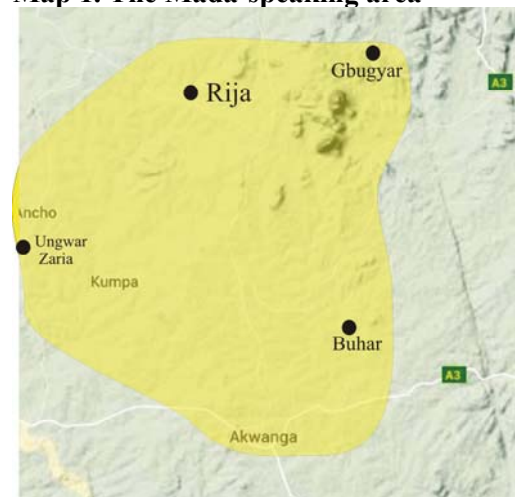
2. Background to the Mada language

2.1 Location, name, classification

The Mada people live primarily in the region between Anjida and Akwanga on and around the road leading from Fadan Karshe to Akwanga in Plateau State, Central Nigeria (Map 1). Their numbers are hard to estimate but probably now exceed 50,000. The principal modern work on the Mada language is Price (1989)². This work covers the phonology and orthography of Mada spoken in Rija, a village central to Mada country and the dialect chosen for New Testament translation. Mada has an extensive dialect network and there is quite a high level of variation from village to village. Price (1989) gives a valuable comparative wordlist in different dialects, which shows that at least some of them have markedly different phonology from Rija Mada, probably due to the influence of Eggon.

Mada was first classified as part of the Plateau language group in Greenberg (1963) and Gerhardt (1989), Crozier and Blench (1992) have followed this view. Mada was put together with Ninzam, Ayu, Che, Ninkyop and some other languages as part of Greenberg's Plateau IV. More recently, this group has been christened 'Ninzic' in the light of the numerous languages with a -nin- element in their ethnonym (Blench in press a).

Map 1. The Mada-speaking area



¹ The core data for this paper comes from a Mada dictionary, which has been underway since in collaboration with the late Barau Kato, who died in early 2015.

² Gerhardt (1983:112 ff.) includes some notes on the phonology and noun-class systems of two Mada dialects, but these have been comprehensively superseded by Price (1989).

2.2 The Sound System of Mada and its Orthography

The analysis of Mada phonology broadly follows Price (1989). Rija Mada has twenty consonant phonemes:

	Labial	Labio-dental	Alveolar	Velar	Labio-velar
Plosives vls	p b		t d	k g	kp gb
Fricatives vls		f v	s z		
Affricates vls			ts dz		
Nasals	m		n	ŋ	
Laterals			l		
Vibrants			r		
Approximants vls					ʌ
Approximants vd			y		w

There are eight vowel phonemes:

	Front	Central	Back
Close	i		u
Close-Mid	e	ə	o
Open-Mid	ɛ		ɔ
Open		a	

but only five corresponding nasalised vowels;

	Front	Central	Back
Close	ĩ		ũ
Open-Mid	ẽ		õ
Open		ã	

In the original orthography of 1985, the symbol ñ was adopted to mark nasalisation following a vowel, but this has been simplified to n. Thus ã is written ‘an’. The Mada orthography corresponds to the IPA symbols via the following conventions;

ng	ŋ	
c	tsʸ	
j	dzʸ	
sh	sʸ	
ny	ŋʸ	
h	ʌ	before o ɔ u
hw	ʌ	elsewhere

Mada has three level tones and a rising and falling tone. The orthography marks tones as follows:

high tone is unmarked
 /̄/ mid tone is shown by a macron
 /˘/ for a low tone
 /ˆ/ for a falling tone
 /̃/ for the rising tone.

This convention is retained in this paper.

3. Nouns and noun-classes

3.1 Historical number marking strategies in Plateau

Plateau languages were historically noun-class languages, with alternating affixes marking singular and plural, showing concord with adjectives and with some semantic content (De Wolf 1971). However, synchronically, number marking characteristics are extremely diverse, and affixes co-exist with other pluralisation strategies, some clearly recent and others of uncertain antiquity (Blench in press b). The literature, implicitly or otherwise, assumes that many languages are ‘transitional’, i.e. a prior orderly Bantu-like system is collapsing and new systems are developing, or otherwise being simplified (e.g. Gerhardt 1972/3). I have elsewhere questioned whether the evidence justifies attributing to proto-Plateau such an orderly system (Blench 2000a, in press b).

Within Ninzic in particular, the affix-marking has eroded and been transformed or complemented by a variety of competing strategies. In the Mada language, like many of its neighbours, these strategies are simultaneously present in the language. The process of replacement of one system by another is shown by the co-existence of two alternative plurals for some words, both acceptable to speakers. Over time one will come to replace the other unless both are overtaken by another wave of innovation.

This paper describes Mada noun morphology and tabulates all the number marking strategies identified and provides examples of each. It discusses potential historical scenarios for their origin, and proposes a model for the evolution of these systems.

3.2 Mada noun morphology

Table 1 shows the possible canonical structures of Mada nouns so far identified. Borrowings have introduced some rare structures. The large variety of prosodies in Mada (palatalisation, labialisation, lateralisation and rhotacisation and their combinations) will further multiply the number of possible structures (see Price 1989: 12).

Table 1. Canonical structures of Mada nouns

Structure	Example	Gloss	Comment
CC	kpm̄	kapok tree	
CCV	mlà	first born	
CV	bē	large male patas monkey	
CVC	bān	law	
CVCCa	bārga	lion	
CVCCV	kānggù	crab	
CVCNV	bānyū	lip	
CVCV	bēki	seed	
CVCVC	bēkan	ring	
CVCVCV	bedārō	millet	
CVCVCVCV	belābelà	cattle egret	borrowing, exceptional
CVCVCVN	bēkitōn	ear-ring	
CVCyV	begywī	flying ants	palatal labial exceptional
CVNCVN	bēm̄kpàn	maize kernel	
VCV	aku	grey parrot	borrowing, exceptional

The CC structure of *kpm* 'kapok tree' is very unusual within the context of Plateau and there are only seven words with this form (Price 1989: 13).

3.3 Synchronic number marking strategies

Mada marking of nominal plurals can be divided into six categories:

- I tone-change
- II initial syllable reduplication
- III prefix addition
- IV person nouns grammaticalised as pseudo-prefixes
- V diminutives grammaticalised as pseudo -prefixes
- VI suppletives

Prefixes marking size can alternate with non-prefixed nouns creating a plethora of additional forms. Some nouns usually take diminutive prefixes in speech, but these are not easy to predict. Concord of a sort, based on tonal correspondences, exists in Mada, although this will be discussed in a study of adjectives.

The historical layering of these number marking strategies can be detected through the existence of multiple forms, sometimes with, for example, tone-raising applied to a noun formerly which also has first syllable reduplication or prefix addition. The consequence of this has been that the tone-plurals of Mada show extremely low levels of predictability.

The following sections give examples of each type of plural.

Type I nouns: tone-alternation

The single most common pattern of pluralisation in Mada is tone alternation. Under different guises this is common across much of Plateau, and in the great majority of cases the tone is raised, usually one level in three-tone languages. This rule is applied to productive prefixes where these are present (Izere, Tarok) and to stems where prefixes have eroded (Hyam, Berom) (see Blench 2000b for discussion). Even in languages where productive prefixes are present synchronically, tone-plurals presumably derive from the erosion of former prefixes and their subsequent renewal. However, such forms may have evolved at various periods in the prehistory of Plateau and it is not necessary to assume they were a feature of proto-Mada. Ninkyop, for example, another Ninzic language without prefixes, shares some features with Mada, suggestive of an earlier phase of prefix loss. For some word-classes, tone-plurals may already have been generalised in pre-Mada although they are also found on very recent loanwords such as 'motorcycle' or 'cutlass' which never have had a prefix. One word, *aku*, parrot, has been borrowed from Hausa, preserving an undeleted V-initial.

As the examples given below demonstrate, tone-alternations in Mada plurals are highly diverse, pointing to a complex history of compounding, borrowing and reanalysis. Although some patterns are common and others very rare, it would be stretching the case to call these patterns noun-classes. Certainly, they seem to have little semantic unity. Indeed the tones on recently adopted loanwords are probably assigned by interpreting the tone of the donor language, not by a category of semantic content. Mada tone-raising is almost always single-step, L→M or M→H etc. However, where the singular is polysyllabic, the effects on the tone of the plural are highly diverse and difficult to predict. This is undoubtedly due to the creation of new pseudo-prefixes via grammaticalised nouns. These nouns retain their original tone alternations, making a large number of tonal patterns at the word level. The examples give sets of different patterns of tone-raising, divided into single and multiple changes.

Semantically, person, animals and to a lesser extent, trees, are widespread in these classes. In some pairings, animal names form every member of the set, elsewhere they predominate. This strongly suggests that when Mada had a prefix system, classes had a strong semantic element, at least as far as persons and animals were concerned.

Monosyllables

The possible tone-alternations on monosyllables are;

1. L→M
2. L→H
3. M→R
4. M→H
5. R→H
6. H→R

The tables give examples of each possible pairing following the order given above;

1. L	M	Gloss
kyù	kyū	death
bri	brī	ghost
mfər	mfēr	vagina

2. L	H	Gloss
bàr	bər	royal python
bòn	bøn	hawk
gùr	gur	granary
kpm̃	kpm	silk-cotton tree

Only a single case of M→R has been encountered;

3. M	R	Gloss
jū	jǔ	water-yam

4. M	H	Gloss
bē	bɛ	monkey
lā	lə	locust tree
tsār	tsər	mahogany
cā	cə	leopard

5. R	H	Gloss
dǎ	da	cutlass
cě	cɛ	old age
dǎr	dər	heart
gbyě	gbye	straight razor
gbǎ	gbm	sound

The alternation H→R is rare; the following table lists all examples so far encountered;

6. H	R	Gloss
cun	cǔn	forest
ji	jǐ	mortar
nan	nǎn	flesh, animal
kpə	kpǎ	shoe
mbu	mbǔ	mat
ngwən	ngwǎn	hand

Disyllables

Disyllabic roots admit a wide range of pairings. The following tables exemplify all the pairs so far recorded. Where the examples are numerous, the pairing is common. Where only one or two cases are noted, this represents the total of those so far encountered.

LL	HL	Gloss
bə̀bè	bə̀bè	tail
mgbə̀mgbə̀r	mgbə̀mgbə̀r	navel

LL	ML	Gloss
kpàkì	kpākì	stick
kpàtì	kpātì	box
māmgbɔ̀yèn	māmgbɔ̀yèn	wasp

LL	MM	Gloss
gbàrkì	gbārkì	flower
kìkòn	kīkòn	weapon [‘thing of war’]

kì- is a pseudo-prefix, a grammaticalisation of *kì pl. kī* ‘thing’ which appears in a number of other nominal pairings, for example;

kìrē	kīrē	food
kìyə̀wò	kīyə̀wò	domestic animals, livestock
kìkyε	kīkyε	bicycle

The word for ‘bicycle’ is of particular interest, since it is a borrowing from Hausa *kyeekye* and clearly not part of an ancient word-stock. The first syllable has been analysed as the *kì-* pseudo-prefix and tonal alternation applied regularly.

LL	HH	Gloss
gə̀ntsù	gə̀ntsù	grass sp.
lùm̀vù	lùm̀vù	beetle
mə̀gàn	mə̀gàn	sap
mgbə̀ryò	mgbə̀ryò	throat

LM	LR	Gloss
mgbə̀rìn	mgbə̀rìn	urine

LM	FM	Gloss
m̀kpànē	m̀kpànē	elderly person

LM	HM	Gloss
ywèkə̀	ywèkə̀	chicken egg

LM	MM	Gloss
kəkə̀	kəkə̀	fowl
kə̀nggān	kə̀nggān	drum
kìrē	kīrē	food
kə̀mbə̀	kə̀mbə̀	calabash
tə̀nzē	tə̀nzē	goodness, beauty
wə̀ndò	wə̀ndò	trousers

LM	HH	Gloss
gənggān	gənggan	barrel-drum
gəntē	gənte	raft-zither
gəṛī	gəri	co-wife
kpālo	kpalo	tree pangolin
sàpər	sapər	soap

LR	MM	Gloss
mgbənjān	mgbənjān	beard of maize

LR	HH	Gloss
cinjī	cinji	hourglass drum
ləywǎ	ləywa	stink-ant

LH	MH	Gloss
bábər	bābər	motorcycle
kikyɛ	kīkyɛ	bicycle

ML	MH	Gloss
kəgbù	kəgbu	baboon

kə- is likely to be a pseudo-prefix although its etymology is unclear.

ML	HM	Gloss
pərki	pərkī	cane

ML	HH	Gloss
tərmgbù	tərmgbu	snake sp.

MM	HM	Gloss
mgbərōn	mgbərōn	stool

MM	MH	Gloss
tātē	tāte	father, elder

MM	HH	Gloss
nggūnggū	nggunggu	metal dish
tərmvū	tərmvu	hyena

MM	LR	Gloss
nyənyōn	nyənyōn	leather thong

MH	HH	Gloss
gbəntan	gbəntan	sheep
gūgu	gugu	goat
kpəgbru	kpəgbru	vulture
ləkə	ləkə	age-mate
tātsu	tatsu	amphisbaenid snake

RL	HM	Gloss
brəkri	brəkri	yam heap
bəkī	bekī	seed

RL	HL	Gloss
mgbǎshò	mgbəshò	speargrass
bémkpàn	bemkpàn	maize kernel

RM	HM	Gloss
lǎdē	lədē	pig
nggǎgyū	nggagyū	dog

RM	HH	Gloss
běkpū	bekpu	kernel of guinea corn
běncī	benci	acca cultivar
bīshī	bishi	eye, face
mgbǎntā	mgbantə	stone

RH	HH	Gloss
bǎrga	barga	lion
běkan	bekan	ring
mkplūn	mkplun	spherical object

RR	HH	Gloss
bězǔ	bezu	bullet

The pseudo-prefix *bě*, meaning something ‘seed’, ‘small round object’ retains its sg./pl. tone change R → H in all compounds, thereby generating a large subset of tone-plurals.

HL	LM	Gloss
mgbəjə	mgbəjə	cane

HL	MM	Gloss
kənkòn	kənkòn	way

The pair HL/HH is widespread but entirely confined to animals.

HL	HH	Gloss
gantàn	gantàn	brown spider
lunkpùr	lunkpur	hartebeest
məsà	məsa	cat
mkpələ	mkpəla	black kite

HL	RM	Gloss
kpəntàn	kpəntān	skin
ncancùn	ncāncūn	story

HM	RM	Gloss
ləgū	ləgū	cassava (< Hausa)
mgbətsā	mgbətsā	spoon

HM	HH	Gloss
gbəjī	gbəji	steam
gbəryūn	gbəryun	knee
kagbōn	kagbən	tortoise
kaprē	kaprē	nightjar

Trisyllables

Trisyllabic tone alternations are quite rare in Mada and seem to form no obvious groups. Surprisingly, there are several recent loanwords in this restricted set. Table 2 sets out all the alternations recorded.

Table 2. Mada trisyllabic tone-plurals

Singular	Plural	Gloss	Comment
bəbrɛywi	bəbrɛywi	cockroach	redup.
gbəgbaki	gbəgbakī	broken calabash	redup.
gbəlantswē	gbəlantswē	cricket	
kāləbā	kaləba	bottle	< Hausa
kiyəwò	kīyēwò	domestic animals, livestock	
kpòmgbukpòn	kpòmgbukpòn	large male patas monkey	? redup.
kukuki	kùkukī	stick	redup.
mbəmbəlāki	mbəmbəlākī	gutter	redup.
mələka	mələkū	angel	< Hausa
məsārā	məsārā	white person	< Hausa
mkpəlōtù	mkpəlōtù	skull	
njilādān	njiladan	gecko	
njinjāki	njīnjākī	rag	redup.
ntənāntsò	ntənantso	chameleon	? redup.
shəshàre	shəshare	weaver bird	redup.
tətələ	tətələ	lantern	< Hausa + redup.

As with other tone-plurals, animals predominate. Despite the Hausa source of some of these words they do not appear to reflect the tones of the original Hausa, suggesting that they were borrowed indirectly via neighbouring languages. The word for ‘angel’ has retained the morphology of its Hausa plural, unlike other loanwords. Other languages in the region, such as Hyam also show this same conservation of a Hausa plural in the word for angel.

Many of the trisyllabic alternations show evidence of initial syllable reduplication (see Type II below). Usually these exhibit an additional syllable in the plural, but in this case the tone alternation suggests that the plural was re-analysed as a singular and then a tone-plural formed. The case of *tətələ* ‘lamp’ is interesting because it must derive from Hausa *fitila*. The *fi-* element was presumably analysed as a diminutive prefix (see Type V) and deleted, and then a reduplicated plural generated through a regular process. However, the reduplicated plural then became incorporated in the stem in turn generating the synchronic forms noted above.

Type II nouns: initial syllable reduplication

A pattern familiar from other Plateau languages in this region is the full or partial reduplication of the first syllable of the stem. Ningye, Ninzo, Fyem and Hasha all show this pattern in varying degrees, with Hasha a case where all nouns and verbs form plurals in this way. The probable source of this strategy is the Chadic languages with which Plateau has interacted for a long period, but reduplication rules have become generalised in Plateau languages no longer directly in touch with Chadic languages of this type. As a percentage of the overall lexicon, first syllable reduplication is not all that common in Mada, but its occurrence on rather fundamental items of vocabulary does suggest its antiquity. Table 3 shows all the examples so far recorded, including cases where a second plural form is also in use;

Table 3. First syllable reduplication in Mada nouns

Pattern	s.	pl.	gloss
bə→bə	bār	bābār	farm shelter
bə→bə	bàr	bābàr	hat
be→bə	bě	be, bəbe	seed
bwə→bə	bwǎ	bābwə	pocket
cu→cu	cūn	màcùn, màcūcùn	chief
gbə→gbə	gbōn	gbāgbōn	short piece of wood
gbə→gbə	gbòn	gbāgbòn	family
gbri→gbə	gbrīn	màgbrīn, gbāgbrīn	spirit, photo, shadow, soul, mirror
gbu→gbu	gbù	gbūgbu	town, hill
gyə→gi	gyǎr	gigyər	mother
kpa→kpə	kpān	kpākpān	friend
kprɛ→kpə	kprē	kpākpɛ	lower leg
kri→kə	kri	kākri	yam
lɔ→lə	lɔn	mālālɔn	husband
ci→ci	màcī	mācīci	father-in-law
mbə→mbə	mbā	mbāmbā	wife, woman
mbə→mbə	mbār mpà	mbāmbār mpà	scar
mbe→mbə	mbē	mbāmbē	sprout
mbwa→mbu	mbwà zə	mbūmbwà zə	foot
mgbə→mə	mgban	māmgbān	armpit
mgbə→mə	mgbān	māmgbàn	wing
mgbə→mgbə	mgbà	mgbāmgbà	aroma
mgbi→mgbə	mgbīr	mgbāmgbir	bush patch
mgbə→mgbə	mgbō	mgbāgbō	rice and beans
mgbə→mgbə	mgbò	mgbāgbò	swamp, fadama
mgbə→mgbə	mgboren	mgbōmgbōren	word
mkpi→mkpə	mkpīr	mkpāmkpīr	hip
młə→mə	młà	māmłā	first born
młə→mə	młə	māməmłə	groping in darkness
mpə→mpə	mpā	mpāmpā	sore, wound
mpə→mpə	mpā	mpāmmpā	calabash
mpɛ→mpə	mpɛ	mpāmmpɛ	sheet of paper
mpu→mpu	mpù	mpūmpù	thigh
mpu→mpu	mpūr	mpūmpūr	fear
nci→nci	nci	ncīnci	traditional district
nji→nji	njī	njīnji	knife
njo→nju	njò	njūnjò	horn
nkə→nkə	nkōn	nkōn, nkōnkōn	road, way, door
nkə→kə	nkən	kānkən	elbow, ankle
nkyə→nkyə	nkyār	nkyānkýàr	group
nkyɛ→nkyɛ	nkyən	nkyēnnkyən	remaining part
ri→ri	rī	rīrī	day
te→tə	tè	te, tāte	father
tse→tse	tse	tsātsē	town

Where two forms are given in the plural column both are acceptable to speakers. The shaded items, bə-, can be subject to an alternative interpretation, the compounding of a pseudo-prefix meaning 'small object' (cf. Table 10).

This table may conflate two different phenomena, complete reduplication in monosyllables such as knife, district, woman, fly, part and thigh and partial reduplication where syllable copying is not exact. The small

number of examples makes these difficult to disaggregate. The great majority of reduplicated syllables begin with prenasalised consonants and labials dominate the remainder. Body parts and kinship terms dominate the semantics of reduplicated plurals although other terms occur. Notably, however, no animals form plurals in this way in contrast to tone-alternations. There are no obvious loanwords in the class of words showing initial syllable reduplication although this process seems to have occurred and then excluded by the adoption of a tone-alternation as a plural, as in the case of *tətələ* ‘lamp’ noted above.

It is clear that these pairings are not generated by morphological rules that admit of no exceptions; the differing results of reduplicating *nkɔ* suggest that historical explanations must be adduced to account for such variation. Despite this, most of the reduplications do follow a pattern, as the following rules show;

Rule 1. Where V_1 is schwa or a high vowel, the syllable is reduplicated precisely

Rule 2. All other vowels are reduplicated as schwa, except where C_1 is palatalised

Rule 3. Rhoticisation, labialisation, palatalisation and fricativisation are ignored in reduplication where Rule 1 has not been applied

Some words suggest ‘fossil’ reduplication, i.e. a previously reduplicated form has now been adapted as a tone-plural and reduplication is now unproductive. In this case, the plural must have been adopted as a base form and a singular created by analogy. The following table gives some examples;

bəbè	bəbè	tail
kəkə	kəkə	fowl
ləlān	ləlān	scorpion

Some trisyllabic tone-plurals seem to derive from a similar source.

A case which looks like segmentation by false analogy and consequent creation of a reduplicated form is the word for ‘sweet potato’, either *kyūnkyū* or *dankyū* (both singulars). *Dankyū* is apparently from Hausa *dankali*. The sweet potato is a recently introduced New World crop, so such a borrowing is very likely. *da-*, however, is an unlikely prefix in pre-Mada, but it may have been analysed as a generic prefix and deleted in order to form a reduplicated plural. With some exceptions, tubers do not have morphologically marked plurals in Mada, hence *kyūnkyū* no longer has a singular corresponding form.

Type III nouns: prefix addition

The most recent addition to the Mada repertoire of plural strategies is probably the *mə-* prefix. This appears to have two realisations, *mə̀-* and *mə̄-*. The low-tone form seems to have no strongly-defined semantic field (Table 4, Table 5), but mid-tone *mə̄-* is applied quite strictly to persons (Table 6, Table 7). The examples in these tables and in other sections show the prefix has been added, sometimes subsequently to other strategies, such as tone-raising or reduplication, providing evidence for its recent genesis.

Most nouns taking a *mə̀-* prefix conserve stem-tone (Table 4);

Table 4. Mada mə̀- prefixes where stem tone is conserved

bān	mə̀bān	law
gōn	mə̀gōn	back
gā	mə̀gā	shoulder
gbrīn	mə̀gbrīn, gbə̀gbrīn	spirit
jūjū	mə̀jūjū	hole
kpə	mə̀kpə	female agama lizard

However, a minority of nouns with *mə̀-* prefixes alter the stem-tone (Table 5);

Table 5. Mada mə̀- prefixes where stem tone is not conserved

cər	mə̀cər	stranger
do	mə̀dō	market
gbla	mə̀gblā	tribal mark
nzār	mə̀nzār	hoe
kōn	mə̀kōn	war
gyōn	mə̀gyōn	hare

In all these examples, except the words for ‘war’ and hoe, the stem tone falls one level.

Table 6 shows *mā-* prefixes with conserved stem-tone;

Table 6. Mada mā- prefixes where stem tone is conserved

brε	mābrε	grave
lōnggə	mālōnggə	enemy
m̄la	mām̄la	relation
nē	mānē	person
vānggā	mānggā	girl

and Table 7 the *mā-* prefix with altered stem-tone;

Table 7. Mada mā- prefixes where the stem tone alters

grě	māgre	aunt
krě	mākre	uncle
ywe	māywē	in-law

Table 6 and Table 7 illustrate the strong relationship between the mid-tone *mā-* prefix and person nouns. The great variability in stem-tones presumably reflects a wide range of different nominal affixes in pre-Mada.

This prefix may be present in the name of the people themselves, /**māda**/, a form which has no singular today and is invariant. However, earlier sources give these people the name ‘Yidda’, suggesting that in the early colonial period, /**māda**/ still alternated with a V- prefix, probably *i-*, that is now lost³. The persistence of such prefixes in the closely related Ninzo language provides some support for this hypothesis. The fixing of Mada as the name of the people may thus well be a phenomenon of the twentieth century.

Type IV nouns: person nouns acting as pseudo-prefixes

Type IV consists of person nouns or pronouns that alternate in front of stems, giving the appearance of prefixes. Indeed it has been frequently speculated that such systems are the origin of Niger-Congo alternating affix systems (see Williamson & Blench 2000). The most common example is *wān-/bān-*;

³ I am grateful to Norman Price for this suggestion

wān/bān

wāndò	bāndò	farmer
wānfà	bānfà	fool
wāngbò	bāngbò	Igbo person
wāngì	bāngì	thief
wānkè	bānkè	house owner
wānkpānnēn	bānkpānnēn	soldier, policeman
wānkwār	bānkwār	wizard
wānrèkī	bānrèkī	trader
wānwō	bānwō	blind man
wānywānan	bānywānan	butcher

This alternation exists only in compounds, as there are no corresponding isolated nouns synchronically meaning person. Wilson (2002) gives an example of what is evidently a similar process for Kuche, a related Ninzic language. A prefix *bān* is used to mark plurals of VCV kin terms, which she claims is a grammaticalised form of the old Class 2 affix and the preposition *nà* ‘with’. In the case of Mada, *wān* and *bān* can also function independently as relative pronouns, which suggests an alternative interpretation of the Kuche marker.

In the other example of such alternations, **vān** pl. **nywēn** ‘child’, is attested in isolation and is applied both to human and animal nouns;

vān/nywēn

(və)nzè	nywenzè	young man
vəncɛ	nywēnncɛ	bird
vəmbàn	nywēnmban	hawk
vərə	nywēnra	granary
vətò	nywēntò	squirrel

The nasalised vowel of **vān** [vã] is homorganic with the initial consonant of the stem that follows and thus assimilates or is deleted. Curiously, the nasalisation of **nywēn** [ɲwễ] is always conserved even when adjacent to a bilabial nasal. The variation of deletion of nasalisation in **vān** is quite surprising and a possible explanation is that it is being synchronically re-analysed as a diminutive prefix (see below), but that this process is still incomplete.

Type V nouns: diminutives acting as pseudo class-prefixes

Like Berom, Mada permits most nouns to take optional diminutives, obligatory in a few cases. The Berom prefix is *ke-*, so it is unlikely to be cognate with Mada *və-*, but the two are used in a very similar fashion. The origin of the Mada diminutive is derived from the word for ‘child’ as described in the previous section. The nasalisation of *vān* for child is deleted, and it has an allomorph *fə-*. Both allomorphs have the same plural, namely *nywēn*. Table 8 gives some examples of the distribution of these prefixes on syllable reduplicating nouns;

Table 8. Diminutive prefixes in Mada nouns

fə- Mada	Gloss	və- Mada	Gloss
bār	farm shelter	bār	hat
gbōn	short piece of wood	bě	seed
gbòn	family	gbù	town, hill
gbrīn	spirit	gyǎr	mother
kpān	friend	kprē	lower leg
mbā	wife, woman	lōn	husband
mbār mpà	scar	mbē	sprout
mgbān	armpit	mbwà zè	foot
mgbān	wing	mgbò	swamp, fadama
mgbō	rice and beans	mlà	first born
mgboren	word	mpō	calabash
mpā	sore, wound	mpù	thigh
mprē	sheet of paper	njò	horn
nci	traditional district	nkòn	road
njī	knife	tè	father
nkyen	remaining part		
tse	town		

There seems to be no easy way to predict which allomorph will be applied to which stem nor are these reflected in other areas of the concord system. Words which use the *wan/ban* alternation cannot also take the *və-* prefix.

The distinction between the *və-/fə-* prefix and the word for ‘child’ is illustrated by the fact that the word for child can take a diminutive prefix and that prefix is *fə-* not *və-*. Thus;

fəvèn nywèn small child

Occasionally the intersection of the two systems can produce pseudo-alternations. Thus *lón*, ‘man’, uses syllable reduplication of Type II to form a plural. However, the use of a diminutive in the singular creates an apparent alternation.

vəlón ləlón man

Suppletives

Suppletive plurals in Mada are quite rare. The only examples so far recorded are;

mbrē vē day
vèn nywèn child

A unique case is;

mələka mələkū angel

which replicates the Hausa plural alternation. This may well be a transitional form.

Nouns with no number marking

Many nouns in Mada have either no plurals, or are only rarely marked for number and the plural form is not known to many speakers. Examples of such nouns are given in Table 9;

Table 9. Mada nouns with no number marking

Mada	Gloss
bùkan	giant kingfisher
ci	front, forehead
cīncī	fly
cìta	African pepper
cūyò	tree sp.
dar	lead
dədən	grass sp.
dùdù	local box
gān	feast, party
gbāgbār	weevil

Broadly speaking, trees and grasses rarely have plurals, abstracts, borrowings and other rare cases. Insects are usually treated as inherently plural, although there are counter-examples;

gàr pl. gar army ant

4. The erosion of Mada noun-classes

As suggested earlier, Mada must have formerly had a number marking system of alternating V- and CV- prefixes, similar to those in Ninzo and Ce. This may have co-existed with initial syllable reduplication given that this is widespread in neighbouring Plateau languages of this region. Evidence from fossil reduplications (where a new prefix is added to a reduplicated stem) and its application to Hausa loanwords argues that until recently this process was both more widespread and productive.

A likely scenario for this process is as follows. The prefixes began to erode, creating initial floating tones or shifting the prefix tone rightward. This can be schematised as follows, where a low tone stands for the former prefix tone.

$$C\grave{V}.CVC \rightarrow C^{(l)}.CVC \rightarrow C\grave{V}C$$

The result was a stage where most nouns marked number by tone alternations. However, this may have created too much ambiguity, since nouns and verbs are structurally identical and verb TAM marking is also via tone. So new prefixes began to evolve, based on the grammaticalisation of nouns and unrelated to Niger-Congo to develop. A parallel process has been documented for the related Ce language. A cognate noun in Ce is the word for ‘death’ which still has prefixes.

Gloss	Ce		Mada	
	sg.	pl.	sg.	pl.
death	ì-kʊ	ə-kʊ	kyù	kyū

The incorporation of the ì- prefix created the labialisation of the stem as well as lowering the tone. In the plural, the rightwards movement of the schwa left no trace on the vowel and the mid-tone was maintained. The plural was also labialised by analogy with the singular.

Some prefixes are so transparent, such as those based on person nouns, that the output could be described as a noun-noun compound. The existence of others has to be deduced from comparison of a large body of nouns. The likely origin of the kī- prefix is discussed above under disyllables, and another richer example is the word *bě* pl. *be* means ‘seed’ and by extension ‘small thing’. It has become grammaticalised as a prefix applied to crops with small seeds and occasionally other small things such as ‘bullet’. Table 10 shows how this is applied to a variety of stems. Since *bě* has an existing tone-alternation, this is retained in plurals, and does not impact the tone of the following stem.

Table 10. Incorporated morphology in Mada nouns

Singular	Plural	Gloss
bě-		diminutive
bě	be, bəbe	seed
bedərō	—	millet
běkyèn	bekyèn	Lima beans
běki	bekī	seed
běkpū	bekpu	kernel of guinea corn
běmkpàn	bemkpàn	maize kernel
běncī	benci	acca cultivar
běncwē	bencwē	groundnut
běntə	bentə	beniseed, sesame
běntsu	béntsú	acca, fonio
běnzē	benzē	jumblebeads
běsān	bésān	cowpea
bětsàkā	bétsàkā	rice
bězǔ	bezu	bullet

Apart from grammaticalisation, borrowing may be another source for innovative prefixes. The Eggon language, spoken directly south of Mada, also has an eroded noun class system, and has begun to apply a ‘new’ prefix, *mō-*, as a generic plural marker for nouns. The Mada *mə-* prefix is spreading throughout the language, hence the co-occurrence in some words of two plurals, with and without *mə-*. *mə-* has been superimposed on other plurals, hence it is found prefixing both reduplicated and tone-plurals. Rather surprisingly it has been applied to many items of ‘fundamental’ vocabulary such as body parts.

5. Conclusion

Mada is a part of a group of which originally had a rich system of alternating affixes, which is partly retained in some related languages. These prefixes have been deleted, creating a system of tone-oppositions to mark number. However, perhaps due to the large number of homophones created, Mada is developing new or pseudo-prefixes developed from a variety of lexical sources. These have not been wholly absorbed, hence the presence of alternative plurals and multiple affixing. Mada is thus a good example of how rapidly morphological systems can become highly idiosyncratic in the context of a multilingual environment.

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