Microvariation in nominal plurality in Northern Masa

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ABSTRACT

This paper describes nominal plurality and examines microvariation in the marking of plural on nouns across three closely related Northern Masa languages, namely in Gizey, Masana, and Musey. These three languages use the same set of nominal plural exponents: **-Vj**, **-ii/-ij**, and **-Vgi** which are reflexes of Proto-Chadic ***-ai**, ***-i** and ***-aki**, respectively (NEWMAN 1990). In addition to suffixal formation, the three languages have restricted sets of suppletive plural nouns in which two further formatives can be identified, namely **-n** and **-u**. Finally, traces of an erstwhile vowel internal ablaut can be observed in a few vestigial plurals. Although these languages constitute a more or less homogeneous lectal continuum, they have developed different plural assignment systems ranging from fully morphological (e.g., Masana) to fully phonological (e.g., Gizey). The three languages also differ in their potential for number-marking (numerality). Generally, nominal plurality seems to be on the decline.

KEY WORDS: microvariation, plural assignment systems, nominal plurality, Masa, numerality

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1. Introduction[1, 2]

We know from available descriptions of Northern Masa languages (e.g., CAÏTUCOLI 1983, MELIS 1999, OUSMANOU 2007, DE DOMINICIS 2008, DAVOUNOUMBI 2017) that reflexes of reconstructed Proto-Chadic plural suffixal formatives ***-ai**, ***-i** and ***-aki** (NEWMAN 1990) are well attested in that subbranch. What we lack, however, is an understanding of the productivity of nominal plural formation in general, and of the nature of variation pertaining to this inflectional process in this subbranch. The sources just mentioned do not provide any quantitative indication of the productivity of nominal plural marking. MELIS (1999: 94) only signals the existence of a 'limited number' ('un nombre limité', our translation) of nouns which use a plural suffix, without any quantitative backing. The question of the productivity of plural marking is nonetheless important, especially given the pervasive trend away from morphological marking of grammatical categories within Chadic. For example, some Chadic languages (e.g., the ones under study) have lost morphological marking of gender although one can confidently assume that they had some means of indicating gender morphologically, as part of their Proto-Chadic and Afroasiatic inheritance (NEWMAN 2006). Also, while many contemporary Chadic languages still maintain rich plural marking systems, the erosion of this inflectional process in some branches (e.g., in West Chadic) has been reported (see BLENCH 2021). In West Chadic, the decrease of plural marking correlates to an increase of feminization i.e., the assignment of feminine gender to erstwhile masculine nouns (BALDI and LEGER 2011). The facts we present strongly suggest that the Northern Masa languages examined experience an erosion of number marking in nominals. However, there is no evidence to suggest that this erosion correlates to the feminization of nouns.

Generally, comparative studies highlighting microvariation are rare within Masa. One major exception is MELIS (2019) whose aim, however, has been to provide evidence that Gizey is a distinct language within Masa. Also, MELIS (2019) chiefly focusses on Masana and Gizey phonology.

The present paper addresses these research gaps by fully describing and comparing the systems underlying nominal plurality in three major languages of the subbranch, namely in Gizey, Masana, and Musey. We use four parameters to compare nominal plurality in these languages: a) numerality, b) inventory of markers, c) assignment systems, and d) phonological processes fed by plural

marking. These parameters are discussed under §2, §3, §4, and §5, respectively. By 'numerality' we mean, the ability for nouns to mark number morphologically. It appears from examining this parameter that plural marking is on the decline, especially in Masana where only a few nouns mark plural morphologically.

Gizey, Masana, and Musey are part of a language continuum spanning Cameroon and Chad. MELIS (1999, 2006, 2019) classifies the three languages under the Northern subgroup of Masa (Chadic), which is to be distinguished from the Southern subgroup composed of Zimé, Lame, Ngedé, and Mesmé. The Northern subgroup also involves Ham, the Marba-Lew-Monogoy lectal continuum, and Zumaya. MELIS (2006b) has argued for classifying the highly endangered Ham as a distinct language within Masa. Zumaya is now an extinct language (SEIGNOBOS and TOURNEUX 2002, MELIS 2019).

The status of Gizey as a separate language, distinct from Masana, has also been argued for by MELIS (2019). NEWMAN (2013) also lists Gizey as a separate language within Masa. On the contrary, sources like BARRETEAU and DIEU (2005) describe Gizey as a western dialect of Masana. BARRETEAU and DIEU (2005) also include three Central (Baygana, Gagana, and Kayamna) and one Eastern (Gumayna) Masana dialects. OUSMANOU (2007) lists Gizey as a dialect of Masana along with the Yagwa, Muzuk, Walya, Buguɗum, Domo, and Wina varieties. MELIS (1999, 2006a) counts yet another Masana dialect, Harra, spoken in Chad, south of Bongor.

While the nominal plurality facts examined here do not permit to ascertain the place of Gizey within Masa, one can observe some micro-level morphological variation which may provide additional support to MELIS' (2019) claim that Gizey and Masana constitute different languages.

Musey has two main dialect groups: **vùn kúr vòò=na** 'mouth interior house=ART' – 'interior language'; and **vùn ngòò=na** 'mouth bush=ART' – 'bush/exterior language' (BERTONI 2018). These dialect groups are spoken in Chad. In Cameroon, Musey is represented by the Pee variety, which is reportedly influenced by Masana (BERTONI 2018).

Gizey, Masana, and Musey have very little inflectional morphology. Gender is not marked morphologically. However, with the exception of the ones denoting mass, nouns have gender; and nouns distribute according to whether they have variable or inherent gender. Nouns with variable gender denote animates and count inanimates. Nouns that mark plural generally have variable gender. Nouns with inherent (fixed) gender, for their part, generally denote inanimates. These nouns may have fixed feminine gender if they derive from verbs (state/action

nominalizations) or if they denote time divisions, body parts, meteorological phenomena, and some celestial bodies. Nouns denoting mass have plural morphosyntax i.e., their agreement targets show plural marking. Generally, in Chadic, "[p]lurals represent a third category that is impervious to gender" (Newman 2006: 194).

As for number, only plural is marked; and morphological marking of plural only concerns some nouns. Thus, the three languages contain a considerable number of transnumeral nouns i.e., nouns maintaining the same form irrespective of whether they denote a singular or plural referent. There are also nouns which do not take part in the number system. At this stage, we cannot accurately predict number marking and transnumeral nouns, however, there is a trend concerning which nouns are excluded from the number system. These semantic trends are discussed under §2. It seems there is a connection between gender and exclusion from the number system.

For nouns that mark plural morphologically, plurality is expressed via suffixal formation. A restricted set of nouns have dedicated suppletive plurals, some of which may further admit a plural suffix. When this happens, there are two additional formatives which show up: **-u**, and **-n** (Proto-Chadic ***-a**w and ***-n-?**). The **-n** formative behaves like a morphological separator occurring between a plural stem and an additional plural suffix in cases of double plural marking. Both formatives are discussed under §3.

The primary data used for this paper were collected as part of on-going descriptions of the languages under study, by the authors. Secondary data were extracted from existing literature: Melis (1999, 2006) and Ousmanou (2007) for Masana; Ajello and Melis (2008) for Gizey; and Davounoumbi (2017) and Shryock (n.d.) for Musey. Material extracted from these sources is included with appropriate references.

2. Numerality

We use the term 'numerality' in this paper to refer to the ability for a category to express number values morphologically. For the purpose of this paper, we distinguish between nouns that are involved in the number system and nouns that are not. This distinction is relevant because, on the one hand, there are nouns involved in the number system that have not retained a morphological means for expressing plural, and, on the other hand, there are nouns which do not mark plural morphologically only from being excluded from the number

system. While both types do not have overt morphological marking, they exhibit different morphosyntactic behaviour. The main criterion for distinguishing between both types is agreement (see CORBETT 2000) i.e., the ability for given nouns to impose the expression of plural on modifiers or other interrelated clausal constituents. Nouns involved in the number system while being transnumeral can trigger singular or plural (two agreement values) on targets. Nouns excluded from the number system, by contrast, can trigger only one value i.e., either only singular or only plural. Nouns excluded from the number system are of three kinds: a) nouns denoting objects considered as being unique (e.g., celestial bodies, time divisions), b) gerundial nouns i.e., action/state nominalisations, and c) nouns conceived as being inherently plural.

The first two sets i.e., nouns denoting objects considered as being unique (1) and gerundial nouns (2) constantly trigger singular agreement. All such nouns have inherent feminine gender.[3]

(1) Masana (MELIS 2006a)
   a. bàlák   'Orion'
   b. fàt   'Sun'
   c. tìl   'Moon'
   d. fàlèj   'day'
   e. vìl(ì)dí   'evening'

(2) Gizey
   a. mìt=tà   'dying'
   b. kùl=dà   'stealing'
   c. ɓɔ̀=dà   'growing'
   d. mùt=tà   'eating'
   e. hàt=tà   'teaching'
   f. ŋɔ̀k=kà   'becoming thin'

Nouns denoting body parts also tend to be excluded from the number system. Interestingly, these nouns also have inherent feminine gender. However, there seems to be variation amongst the languages as to whether nouns denoting body parts are included in the number system or not. For example, while the Masana and Musey body part names in Table 1 are excluded from their number systems, in Gizey, they mark plural morphologically (e.g., gàj > gìj-ɛ́j 'foot' > 'feet').

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[3] However, related word forms with the opposite gender may occur to capture a related reality. For example, the word tìl (tìl=dà 'moon=ART.SF) is inherently feminine when it refers to the Moon and it is inherently masculine (tìl=là 'moon=ART.SM) when it refers to the lunar month.

Masana	Musey	Gloss
ìr	íí	'eye(s)'
hǜm	húm	'ear(s)
sìj	síí	'tooth/teeth'
ɓām	kō	'hand(s)
gâj	gáj	'foot/feet'
tǐrèk	ʧívìɗ	'nail(s)'
hūʔ	húɗ	'ball(s)
mîr	pō	'breast(s)

Table 1 – Eight Masana and Musey nouns denoting body parts

The last set of nouns excluded from the number system are nouns denoting mass (e.g., Gizey: **wú** 'millet', **sùm** 'beer'). These nouns are inherently plural as they constantly impose plural on agreement target. For example, in (3) below, the plural suppletive verb **ʧúk** 'to throw.PL' is required for the structure to be grammatical. With a singular object NP, the verb would have been **gì** 'to throw.SG'.

(3) ʧùg=ùn   wú=n   ʧūk
     throw.PL.N[4]=1S   millet=ART.PL   throw.PFV
     'Throw me some millet'

There is also some variation amongst the languages under study as to which nouns have inherent plural number or not. For example, the Masana nouns in (4) all have inherent plural number. Such nouns generally denote objects with a high degree of plasticity, and which, as a result, create an impression of plurality.

(4) a. **gùj**   'snake (s)'
     b. **zèw**   'rope (s)'
     c. **lúwán**   'fishing net(s)'
     d. **ɬígár**   'cloth(es)'
     e. **bìrìm**   'bag(s)'

Evidence that these nouns have plural interpretation comes from the fact that agreement targets generally have to occur in their plural form. Observe in the Masana example in (5) that only a plural demonstrative is allowed after **gùj** 'snake'.

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[4] N= Neutral aspect used in the imperative.

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(5) **gùj-n**   **lākŋí/*wānní**
     snake-ART   DEM.PL/*S
     'This is a snake'

However, in Gizey and Musey, most of these nouns are involved in the number system, and some even express number morphologically.

	GIZEY	MUSEY
'snake (s)'	gùwj-íj	bòndɔ̀r-íí
'rope (s)'	zìgèw-ɛ́j	zéw-íí
'fishing net(s)'	bìj-ɛ́j	báj
'cloth(es)'	sàkr-ɛ́j	bāráw-íí
'bag(s)'	bìrìm-íj	bìrìm-íí

Table 2 – Gizey and Musey plural marking nouns which are excluded from the number system in Masana

We compared the productivity of plural number marking in Gizey, Masana, and Musey with a list of 100 simple nouns. Chart 1[5] below shows the proportion of nouns which do not mark plural and that of number marking nouns. The red slots in each column represent the proportion of non-marking nouns, and the blue slots the proportion of number marking nouns. The prediction made by this chart is that there are more nouns in Gizey and Musey which mark plural than there are in Masana.
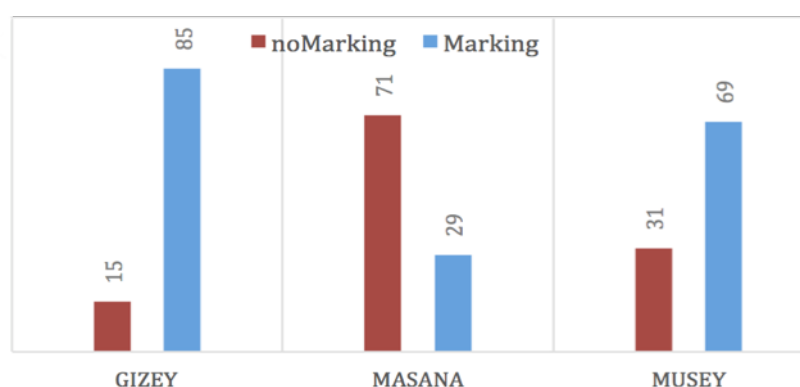

Chart 1 – Proportion of transnumeral vs number marking (morphological) nouns in Gizey, Masana, and Musey, 100 nouns compared

[5] We used convenience sampling to draw comparable data from wordlists used by the authors. When any language used a compound noun for a concept, (with potential partial marking on one of the constituents), that concept was removed from the count. We also maintained word forms known to be excluded from number marking in order to have a general picture.

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Table 3 below provides some concrete data illustrating variation in number marking amongst nouns included in the number system. In this table, Musey and Gizey have the most forms with plural formatives (**-ɛ́j, -íj, -íí,** and **-gí**). Most non-marking nouns come from Masana. As can be seen, non-marking nouns in Masana may express plural morphologically in Gizey and Musey as with **kỳw-ɛ́j/kɩ̀w-ɛ́j** (Gizey) **- kēw** (Masana) **-ŋgèw-íí** (Musey).

	GIZEY	MASANA	MUSEY
'knives'	kỳw-ɛ́j/kɩ̀w-ɛ́j	kēw	ŋgèw-íí
'hippos'	gárìjàm-ɛ́j	gàrjàm	gàrjàm-íi
'okras'	zùlù	zùlò	dlòònò-gí
'feathers'	ɟɩ̀md-íj	ɟɩ̀mìt	ɬímíɗ
'smiths'	t͡ʃáf	t͡ʃāf	t͡ʃàf-íí

Table 3 – five words illustrating variation in plural marking in Gizey, Masana, and Musey

Based on the figures computed for Chart 1, it seems neither the absence of marking, nor overt marking can generalise as the rule or the exception for Masana and Musey. In line with the *Tolerance Principle* (SCHULER et al. 2021), a rule R generalises if the number of exceptions to R does not exceed the quotient of $N/\ln N$, where N stands for the number of words in a given category and $\ln N$, the natural log of N. For the 100 nouns computed, the number of exceptions should not exceed 21.7 items (100/ln101). In Gizey, if one considers number marking to be the rule, then the number of exceptions does not surpass 21.7. This implies that learners of Gizey will straightforwardly learn only a few exceptions while forming plurals productively via suffixation. This does not seem to work for Masana and Musey where, whether one considers absence of marking or overt marking as the rule, the number of exceptions exceeds 21.7. However, the tendency in Musey is clearly towards number marking, while it is the opposite in Masana.

The relatively important number of transnumeral nouns in the dataset, especially in the Masana data may be due to a general decline of overt morphological number marking on nouns, which may have started at an early diachronic stage (Proto-Masa). The presence in Masa of reflexes of reconstructed plural suffixes is clear evidence that Masa inherited at least one plural marking strategy (suffixation) from Proto-Chadic. However, the fact that languages like Gizey, Masana and Musey contain a high amount of transnumeral nouns, while other languages like Pévé simply lack morphological means for expressing singular/plural distinction (SHAY 2019) may be an indication that an erosion of number marking occurred within Masa. However, reports of a similar

morphological loss have been made for West Chadic (BLENCH 2021), which suggests that the decline started at an even earlier stage, namely in Chadic; unless one thinks of it as having emerged independently in different branches and geographical areas.

In the Masa languages under study, a number of changes affecting the morphology of number marking seem to have occurred only recently. In Masana for example, as Antonio Melis has pointed out (personal communication), there are plural inflections which are now obsolete. For example, the suppletive form fɔ́k 'caprinae' is now used as plural for fìù although it had the more complex form fúk-ú-n-ɛ́j as noted in the 70s in grammar notes by Jean Goulard. The complex form fúk-ú-n-ɛ́j, still sporadically attested, combines several markings, namely, the suppletive stem fúk, the formatives -u and -n, and finally, the "regular" suffixal marking -ɛ́j. Additional examples with eroded plural marking in Masana, i.e., present-day transnumeral nouns include hùrùm < *hùrùm-áj 'crocodile(s)', bàlàk < *bàlàk-áj 'shed(s)', tùlùm < *tùlùm-áj 'ficus sycomorus' (Antonio Melis, personal communication). Other changes in Masana involve the progressive abandonment of plural forms with -gáj, which productively suffixed on stems ending with an open syllable; and the loss of loan plural formation with -ga-n-ɛj, in favour of the reduced form with allomorphs of –aj (6).

(6) Masana (Melis, personal communication)
    a. **per** 'father'   **per-ga-n-ej** < **per-ije**   'fathers'
    b. **ser** 'nun'   **ser-ga-n-ej** < **ser-ije**   'nuns'

3. Inventory of markers

Gizey, Masana, and Musey do not use consonant gemination and reduplication as methods for forming nominal plurals, although these are well attested across Chadic. This somehow confirms NEWMAN's (2006) hypothesis that gemination and reduplication constitute recent developments within Chadic. One other strategy found pervasively across Chadic, but which is absent from the languages under study is 'a-infixation'. However, the ablaut mechanisms generally associated with 'a-infixation' also manifest in some vestigial forms. Thus, the primary means for forming nominal plurals in Gizey, Masana, and Musey is suffixation. Vowel mutation appears only scarcely.

As concerns suffixation, number marking nouns in these languages generally distribute in two classes, except for the Yagwa variety (OUSMANOU 2007) of Masana which has only one class.

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	MUSEY	GIZEY	MASANA (GUMAY & HARRA)	MASANA (YAGWA)
Class 1	-ii/-i	-ij	-ij	-aj
Class 2	-Vgi	-V$^{[-high]}$j	-aj	

Table 4 – Plural markers used in Musey, Gizey, and Masana

These markers have phonologically conditioned and dialectal variants.

In Gizey, the plural marker -V$^{[-high]}$j has two surface forms, -ɛj and -ɔj, resulting from harmony in roundness (§5).

In Masana, the marker -aj has surface forms -aj, -ej, and -oj resulting from harmony. These surface forms also alternate with -ja, -je, and -jo, respectively. The latter forms result from the application of metathesis in the vicinity of sonorants **n, l,** and **r** (§5). Finally, there is dialectal variation between -aj, -ej, and -ɛj.

It is not entirely clear whether the short -i marker occurring in Musey plurals found in SHRYOCK (n.d.) represents an orthographic choice by the author or an attested variant. The Pee variety spoken in Cameroon uses a long -ii. The marker -Vgi, for its part, alternates with -gi. The alternate form -gi results from the resolution of hiatus when -Vgi follows a vowel.

The markers identified for these languages correspond to markers which are attested across Chadic and which have been reconstructed for Proto-Chadic (NEWMAN 1990). Table 5 below provides the corresponding Proto-Chadic forms and their Northern Masa reflexes.

FORM	PROTO-CHADIC (NEWMAN 1990)
-ii/-i; -ij	*-i
-V$^{[-high]}$j, -aj	*-ai/*aj
-Vgi	*-aki

Table 5 – Northern Masa plural markers and reconstructed Proto-Chadic forms

There is an additional formative, -n, which appears in suppletive plurals admitting double marking (suppletion + suffixation). This formative can be seen in forms for 'dog' and 'goat' under Table 6 which provides examples of suppletive plurals for the three languages.[6]

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[6] Generally, suppletive plurals are identical across the three languages with a few exceptions coming from Musey. Observe in Table 6 that while Gizey and Masana use suppletive plurals for

	GIZEY		MASANA		MUSEY	
	SG	PL	SG	PL	SG	PL
'person'	sì	sūmū	sà	sūmū	sā	súú
'woman'	tʃî	ʔúrbɔ́j	tʃà	bɔ́j	tʃā	bójó-gíí
'thing'	vù	ɬúk-ɔ́j	và	ɬɛ́	vā	ɬē
'cow'	pūt	lúw-ɛ́j	pút	lúw-ɛ́j	mbūɬ	mbūɬ-íí
'dog'	dìj	dúːr-ɛ́j/dúːr-*n*-ɛ́j	dīj	dùr-*n*-ɛ́j/dìr-*n*-ɛ́j	dì	dík-*n*-íí
'goat'	fìù	fúk-ɔ́j/fɔ́k-ɔ́j/fɔ́k-*n*-ɛ́j	fìù	fɔ́k/fùg-ù-*n*-ɛ́j	fìù	fìù-*n*-íí
'fowl'	ɬɛ̄k	ɬàk-ŋ-ɛ́j	ɬèk	ɬùk-ù-n-ɛ́j/ɬìgì-n-ɛ́j	ɬék	ɬék-n-íí

Table 6 – Some suppletive plurals for Gizey, Masana, and Musey

We analyse **-n**, not as a plural marker, but rather, as a kind of morphological separator occurring between two methods for expressing plurality, namely between suppletion and suffixation. Note that, except for Musey, **-n** appears only in such forms with double marking. However, there are forms like those for 'cows' and 'things' which do not show **-n** while admitting double marking. It is worth also noting that NEWMAN (1990) describes an identical form for Proto-Chadic which has reflexes in the West, East, and Biu-Mandara branches, but not in Masa. It is not clear how related the two forms are.

There is a further formative, **-u**, which shows up also only in a few suppletive plurals. In Table 6, it can be seen in the forms **fùg-*ù*-n-ɛ́j** '*caprinae*' and **ɬùk-*ù*-n-ɛ́j** 'fowls'. Other examples include:

(7) a. Masana **dò** **dù-g[7]-*ù*-n-éy[8]** 'multiparous' (MELIS 2006a)
    b. Gizey **gùnèj** **gòny-*ù*-g-èj** 'zeroparous' (AJELLO and MELIS 2008)

It is not clear whether the Gizey, Masana, and Musey word forms for 'people' (8) can also be analysed as containing that formative.

(8) a. Gizey **sì** **sūm-ū**
    b. Masana **sà** **sūm-ū**
    c. Musey **sā** **sū-ū**

Like **-n**, the **-u** formative is never attested as the sole plurality index; it always occurs as part of a complex plural marking which includes suppletion and

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'goats', 'fowls', and 'cows', Musey rather uses regular plural marking as **fìù-n-íí**, **ɬék-n-íí**, and **mbūɬ-íí**, respectively.

[7] The sound **-g** occurring in these examples generally occurs when suffixal plural markers attach to stems ending with an open syllable.

[8] **dù** and **dòknogéj** in Gizey .

suffixal formation. **-u** clearly appears as a vestigial formative, given its extreme rarity. SOUAG (2021) also describes a plural suffix **-u** in Mubic languages (East Chadic) which shows up in a number of plural relics. In Mubi, the phonological effects of **-u** suffixation is quite evocative of an erstwhile morphological labial prosody which got fully realised as a final vowel.[9] The term 'prosody' is used in Chadic linguistics to refer to a suprasegmental unit (phonological or morphemic) assumed to cause the labialization (rounding) or palatalisation (fronting) of segments within a word (ROBERTS 2001, 2007; GRAVINA 2014). Observe in the following Mubi plurals that the suffixation of **-u** triggers the labialisation of unround vowels as can be expected from a labial prosody. Of course, one need not resort specifically to prosodies to account for these Mubi data which could simply be analysed as 'regular' metaphony, i.e. vowel quality changes imparted by a neighbouring segment.

SG	PL	GLOSS
fùbáàg-ò	fùbòog-ú	'blind'
mársíy-ò	mòrs-ù	'lazy'
sùwàng-ót	sùwòong-ú	'Arab Shuwa'
sìɲàar-ó	sìɲoor-ú	'cat'
gàayìm-ó	gòoyùm-ú	'wild cat'
sògòryàk	sògòryùg-ú	'squirrel'

Table 7 – Plural formation with **-u** suffix in Mubi (data from SOUAG 2021: 254)

Finally, there are words which seem to form their plural via vowel mutation, i.e. unconditioned vowel quality change. The effect of this mutation process is raising, as can be seen from the following examples.

(9) a. ŋól ŋúl 'elder/s'
     b. gòr gùr(u) 'child/ren'

Note that this raising process is to be distinguished from the one triggered by the suffixation of markers containing **-j**, which is discussed in detail under §5. Here too, this formation is rare and is probably a Proto-Chadic retention.

The word for 'child' in (9) above, gòr/gòr, can actually be pluralised as gùr(ù) (Gizey)/gùrò (Masana) or gùr-éj/-éj 'children'. However, both plural forms have distinct interpretations and morphosyntactic behaviour. The form using suffixal formation (gùr-éj/-éj 'children') patterns with collective plurals. Collective plurals denote groups consisting of at least two members. These nouns have a split agreement system whereby they select singular definite (enclitic) articles while

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[9] Diachronic segmental realisations of prosodies are not uncommon (see Gravina 2014).

also requiring plural agreement on other targets like pronouns. Observe in (10) that the collective nouns (from Masana) select a singular definite article instead of the expected plural =na. However, in (11), note that only a coreferential plural pronoun is admitted in that construction. As for the form using vowel mutation, it has full plural morphosyntax and semantics i.e., it imposes plural on all agreement targets and does not refer to a group taken as forming a single unit as is the case with collectives.

(10) Masana
   a. **kém=bā/*mā**   'group of children'
   b. **ŋòn-áj=dā/*nā**   'twins'
      ŋùlò=dā/*nā   'group of great/important people'

(11) Masana
   <u>gùr-ɛ́j=tā</u>   *nígíj*   ká   ŋàà   sū
   <u>children=ART.SF</u> 2PL   EXIST   good   Q
   'Children, are you okay?'

4. Assignment systems

The languages under study have different assignment systems for the set of suffixal formatives discussed previously.

In Musey, the criterion for assigning plural markers is formal; it refers to the nature of the final syllable of the noun; and specifically, to whether it is open or closed. The marker **-Vgi** is used with open syllables and **-ii/-i** with closed syllables. The V position of **-Vgi** is filled by the last stem vowel. Illustrations for each of these markers are provided below.

(12) a.   mūl   mūl-íí   'chief'
     b.   ŋgèw   ŋgèw-íí   'knife'
     c.   bāráw   bāráw-íí   'cloth'
     d.   tōgōlōm   tōgōlōm-íí   'flute'
     e   fūl   fūl-íí   'spirit'
     f.   fièdèw   fièdèw-íí   'necklace'

(13) a.   ʤìʤì   ʤìʤì-gí   'African locust beans'
     b.   óóhóó   óóhóó-gí   'boy'
     c.   màtàwì   màtàwì-gí   'girl'
     d.   gàmlà   gàmlà-gí   'ram'
     e   dlòònò   dlòònò-gí   'okra'
     f.   mbòjmò   mbòjmò-gí   'bastard'

The **-Vgi** formative feeds hiatus, which is resolved in Musey by deleting its V_1. Thus, a form like **màtàwì-gì** 'girls' has a previous underlying shape **màtàwì-ìgì** in

which the final vowel of the noun spreads unto the empty vowel slot of the plural marker. Subsequently, this vowel is deleted to produce the surface form in (13).

Evidence that this plural marker has an underlying empty V-slot comes from words like those below which form their plural in the two Musey classes. It can be seen from the Plural 2 column that an agreeing vowel intervenes between the noun and the plural marker. The parentheses in the Plural 2 column represent the fact that some varieties of Musey (especially in Cameroon) delete that vowel.

SG	PL 1	PL 2	GLOSS
ŋgèw	ŋgèw-íí	ŋgèw-(è)gí	'knife'
mbìrwìn	mbìrwìn-íí	mbìrwìn-(ì)gí	'whirlwind'
ŋgùs	ŋgùs-íí	ŋgùs-(ù)gí	'tree'
sēēsēlēw	sēēsēlēw-íí	sēēsēlēw-(ē)gí	'swing'

Table 8 – Musey nouns admitting two plural markers

We also analyse the unexpected formation in **-Vgi** of the nouns in Table 8 to be a case of extension i.e., the plural marker, which is originally only used with nouns ending with an open syllable, is now being extended to a few nouns not meeting that requirement. This partly explains why nouns having two plural forms are limited in number. The triggering mechanism of this extension is unknown at this stage.

In Gizey, the assignment system is formal, however, it is different from what obtains in Musey. As indicated previously, Gizey has two plural formatives: **-ij** and **-V$^{[-high]}$j**. The criterion retained in Gizey is noun root vowel (or V_1, specifically) aperture. **-ij** is selected by nouns with [+high] V_1 (14) and **-V$^{[-high]}$j** is selected by nouns with [-high] V_1 (15).

(14) a. mùl   mùl-íj   'chief'
   b. fùl   fùl-íj   'spirit'
   c. dìf   dìf-íj   'necklace'
   d. sìnìl   sìnìl-íj   'tongue'
   e. nìrwìn   nìrwìn-íj   'whirlwind'

(15) a. dèl   dìl-ɛ́j   'vagina'
   b. bàk   bɨ̀k-ɛ́j   'skin/leather'
   c. màt   màt-íj/mɨ̀t-ɛ́j   'evil spirit'
   d. ŋɔ̄t   ŋùt-ɔ́j   'calabash'
   e. fìù   fɔ́k-ɔ́j/fúk-ɔ́j   'goat'

The surface high vowels in the plural forms in (15) result from an active metaphony rule in Gizey which raises root V_1 when roots are combined with suffixes containing the palatal /-j/.

In the Gumay and Harra varieties of Masana described by MELIS (1999), morphological marking of plural has semantic underpinnings. The marker **-ij** is generally used with nouns denoting kin (16), while **-aj** is used elsewhere as can be seen under examples (17)-(18) culled from MELIS (1999). As already pointed out, **-aj** may surface as **-aj** or **-ej**.

(16) a. sùgòl   sùgòl-íj   'ally'
     b. nàsú   nòs-íj   'uncle'
     c. tànà   tàn-íj   'brother-in-law'
     d. ɓùsú   ɓùs-íj   'brother/sister'
     e   gòrbú   gùrób-íj   'half-brother'
     f. kùnò   kùn-íj   'in law'

(17) a. gàwlàŋ   gàwlàŋ-éj   'prostitute'
     b. tʃèɗ   tʃèɗ-éj   'axe'
     c. tʃùt   tʃùt-éj   '*acacia albida*'
     d. dùt   dùt-éj   'calabash'
     e   lùm   lùm-éj/lùm-áj   'canoe'
     f. ŋàl   ŋàl-éj   'sauce pottery'

(18) a. gòlòŋ   gòlòŋ-áj   'side-stream'
     b. ʤùf   ʤùf-áj   'husband'/'male'
     c. hùrùm   hùrùm-áj/Ø   'crocodile'
     d. bàlàk   bàlàk-áj/Ø   'shed'
     e   tùlùm   tùlùm-áj   'ficus sp'
     f. gúm   gúm-áj   'hoe'

In the Yagwa variety of Masana, there is just one marker with different surface forms that will be discussed in detail in the next section.

(19) a. gàwlàŋ   gàwlàŋ-áj   'prostitute'
     b. dùt   dùd-áj   'calabash'
     c. gùk   gùg-áj   'dove'
     d. ɬōk   ɬōg-ój   'elephant'
     e   gòlòŋ   gòlòŋ-ój   'river'
     f. vèt   vēt-éj   'hare'

The general parameters used in all three languages are summarised in Table 9 below.

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	Musey	Gizey	Masana (G/ɦ)	Masana (Y)
Class 1	**-ii/-i** elsewhere	**-ij** [+high] root V or V1	**-ij** kin	**-aj**
Class 2	**-Vgi** open syllable	**-V**[-high]**j** [-high] root V or V1	**-aj** elsewhere	
Parameter	syllable structure	vowel aperture	kin/non-kin	

Table 9 – Plural assignment parameters for Musey, Gizey, and Masana (Gumay, Harra, and Yagwa varieties)

5. Phonological processes fed by plural formation

Nominal pluralization triggers different phonological processes in the languages under study. These phonological processes apply with different degrees of systematicity. The most notable processes include: metaphony, vowel harmony, and metathesis.

We use the term *metaphony* to refer to the effects of a trigger segment onto a target vowel, resulting in quality change on the part of the target. In the languages under study, the suffixation of plural markers may trigger the rising of non-high first vowels (V_1) of the nominal root. In Gizey, this process is systematic; in Masana, it occurs only occasionally (on specific nouns e.g., súgól > súgúl-ój 'parents'). Metaphony is not attested in the Musey dataset. Some Gizey data is given under (20). The word for 'husband' is analysed as having the underlying form ʤɔ̀f, although it mostly occurs with a high vowel as ʤùf. This analysis in necessary to account for the fact that it selects a [-high] plural marker. It is not uncommon to come across the form ʤɔ̀f in spontaneous data.

(20) a. dɛ̀l   dìl-ɛ́j   'vagina'
     b. bàk   bɨ̀k-ɛ́j   'skin/leather'
     c. màt   màt-íj/mɨ̀t-ɛ́j   'evil spirit'
     d. ŋɔ̄t   ŋùt-ój   'calabash'
     e ɦù   fɔ́k-ój/fúk-ój   'goat'
     f. *ʤɔ̀f   ʤùv-ój   'husband'

Some vowel harmony phenomena occur in Gizey and Masana. In the Musey data, no such phenomena have been observed. In Gizey there is harmony in roundness: if the root V is [– round], the non-high marker surfaces as [-ɛj], if it is round, then the marker surfaces as [-ɔj]. This roundness harmony is formalised in (21) and exemplified with the data under (20) repeated as (22) below. Examples (22a-c) show agreement between the plural marker and [– round] root vowels; and (22d-f) show agreement in the [+ round] feature.

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(21) V [αround, – high] > V [αround, – high] / V [αround, – high] ___

(22) a. dèl   dìl-έj   'vagina'
      b. bàk   bɪ̀k-έj   'skin/leather'
      c. màt   màt-íj/mɪ̀t-έj   'evil spirit'
      d. ŋɔ̄t   ŋùt-ɔ́j   'calabash'
      e   fiù   fɔ́k-ɔ́j/fúk-ɔ́j   'goat'
      f. *ʤɔ̀f   ʤùv-ɔ́j   'husband'

In Masana, there is parasitic harmony: if the root V or V$_1$ is [– high] like the plural marker, then there is total harmony (23c-e). If V$_1$ is [+ high], then the default **-aj** is used (23a-b).

(23) a. dùt   dùd-áj   'calabash'
      b. gùk   gùg-áj   'dove'
      c. gòlòŋ   gòlòŋ-ój   'river'
      d. vèt   vēt-éj   'hare'
      e   gàwlàŋ   gàwlàŋ-áj   'prostitute'

The last process observed in our nominal pluralization datasets is metathesis and this occurs only in Masana. The segments /a/ and /j/ of the plural marker invert their positions when this marker is preceded by /l/, /r/, and /n/. The harmony properties of the vocalic segment /a/ are preserved i.e., it may surface as [a], [e], or [o] depending on the nature of the noun V$_1$. Resyllabification may require i-insertion, such that words like **mūljá** 'chiefs' surface as **mūlijá**.

(24) a. mūl + -aj   mūl-(ī)já   'chief'
      b. mār + -aj   mār-(ī)já   'old'
      c. múr + -aj   múr-(í)já   'wild animal'
      d. fér + -aj   fér-(í)jé   'attic'
      e   géń + -aj   gén-(í)je   'pitcher'
      f. rāj + -aj   ŋòr-(ì)jó   'sorcerer'

Variation in the application of these processes is summarised under Table 10 below.

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	GIZEY	MASANA	MUSEY
Metaphony	systematic	occasional	not applicable
Metathesis	not applicable	systematic: -aj > -(i)ja	not applicable
vowel harmony	applicable: αround harmony	applicable: total parasitic harmony	not applicable

Table 10 – Summary of variation in terms of phonological processes fed by nominal plurality

6. Conclusion

Gizey, Masana and Musey differ in their proportion of nouns marking number morphologically. Our datasets indicate there are more nouns marking plural morphologically in Gizey and Musey (in this order) than there are in Masana. Plural marking thus seems to be more eroded in Masana. Gizey, Masana and Musey have two underlying suffixal plural markers, except for the Yagwa variety of Masana which has only one. These markers are reflexes of Proto-Chadic markers attested across present-day Chadic languages (Newman 1990). Musey and Gizey use a formal system to assign nouns into different classes: Musey uses syllable structure (closed vs open final syllable) and Gizey vowel aperture (high vs non-high). The Gumay and Harra varieties of Masana use a semantic criterion (kin vs non-kin). In the non-kin class, there are two surface forms **-aj** and **-ej** relating to dialectal variation. In the Yagwa variety there is only one class and surface realizations of the plural marker depend on aperture and syllable structure. The languages also differ in the kinds of phonological processes fed by pluralization. Gizey pluralization systematically feeds metaphony, while this is only seen occasionally in Masana data. Both languages also exhibit vowel harmony processes, which however, produce different effects. Masana uses a metathesis rule which is seen neither in Gizey nor in Musey. Generally, the pluralization of nouns does not trigger important segmental changes in Musey.

Abbreviations

ART: article; DEM: demonstrative; EXIST: existential; F: feminine, G: Gumay variety of Masana; ɦ: Harra variety of Masana; IPFV: imperfective, N: neutral aspect, PFV: perfective; PL: plural; Q: question operator; S: singular; Y: Yagwa variety of Masana.

References

AJELLO, Roberto and Antonino MELIS (2008). *Dictionnaire gizey-français, suivi d'une liste lexicale français-gizey*, Pisa: Edizioni ETS.

BALDI, Sergio and Rudolf LEGER (2011). "Some diachronic observations on gender and number in Bole-Tangale languages", in Doris LÖHR and Ari AWAGANA (eds.), *Topics in Chadic linguistics VI. Comparative and descriptive studies*, Köln: Rüdiger Köppe, 23-31.

BARRETEAU, Daniel and Michel DIEU (2005). "Linguistique", in *Atlas de la province Extrême-Nord Cameroun*, Marseille: IRD Editions, 1-32.

BERTONI, Marco (2018). *La culture musey (Tchad). Naissance, mariage et funérailles*, Paris: L'Harmattan.

BLENCH, Roger (2021). "The erosion of number marking in West Chadic nominal", paper presented at the *10th World Congress of African Linguistics* (7 July 2021).

CAÏTUCOLI, Claude (1983). *Lexique masa (Tchad et Cameroun)*, Paris and Yaounde: ACCT-CERDOTOLA.

CORBETT, Greville G. (2000). *Number*, Cambridge: Cambridge University Press.

DAVOUNOUMBI, Pierre (2017). *Phonologie et morphologie du museyna parlé à Gobo (Extrême-Nord Cameroun)*, Maroua: Université de Maroua Mémoire de master 2.

DE DOMINICIS, Amedeo (2008). "Phonological Sketch of Gizey", *Studi Linguistici e Filologici Online* 6: 1-78.

GRAVINA, Richard (2014). *The phonology of Proto-Central Chadic : the reconstruction of the phonology and lexicon of Proto-Central Chadic, and the linguistic history of the Central Chadic languages*, Utrecht: Lot.

MELIS, Antonino (1999). *Description du Masa (Tchad): Phonologie, Syntaxe et Dictionnaire Encyclopédique*, PhD thesis, Université de Tours.

MELIS, Antonino (2006a). *Dictionnaire Masa-français: dialectes gumay et ḥaara (Tchad)*, Pisa: Edizioni Plus.

MELIS, Antonino (2006b). "Ham: une langue et une culture en danger de disparition (Tchad)", in Amedeo DE DOMINICIS (ed.), *Undescribed and Endangered Languages the Preservation of Linguistic Diversity*, Newcastle: Cambridge Scholars Press, 44-59.

MELIS, Antonino (2019). "Storia e identità linguistica", in Luigi GAFFURI, Antonino MELIS and Valerio PETRARCA (eds.), *Tessiture dell'identità. Lingua, cultura e territorio dei Gizey tra Camerun e Ciad*, Napoli: Liguori Editore, 43-104.

NEWMAN, Paul (1990). *Nominal and verbal plurality in Chadic*, Dordrecht: Foris.

NEWMAN, Paul (2006). "Comparative Chadic revisited", in Paul NEWMAN and Larry HYMAN (eds.), *West African linguistics: Papers in honor of Russell G. Schuh (Studies in African Linguistics Supplement 11)*, Columbus: Ohio State University, 188-202.

NEWMAN, Paul (2013). 2013. *The Chadic Language Family: Classification and Name Index*, Mega-Chad Research Network / Réseau Méga-Tchad, accessed on 21/8/2019, <http://www.megatchad.net/publications/Newman-2013-Chadic-Classification-and-Index.pdf>

OUSMANOU. 2007. *Phonologie lexicale du masa: dialecte yagua parlé au Cameroun*, Cameroun: Yaoundé I Mémoire de DEA.

ROBERTS, S. James. 2001. *Phonological features of Central chadic languages*, in Ngessimo MUTAKA and Beban Chumbow SAMY (eds.), *Research mate in African linguistics: focus on Cameroon*, 93-118. Köln: Rüdiger Köppe.

ROBERTS, S. James. 2007. "Palatalization and Labialization in Mawa (Eastern Chadic)", in Eva ROTHMALER (ed.), *Topics in Chadic Linguistics V* (Papers from the 4th Biennial International Colloquium on the Chadic Languages, Bayreuth, October 30–31, 2007), Köln: Rüdiger Köppe, 129-140.

SCHULER, Kathryn, Charles YANG and Elissa NEWPORT (2021). "Testing the Tolerance Principle: Children form productive rules when it is more computationally efficient", *PsyArXiv* (March 30), doi:10.31234/osf.io/utgds.

SEIGNOBOS, Christian and Henry TOURNEUX (2002). *Le Nord-Cameroun à travers ses mots: dictionaire des termes anciens et modernes*, Paris: IRD Editions & Karthala.

SHAY, Erin (2019). *A Grammar of Pévé*, Leiden: Brill.

SHRYOCK, Aaron. n.d. *A Dictionary of Musey*, accessed on 11/11/2021, <https://silo.tips/download/a-dictionary-of-musey>

SOUAG, Lameen (2021). "Pattern borrowing and hybridization in Mubi (East Chadic): The importance of congruence", *Word Structure* 14 (2): 246-270.