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Article

Nominal Number Marking in Nyangatom: An Eastern Nilotic Language

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Abstract

The Eastern Nilotic languages generally exhibit extremely complex number marking systems. Nyangatom, a member of the Teso-Turkana group, is not an exception. Although detailed descriptions are available for some of the Eastern Nilotic languages such as Turkana (Dimmendaal 1983) and Lopit (Moodie 2016), very little has been done on Nyangatom. The current study attempts to describe the nominal number marking system in Nyangatom and tries to contribute to the scanty descriptive literature on the Nyangatom variety spoken in Ethiopia. The number marking system in Nyangatom follows, more or less, the tripartite system of number marking involving singulative, plurative and replacement marking. Nyangatom has a rich inventory of singulative, plurative and replacement suffixes and the suffixes are extremely varied. Neither semantic nor morphophonemic criteria can predict the variation of the suffixes, which is further complicated by the ATR vowel harmony process taking place across morpheme boundaries. Based on phonotactic principles the current study attempts to postulate predictable patterns that could capture a large number of nouns. It is argued that the nominal number marking system becomes more transparent if the quantity of syllables within the nominal root structure is taken into account whereby the number of syllables within the root, to a large extent, determines the choice of a particular suffix in number marking.

1 Introduction

Nyangatom is spoken in the lower Omo valley, in the southwest corner of Ethiopia, specifically in South Omo Zone of the Southern Regional State. The speakers are estimated to be around 25,000 individuals (CSA 2008) inhabiting the lowland areas of the western bank of the Omo River north of Lake Turkana. Linguistically,

Nyangatom is classified as a member of the Teso-Turkana dialect cluster within the Eastern Nilotic group (Vossen 1982).

In the literature, Nyangatom has received very little attention and, as a result, there are few descriptive works published on the structure of the language. Some attempts include Tornay and Loteng (1994) a trilingual dictionary, Nyangatom-English-Amharic, focusing on Nyangatom culture and society. Dimmendaal (2007) and Kedanya and Schroder (2011) are brief and preliminary descriptions of the grammar of the language. Moges (2016) and (2017) are recent efforts made to describe some aspects of the phonology of the language. The present contribution is an attempt to contribute to the scanty descriptive literature by way of describing the nominal number marking system in Nyangatom.

The data presented in this paper have been elicited from native speakers in Jinka town over the course of three field trips in October and December 2020 and April 2021. The speakers are aged between 25 and 45 and live in Jinka town, the capital of the new Aari zonal administration, as well as in Turmi town. Data from previous field notes by the current author have also been used. In addition, the trilingual dictionary by Tornay and Loteng (1994) has been consulted on some cultural vocabulary.

2 The realization of number

The number marking system in Eastern Nilotic languages has been described by some scholars as rich and extremely complex to the point that it is difficult to reach generalizations that govern these systems. Regarding the system of number marking in Turkana, for instance, Heine (1980:48) stated that "the exact shape of a plural noun is unpredictable"; whereas for Maasai Tucker and Mpaayei (1955) noted that "there is only one safe rule for beginners, viz. learn the plural of each noun as you come to it". In his analysis of the number marking system and noun categorization in Nilo-Saharan languages, Dimmendaal (2000) commented that it has been difficult to establish what rules might govern the number marking systems in the Nilo-Saharan languages. Contrary to the statements made above, Dimmendaal (1983) is the only linguist who tried to reach a few generalizations on the number marking system of Turkana and argued that "there are a number of rules whereby the form of a number marker is predictable". He further noted that the system is morphologically based whereby number marking follows a tripartite system of marking singulative, plurative and both the singular and the plural (replacement).

Like the other Eastern Nilotic languages, Nyangatom displays the tripartite system involving singulative, plurative and replacement markings - an archaic system attested in Eastern Sudanic system (Dimmendaal 1983:223). The Nyangatom number marking system can accordingly be represented as follows:

Table 1: The tripartite system of number marking

System	**Singular (SG)**	**Plural (PL)**
Singulative	Marked	unmarked
Plurative	Unmarked	marked
Replacive	Marked	marked

The tripartite system presented in Table 1 above is similar to the pattern of number marking described by Dimmendaal (1983: 224; 2000: 214) which is also attested in many Nilo-Saharan languages. According to this three-way number marking system, singulative marking refers to a morphological marking in which the singular form of the noun is marked and the plural form is the base, and hence unmarked. Plurative marking is in which the singular noun is the unmarked base or root and the plural form has a morphological marker. Replacement marking is where the singular and the plural forms have a morphological marker wherein the base does not specified for number and is not exist as a word (Dimmendaal 1983: 224; Corbett 2000: 156).

In addition, Nyangatom also uses, as a fourth strategy, the suppletive/irregular forms where both the singular and plural forms are unmarked. Hence, morphologically number marking in Nyangatom has four patterns: singulative, plurative, replacive and suppletive. Semantically, however, all patterns behave in the same way, i.e., they denote number in referents.

Table 2: Some examples of number marking systems in Nyangatom[1]

Marking system	**SG**	**PL**	**Gloss**
Singulative	e-tim-ot	ŋi-tim	'hair'
	a-ki-t	ŋa-ki	'ear'
	ɛ-pɔn-ɔj	ŋʊ-pɔn	'lip'
Plurative	ɛ-rɛɛt	ŋɪ-rɛɛt-ɪn	'forehead'
	a-kutuk	ŋa-kutuk-a	'language'
	a-ɓɛjɛ	ŋa-ɓɛjɛ-j	'egg'
Replacive	ɛ-kɔr-oj	ŋʊ-kɔr-a	'he-goat'
	a-kɔŋ-ʊ	ŋa-kɔɲ-ɛn	'eye'
	a-kɔj-ɪt	ŋa-kɔj-ɔ	'bone'
Suppletive/	ɪ-kɔk-ʊ	ŋɪ-dɛ	'child'
irregular forms	a-kɔw	ŋa-kɛɛs	'head'

3 Singulative Marking

The singulative is a pattern of number marking in nouns where the plural is unmarked for number and serves as a base or root form and a corresponding singular noun is morphologically marked by way of suffixation. This pattern is productive in Nyangatom and is largely applied to those nominal lexemes which name referents and very often occur in groups or large numbers. The pattern is also used for nouns which are in pairs (ear, wings, breast, etc.) or in finite sets (hair, grass, etc.).

As can be observed in the data presented in Tables 3 and 4 below, the singulative marker has several suffixes that are attached to the root form of the corresponding plural noun. The root noun in Nyangatom carries a gender prefix **v-** attached to the singular form and a prefix **ŋv-** attached to the plural form of a noun. The structure of the nominal root has, therefore, the following forms for singular and plural respectively: **V-Root-** and **ŋV-Root-.** The number marking suffix occurs following the root noun. Examine the following data:

[1] The prefix **v-** and **ŋv-** are nominal gender markers for the singular and plural nouns respectively. The singular nominal gender markers are **a-** for the feminine, **e-** for the masculine, and **i-** for neuter. In plural nouns the gender marker is **ŋa-** for the feminine and **ŋi-** for the masculine and neuter.

Table 3: Nouns (with masculine gender) that take the singulative pattern

Root form	**Singular form**	**Plural form**	**Gloss**
-ʧop-	e-ʧop-ot	ŋi-ʧop	‘eyeball’
-kitiŋ-	e-kitiɲ-o	ŋi-kitiŋ	‘cheek’
-ŋarul-	e-ŋarul-a	ŋi-ŋalur	‘kidney’
-kito-	e-kuto-j	ŋi-kuto	‘tree’
-muwa-	e-muwa-j	ŋi-muwa	‘sorghum’
-ɲa-	e-ɲa-het	ŋi-ɲa	‘grass, weed’
-wos-	e-wos-in	ŋi-wos	‘vagina’
-sikin-	e-sikin-a	ŋi-sikin	‘breast’
-tim-	e-tim-at	ŋi-tim	‘hair’
-mare-	e-mare-t	ŋi-mare	‘beans’
-sapa-	i-sapa-t	ŋi-sapa	‘boy’
-pon-	ɛ-pɔn-ɔj	ŋʊ-pɔn	‘lip’
-kɛl-	ɛ-kɛl-aj	ŋɪ-kɛl	‘tooth/teeth’
-wasʊwasʊ-	ɛ-wasʊwasʊ-t	ŋʊ-wasʊwasʊ	‘buttock’
-mɛɛgɛr-	ɛ -mɛɛgɛr- ɛt	ŋɪ-mɛɛgɛr	‘fingernail’
-kʊr-	ɛ-kʊr-ɪt	ŋʊ-kʊr	‘worm/insect’
-sʊr-	ɛ-sʊr-at	ŋɪ-sʊr	‘mosquito’
-laʧ-	ɛ-laʧ-ɪt	ŋɪ-laʧ	‘louse’
-mukuŋ	e-mukuŋ-o	ŋi-mukuŋ	‘ant’
-tɛŋ-	ɛ-tɛŋ-ɛt	ŋɪ-tɛŋ	‘animal’
-tʊj-	ɛ-tʊj-ɛ	ŋɪ-tʊj	‘container made of goat skin’
-kɪɲam-	ɛ-kɪɲam-ɛt	ŋɪ-kɪɲam	‘seed’
-kaɲar-	ɛ-kaɲar-ɪt	ŋi-kaɲar	‘star’
-kar-	ɛ-kar-ʊ	ŋi-kar	‘year’
-jɛnɛ-	ɛ-jɛnɛ-t	ŋɪ-jɛnɛ	‘relative’
-kaɲum-	e-kaɲum-ut	ŋi-kaɲum	‘sesame’
-katur-	e-katur-ut	ŋi-katur	‘wasp’
-pip-	e-pip-jot	ŋi-pip	‘fire sticks’

Root alternation has been observed between the singular and plural forms. The alternation is between sonorant consonants: **ŋ** and **ɲ** as well as between **l** and **r** within the root. The alternation between the velar and palatal nasal consonants occurred in the word for ‘cheek’ **e-kitiɲ-o** (sg) and **ŋi-kitiŋ** (pl). The reason for this alternation is

not clear at this stage. Likewise, the alternation between /**l**/ and /**r**/ is recorded in the word for 'kidney' **e-ŋarul-a** (sg) and **ŋi-ŋalur**. Here there is a process of metathesis taking place between /**l**/ and /**r**/ root internally. What motivates the process of metathesis is not clear.

Table 4: Nouns (with feminine gender) that take the singulative pattern

Root form	**Singular form**	**Plural form**	**Gloss**
-tur-	a-tur-ot	ŋa-tur	'flower'
-kihir-	a-kihir-ot	ŋa-kihir	'eyelash'
-kaβenuk-	a-kaβenuk-ot	ŋa-kaβenuk	'wing'
-ki-	a-ki-t	ŋa-ki	'ear'
-ɓulon-	a-ɓulon-it	ŋa-ɓulon	'pus'
-ten-	a-ten-e	ŋa-ten	'branch (of a tree)'
-bure-	a-ɓure-hit	ŋa-ɓure	'cat'
-kɪɪr-	a-kɪɪr-ɪt	ŋa-kɪɪr	'eyebrow'
-kɪr-	a-kɪr-ɪŋ	ŋa-kɪr	'flesh'
-kɔpɪr-	a-kɔpɪr-ɔ	ŋa-kɔpɪr	'feather'
-mwar-	a-mwar-a	ŋa-mwar	'horn'
-ʤul-	a-ʤul-ot	ŋa-ʤul	'fur, of animal'
-kito-	a-kito-j	ŋa-kito	'firewood'
-kaabʊk-	a-kaabʊk-ɛt	ŋa-kaabʊk	'bark'
-mon-	a-mon-i	ŋa-mon	'forest'
-mor-	a-mor-u	ŋi-mor	'mountain'

As can be observed from the data in Tables 3 and 4, the process of suffixation is accompanied by ATR vowel harmony. The basic principle of the vowel harmony, which is a form of assimilation operating over the vowels within a word in Nyangatom, is the suffix vowel dominates the harmony process. If the suffix vowel is a -ATR vowel, then the root as well as the prefix vowel agrees with the feature of -ATR or vice versa. The spreading of harmony is in one direction from suffix to the root and prefixes. Nyangatom has nine vowels in two sets /**i e u o**/ and /**ɪ ɛ ʊ ɔ**/ with /**a**/ being a neutral vowel that does not participate in the harmony process.

The singulative pattern, which is common in Nilo-Saharan languages (Dimmendaal 2000: 216; Creissels et al 2008: 119) is said to be related to the concept of individuation in number marking, that is "the groups which qualify with large numbers are the groups which are less individuated and conversely are more likely to be viewed as a unit"

(Corbett 2000: 217). Some examples include nouns such as *star, salt* and *hair.* These are the kind of nouns that are not easily differentiated into single items and when they are individuated singulative singulars can often have a specific meaning which refers to a separated item of the referent.

Based on cross-linguistic comparisons, Haspelmath & Karjus (2017: 1222) concluded that the semantic classes of nouns that tend to be expressed as singulative lexemes are paired body-parts, fruits and vegetables, small animals that occur in groups and groups of people. The authors claim that these groups happened to be typical singulative nouns that recur across languages in a way that cannot be accidental.

The most common singulative suffixes include: **-ot**/**-ɔt, -it**/**-ɪt, -t, -j, -a, -et**/**-ɛt, -o**/**-ɔ, -in**/**-ɪn, -i, -e**/**-ɛ**; the alternation between the suffixes such as **-ot** and **-ɔt** being determined by the vowel harmony rules. The other suffixes are rare and sometimes restricted to only one plural noun stem. At this stage, neither semantic nor morphophonemic criteria seem able to predict the allomorphic variation of the various singulative suffixes. The variation in singulative marker suffixes is further complicated by the vowel harmony process taking place between [-ATR] and [+ATR] vowels across morpheme boundaries.

4 Plurative Marking

Plural marking is a more productive number marking pattern where a plural noun is morphologically marked by way of suffixation and the corresponding singular noun is unmarked for number and serves as the base form to which a suffix that denotes plural is attached. Consider the following data in Table 5 below.

Table 5: Nouns that take the plurative pattern

Root form	**Singular form**	**Plural form**	**Gloss**
-ɓɛjɛ-	a-ɓɛjɛ	ŋa-ɓɛjɛ-j	‘egg’
-kozim-	e-kozim	ŋi-kozim-an	‘tail’
-jɛpɛ-	a- jɛpɛ	ŋa- jɛpɛ -j	‘axe’
-sindi-	e-sindi	ŋi-sinde-i	‘wheat’
-kapa-	e-kapa	ŋi-kapa-j	‘spade’’
-ŋɔk-	ɪ-ŋɔk	ŋɪ-ŋɔkw-ɔ	‘dog’
-moŋ-	e-moŋ	ŋi-moŋ-in	‘bull’
-manik-	e-manik	ŋi-manik-o	‘ox’
-m**ɛsɛ**k-	a-mɛsɛk	ŋa-mɛsɛk-ɪn	‘she-sheep’
-kine-	a-kine	ŋa-kine-j	‘she-goat’
-rompo-	e-rompo	ŋe-rompo-j	‘maize’
-d**ɛrɛ**-	a- dɛrɛ	ŋa-dɛrɛ -kaɪ	‘calabash’
-kuto-	a-kuto	ŋa-kuto-j	‘root’
-maɲ-	e-maɲ	ŋɪ-maɲ-ɪn	‘liver’
-rukum-	a-rukum	ŋa-rukum-a	‘flu’
-perit-	a-perit	ŋa-perit-o	‘womb’
-ɓor-	a-ɓor	ŋa-ɓor-in	‘back’
-ɟeme-	a-ɟeme	ŋa-ɟeme-j	‘wound’
-muɟ-	a-muɟ	ŋa-muɟ-a	‘food’
-ŋaɟep-	a-ŋaɟep	ŋa-ŋaɟep-a	‘tongue’
-mir-	a-mir	ŋa-mir-tin	‘penis’
-muɲ-	a-muɲ	ŋa-muɲ-in	‘skin’
-rɛɛt-	ɛ-rɛɛt	ŋi- rɛɛt -ɪn	‘face’
-kaji-	a-kaji	ŋa-kahi-s	‘twin’
-kile-	e-kile	ŋi-kile-jok	‘man’

Another set of root alternations occurrs in Table 5 above in the word for ‘wheat’ **e-sindi** (sg) and **e-sinde-j** (pl). The word for ‘wheat’ is borrowed from the Amharic word **sɨnde** ‘wheat’. The alternation between /**i**/ and /**e**/ is the only case recorded in our data. In the word for ‘twin’ there is also an alternation between /**j**/ and /**h**/ as in **a-kaji** (sg) and **ŋa-kahi-s** (pl). The latter case seems to be a case of consonant weakening where the obstruent /**h**/ is weakened to the approximant /**j**/ intervocalically.

Nyangatom has a rich inventory of plural suffixes. The plural marking suffixes are so varied and there are several competing suffixes where their allomorphic realization happens to be less clear. In the following section an attempt has been made to find a predictable pattern based on the phonotactic structure of the nominal roots. The most common suffixes are, however, the following: **-a, -in/-ɪn, -j, -o/-ɔ, -i.** The complete list of suffixes is given below in Table 9 distinguished in terms their phonotactic structure.

Another productive way of making plurals, especially for close kinship terms, by attaching the prefix **ta-** to the singular form, is illustrated in the following examples.

Table 6a: Plurative markings in kinship terms

Singular form	**Plural form**	**Gloss**
a-pa	ta-apa	‘father’
ɪ-tɔ	ta-ɪtɔ	‘mother’
a-paa	ta-a-paa	‘grandfather’
a-taa	ta-a-taa	‘grandmother’
nakaato	ta-nakaato	‘sister’
lɔkaatɔ	ta-lɔkaatɔ	‘brother’
lɔkɔkʊ	ta-lɔkɔkʊ	‘son’
nakɔkʊ	ta-nakɔkʊ	‘daughter’

The prefix **ta-** has also been used with a borrowed word ‘carrot’ as well as with a few other words as shown below in Table 6b. Its distribution beyond kinship terms is, however, limited to a few lexical items.

Table 6b: The plural marker ta- with non-kinship terms

Singular form	**Plural form**	**Gloss**
Karot	ta-karot	‘carrot’
Tulla	ta-tulla	‘owl’
Ŋai	ta-ŋai	‘who’

5 Replacement Marking

The third number marking pattern, where both the singular and plural nouns are marked with a number suffix, is the replacement marking. With nouns belonging to this group replacement of the number suffix occurs. The singular and plural suffixes are shown below in Table 7.

Table 7: Nouns that take replacement marking pattern

Root/base form	Singular suffix	Plural suffix	Gloss
-kor-	e-kor-oj	ŋi-kor-a	'he-goat'
-ta-	e-ta-u	ŋi-ta-in	'heart'
-pɛs-	a-pɛs-ɛ	ŋa-pɛs-ʊr	'girl'
-kawurɛ-	ɛ-kawʊrɛ-n	ŋɪ-kawʊrɛ-hak	'parent'
-ɓeleke-	a-ɓeleke-k	ŋa-ɓeleke-ja	'calabash, broken or part of'
-kɔj-	a-kɔj-ɪt	ŋa-kɔj-ɔ	'bone'
-kɔn-	a-kɔŋ-ʊ	ŋa-kɔɲ-ɛn	'eye'
-kedʒʊ-	ŋa-keɟ-u	ŋa-keɟ-en	'leg'
-kɔr-	ɛ-kr-ɔ	ŋɪ -rɔr-a	'name'

The singular suffixes used as replacement marking are: **-oj, -u, -ɛ, -n, -k, -ɪt**; while the plural suffixes are: **-a, -in, -ʊr, -hak, -ja, - ɔ, -ɛn/en.**

6 Nominal number inflections

The number marking system discussed in the preceding sections, for singulative, plurative and replacement marking patterns, has shown that the forms of the number markers are so diverse and a large number of suffixes have been identified in the list of around 500 nouns. There are numerous singulative markers as well as various plural markers in Nyangatom as shown in Tables 8 and 9 below. Some of these suffixes are also used as replacement markers. Hence, there are overlapping suffixes used as singulative, plurative and replacement markers. Such level of morphological and phonological complexity in nominal number markings is not unique to Nyangatom; rather this is a typical feature of Eastern Nilotic languages (Dimmendaal 2000: 219).

Table 8: A list of singulative suffixes

-V	-VC	-C	-CVC
-a	**-ot/ɔt**	**-t**	**-het**
-o/ɔ	**- it/ɪt**	**-j**	**-hit**
-i	**- et/ɛt**		**-jot**
-e/ɛ	**- in/ɪn**		
-u/ʊ	**-ɪŋ**		
	-aj		
	-oj		
	-ut		
	-at		

Table 9: A list of plurative suffixes

-V	-VC	-C	-CVC
-a	**-in/ɪn**	**-j**	**-kai**
-o/ɔ	**- an**	**-s**	**-jok**
-i	**-ɛn**		**-tin**
-e/ɛ			

Although various suffixes are used exclusively to denote a singulative or a plurative, there are some suffixes that are used as singulative as well as plurative markers. These common suffixes include: **-a, -o/-ɔ, -i, -e/-ɛ, -in/-ɪn,** and **–j.**

Dimmendaal (1983) claims that the seemingly extreme variation observed in number inflection in Turkana nouns has been determined by consideration of a phonotactic principle. In order to find a predictable pattern that governs the system of number marking the author applied the notion of mora-counting, that is, the choice of number marking suffix is, to a large extent, determined by the moraic structure of nominal roots (Dimmendaal 1983).

Unlike the traditional view of the internal structure of a syllable, in a moraic theory, the syllable does not consist of an onset-ryhme structure but of two morae which are sub-constituents of the syllable. The first mora consists of an onset and a nucleus, and the second mora consists of an optional coda.

Nyangatom seems to be less sensitive to mora-counting than Turkana regarding the nominal number marking[2]. In Nyangatom the quantity of moras within the nominal root structure does not seem to play a role in the choice of the number suffix. Rather it is the type and number of syllables within the nominal root that determines the choice of a particular suffix.

Before probing into the type and quantity of the syllable discussion of the possible generalizations on the nominal number marking suffixes, it would be proper to have a summary of the syllable types and their structure within the nominal roots.

According to Moges Yigezu (2017: 7), nominal roots in Nyangatom are largely monosyllabic and disyllabic in their structure and rarely exceed two syllables. They can be distinguished with regard to their canonical pattern— CGVVC-. The possible syllable types within the nominal root structure are the following: CV, CVC, CVV, CVVC, CGVC, CGV, VV, VC, VCV, and VCVV.

As can be gathered from the data presented in the preceding sections, among the various suffixes (cf. Tables 8 & 9 above) three of them are the most productive suffixes that are attached to many nouns. These are: **-in**/**ɪn**, **-a,** and **-j.** These suffixes occur as both singulative and plurative markings. Based on the quantity of syllables within the nominal root structure the following generalizations can be made for nominal number marking in Nyangatom with some exceptions.

(a) -in/ɪn is attached to a monosyllabic root ending in C
(b) -a is attached to a disyllabic root ending in C
(c) -j is attached to a root ending in V

Some illustrative examples for the above generalizations that account for a large number of nominal roots in the language are given below under Tables 10–12.

[2] In other domains of the phonology, however, the notion of mora-counting plays a role in organizing the sound pattern of the language at least in the syllabification of complex syllables and in describing the phonological structure of reduplicated words (cf. Moges Yigezu 2017).

Table 10(a): Examples of **-in**/**-ɪn** suffix attached to monosyllabic roots ending in -C

Root structure	**SG**	**PL**	**Gloss**
CVC	e-moŋ	ŋi-moŋ-in	'bull'
CVVC	ɛ-rɛɛt	ŋɪ-rɛɛt-ɪn	'forehead'
CVC	ɛ-maɲ	ŋɪ-maɲ-ɪn	'liver'
CVC	e-wos-in	ŋi-wos	'vagina'
CVC	a-muɲ	ŋa-muɲ-in	'skin'
CVC	a- kʊɲ	ŋa-kʊɲ-ɪn	'knee'
CVC	a-kɪr-ɪŋ	ŋa-kɪr	'meat'
CVC	a-nok	ŋa-nok-in	'kraal'
CVC	a-ɓor	ŋa-ɓor-in	'bottom'
CVC	a-tap	ŋa-tap-in	'porridge'

Some exceptions to the above pattern exist where the suffix **-in/ɪn** is attached to a vowel ending root (CVCV) as well as a few consonant ending disyllabic roots as shown in Table 10(b) below.

Table 10(b): Examples of **-in**/**-ɪn** suffix attached to Disyllabic roots and vowel ending roots

Root structure	**SG**	**PL**	**Gloss**
CVCV	a-ŋole	ŋa-ŋole- in	'horse'
VCVC	a-abɔr	ŋa-abɔr-ɪn	'waist'
CVCVC	a-mɛsɛk	ŋa-mɛsɛk -ɪn	'sheep'
CVCVC	a-ŋɔlɔl	ŋa-ŋɔlɔl-ɪn	'river'
CVCVC	a-tapar	ŋa-tapar-in	'pond'

All the examples given in Table 10(b) are disyllabic roots but the suffix **-in**/**ɪn** is attached to these roots. The root for 'horse' ends in a vowel but it contains a disyllabic root which is also an exception to the number marking pattern.

Table 11: Examples of **-a** suffix attached to disyllabic roots ending in -C

Root structure	**SG**	**PL**	**Gloss**
CVCVC	a-muɟ	ŋa-muɟ-a	‘food’
CVCVC	a-rukum	ŋa-rukum-a	‘flue’
CVCVC	a-rupet	ŋa-rupet-a	‘root’
CVCVC	e-ŋarul-a	ŋi-ŋalur	‘kidney’
CVCVC	e-sikin-a	ŋi-sikin	‘breast’
CCVC	a-mwar-a	ŋa-mwar	‘horn’
CVCVC	a-kutuk	ŋa-kutuk-a	‘mouth’
CVCVC	a-bokoŋ	ŋa-bokoŋ-a	‘chin’
CVCVC	a-ŋaɟep	ŋa-ŋaɟep-a	‘tongue’
CVCVC	ɛ-pɛnɛk	ŋa-pɛnɛk-a	‘mustache’
CVVCVCVC	e-moosiriŋ	ŋi-moosiriŋ-a	‘neck’
CVCVC	ɛ-sɛgɛt	ŋɪ-sɛgɛt-a	‘shoulder’
CVCVCC	a-kapʊlj	ŋa-kapʊlj-a	‘navel’
CVCVC	e-kuruŋ	ŋa-kuruŋ-a	‘elbow’
VCCVC	a-arwak	ŋa-arwak-a	‘fat’
CVCVC	ɛ-kɔkɔr	ŋɪ-kɔkɔr-a	‘chicken’
VCVC	a-asak	ŋa-asak-a	‘lake’
CVC	**ɛ**-lɔŋ	ŋʊ-lɔŋ-a	‘fog’
CVCVC	a-napet	ŋa-napet-a	‘baby-carrier’
CVCVC	a-ŋasep	ŋa-ŋasep-a	‘placenta’ (for animals)

The suffix **-a** is attached to disyllabic nominal roots. An exception to this pattern is a trisyllabic word for ‘neck’ where the **-a** suffix is attached to the multisyllabic nominal root.

Table 12: Examples of **-j** suffix attached to roots ending in -V

Root structure	**SG**	**PL**	**Gloss**
CVCV	a-ɓɛjɛ	ŋa-ɓɛjɛ-j	‘egg’
CVCV	ɛ-kalɛ	ŋɛ-kalɛ-j	‘young goat’
CVCVCV	a-mɔtɔga	ŋa-mɔtɔga-j	‘car’
CVCVCV	a-karɛʤɛ	ŋa-karɛʤɛ-j	‘door’
CVCVCV	a-lapatʊ	ŋa-lapatʊ-j	‘field’
CVCV	a- jɛpɛ	ŋa- jɛpɛ -j	‘axe’
CVCCV	e-sindi	ŋi-sinde-j	‘wheat’
CVCV	e-kepa	ŋi-kapa-j	‘spade’
CVCV	a-kine	ŋa-kine-j	‘she-goat’
CVCV	a-kuto	ŋa-kuto-j	‘root’
CVCV	a-ɟeme	ŋa-ɟeme-j	‘wound’
CVCV	a-kito-j	ŋa-kito	‘firewood’
CVCV	e-kuto-j	ŋi-kuto	‘tree’
CVCV	e-muwa-j	ŋi-muwa	‘sorghum’
CVCV	ɛ-dɛwa	ŋɪ-dɛwa-j	‘medicine’
CVCV	ɛ-bɛla	ŋɪ-bɛla-j	‘pole’
CVCV	ɛ-wɔrɔ	ŋɪ-wɔrɛj	‘clothes’
CVCVCCV	a-pɪjantɛ	ŋa-pɪjantɛ	‘net’
CVCV	e-ʦeʦo	ŋi-ʦoʦo-j	‘sack/bag’
CVCV	a-tʊɓa	ŋa-tʊɓa-j	‘vessel/ship’
CVCVCV	ɛ-kɔrɔŋa-t	ŋa-kɔrɔŋa-j	‘island’
CVCV	ɛ-jɪla	ŋɪ-jɪla-j	‘town’
CVCV	a-muro	ŋa-muro-j	‘thigh’
CVCV	e-pele	ŋi-pele-j	‘tapeworm’
CVCV	a-ɓere	ŋi-ɓele-j	‘butterfly’
CVCV	a-ɓiro	ŋa-ɓiro-j	‘walking stick’
CVCV	i-ɓiti	ŋi-ɓiti-j	‘spear (small)’
CVCV	a-ɓole	ŋa-ɓole-j	‘bullet case’
CVCV	a-pʊwa	ŋa-pʊwa-j	‘dust’
CVCV	a-wuno	ŋa-wuni-j	‘string/rope’
CVCV	e-keno	ŋi-keno-j	‘fire place’

The suffix **-j** happens to be the most productive suffix that marks both singulative and plurative meanings depending on the phonological conditioning.

7 Irregular/suppletive Forms

A handful of nominals comprise nouns that are not marked either the singular or plural. These are irregular pairs which have many unpredictable morphological manifestations and forms. Which form could be basic is hard to determine. Some examples are given in Table 13 below.

Table 13: Irregular singular/plural forms

Singular form	**Plural form**	**Gloss**
e-suwo	ŋi-utol	‘milk container’
i-tohon	ŋu-tuŋa	‘people’
a-ɪtɛŋ	ŋa-atʊk	‘cattle’
a-kwan	ŋa-wati	‘body’
a-kow	ŋa-kɛɛs	‘head’

8 Tonal Modification

The analysis of tone in Nyangatom is at its early stage and very little is known about the tonal pattern of nominals. According to a brief grammatical sketch given by Dimmendaal (2007) Nyangatom has two tone levels, high and low as well as down step and down drift. As in many Nilotic languages, tone has a grammatical function and grammatical elements such as case are marked by way of tonal inflection on nouns and pronouns, where both nominative and accusative cases are marked. In the following data in Table 14 below only high tone and low are marked just to show the tonal modification involved in nominal number marking.

Table 14: Examples of tonal modification in number marking in nouns

Base/root form	**Singular form**	**Plural form**	**Gloss**
-keɲ	ì-kéɲ	ŋí-kèɲ	‘bird’
-koli’a	è-kólì’a	ŋí-kòlí’a	‘fish’
-zikiria	é-zikìria	ŋi-zíkìria	‘donkey’
-bɛrʊ	à-ɓɛ́rʊù	ŋá-ɓɛ̀rʊú	‘woman’
-kan	à-kán	ŋá-kàn	‘hand’

9 Conclusions

Nominal number marking in Nyangatom has a complex system that largely follows the tripartite system of number marking comprising singulative, plurative and replacement pattern of number markings. The number inflection, however, exhibits a large inventory of number suffixes that makes generalization so difficult. Some of these suffixes appear to serve both as singulative and plurative markers under the same phonological condition. In order to establish a few rules that reasonably capture the system of nominal number marking, a phonotactic principle has been considered in which the number of syllables within the root structure happen to determine the choice of a particular number marking suffix. Although some generalizations have been made that capture the majority of nominal roots there are exceptions to the rules that require further investigation. Hence, looking at a larger data base that will have a representative set of noun meanings would be in order.

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