CHAPTER III

Pluractionality and the distribution of number marking across categories

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The crucial role of constructions in grammar has been argued for, in particular with respect to idioms, by Fillmore, Kay and O'Connor (1988). But constructions, varying in size and complexity, have been claimed to constitute a central property of language structure in general, in studies such as Goldberg (1995, 2006) and Croft (2001). The present contribution takes pluractionality marking on verbs as a basis on which to provide further evidence for this position. Pluractional constructions prototypically express repetition of some action or event. In the case of intransitive predications, the subject tends to be affected by this, whereas in transitive constructions, pluractionality tends to affect the object. As argued below (Section 2), a construction-level approach towards number marking across categories helps to explain how transnumeral (general number) meaning emerges in Nilo-Saharan and Afroasiatic languages. The present study also provides evidence (in Section 3) for a historical reinterpretation of plural event marking as plural argument marking in one Nilotic (Nilo-Saharan) language, Maasai.* As argued in the final Section (4), pluractionality marking as "non-canonical" number marking is common in a range of languages belonging to different language families in Africa and elsewhere, and consequently deserves its proper place in a typology of number marking.

1. Background to the present study

In a seminal contribution to theoretical linguistics, based on English *let-alone* constructions, Fillmore, Kay and O'Connor (1988: 501) argued that "…an explanatory model of grammar will include principles whereby a language can associate semantic and pragmatic interpretation principles with syntactic configurations larger and more complex

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than those definable by means of single phrase structure rules." In more recent and more extensive models, such as Goldberg (1995, 2006), it is argued that constructions in fact play a role from the smallest morphological unit (the morpheme) all the way to complex sentence structures, as in Table III.1, presented in Goldberg (2006: 5).

Table III.1. Examples of constructions, varying in size and complexity

Morpheme	e.g. *pre-, -ing*
Word	e.g. *avocado, anaconda, and*
Complex word	e.g. *daredevil, shoo-in*
Complex word (partially filled)	e.g.[N-s] (for regular plurals)
Idiom (filled)	e.g. *going great guns, give the Devil his due*
Idiom (partially filled)	e.g. *jog*⟨someone's⟩*memory*, *send*⟨someone⟩*to the cleaners*
Covariational Conditional	The Xer the Yer (e.g. *the more you think about it, the less you understand*)
Ditransitive (double object)	Subj V Obj1 Obj2 (e.g. *he gave her a fish taco: he baked her a muffin*)
Passive	Subj aux VPpp (PP_{by}) (e.g. *the armadillo was hit by a car*)

Additional evidence that grammatical constructions, rather than syntactic units, are the primary units of grammar has been adduced from child language acquisition by Tomasello (2003), in his usage-based model, and from language change, in volumes edited by Bergs and Diewald (2008, 2009).Whereas slightly different models have been developed over the past decades, Croft's (2001) *Radical Construction Grammar* is particularly attractive for descriptive linguistics because of its typological orientation, which takes into account cross-linguistic factors. According to Croft (e.g. 2001), grammatical categories, for example, have only language-particular existence. A similar position is defended in Dimmendaal (2008) in a typological survey of so-called "verb-final" languages on the African continent.

The present contribution takes pluractional marking on the verb in a number of African languages as a basis on which to show that a constructional approach helps us to understand how and why number marking may be spread over different syntactic categories, and interacts with each, thereby also occasionally leading towards a reinterpretation of the grammatical status of this type of number marking. Prototypically, verbal pluractional marking expresses "…plurality or multiplicity of the verb's action", as pointed out by Newman (1990: 53–54) in his survey of this phenomenon in Chadic languages. In the case of intransitive verbs, pluractional marking typically affects the subject, whereas with transitive verbs it typically affects the object.

Pluractional marking in these terms is widespread across a range of languages and language families in Africa, roughly corresponding to Güldemann's (2008)

"Macro-Sudan belt", a linguistic area covering genealogical units that include Niger-Congo, Nilo-Saharan, and Afroasiatic. It should be pointed out, however, that Güldemann (2008) does not mention pluractionality as one of the typological properties of this zone; moreover, pluractional marking as an areal feature extends into the North Khoisan family and into linguistic isolates such as Laal in Chad.[1]

Pluractional marking on verbs is attested in languages with both rich and restricted systems of number marking on nouns, and also in languages without number marking at all on the latter category. Kutsch Lojenga (1994: 284) observes, for example, with respect to the Central-Sudanic (Nilo-Saharan) language Ngiti, that number marking is essentially restricted to nouns referring to humans; with pronouns, on the other hand, there is a distinction between singular and plural (as well as person). The Ngiti system, consequently, is in line with the more commonly observed Animacy Hierarchy, as formulated by Corbett (2000: 56):

speaker > addressee > 3rd person > kin > human > animate > inanimate
(1st person (2nd person pronouns) pronouns)

Nevertheless, nouns that are unmarked for number but function as subjects or objects may receive singular or plural meaning with any singular-action or pluractional verb in Ngiti. Kutsch Lojenga (1994) distinguishes between collective and distributive plurality in this respect. Collective plurality is found when a plural subject or object accompanies a singular-action verb.

(1) *ma mɨ́ ɨ̀ndrɨ̀ nádhɑ̄*
ma m-ɨ́ ɨ̀ndrɨ̀ nɨ́-àdhɑ̄
1SG SC-AUX goat RSM-pull:NOM1
'I am pulling one goat, or a group of goats simultaneously (collective plural)'

Distributive plurality is found when a plural subject or object accompanies a pluractional verb.

(2) *ma mɨ́ ɨ̀ndrɨ̀ núdhɑ̄*
ma m-ɨ́ ɨ̀ndrɨ̀ nɨ́-ùdhɑ̄
1SG SC-AUX goat RSM-pull:PLUR:NOM1
'I am pulling several goats one by one (distributive plural), or one goat several times'

1. Güldemann (2008: 171) points out that Westermann's Sudan group (Sudansprachen) is more inclusive in geographical terms than his "Macro-Sudan belt", and "[i]n accordance with the general approach to African linguistic classification at the time, he [Westermann] was also guided by criteria referring to cultural and biological characteristics of the respective communities."

With corresponding intransitive verbs in Ngiti, the implication is that a singular subject is involved in some event by performing it several times (4) rather than once (as in (3)).

(3) *ma mákpɛ̃*
ma m-ɨ́-àkpɛ̃
1SG SC-AUX-whistle:NOM1
'I am whistling'

(4) *ma múkpɛ̃* (abhɔ)
ma m-ɨ́-ùkpɛ̃ (much)
1SG SC-AUX-whistle:PLUR:NOM1
'I am whistling a lot'

If number marking on nouns is regarded as "canonical" number marking, such alternative, clausal strategies may be seen as "non-canonical" strategies, following the terminology of Corbett (2000).

What is striking, when looking at pluractional marking from a cross-linguistic point of view, is the fact that in several languages there tend to be a number of co-occurring formal strategies, often with different degrees of productivity. Newman (1990: 53–86), in his survey of verbal pluractionality marking in Chadic (Afroasiatic), for example, shows that in several languages belonging to this family there is more than one strategy. In Tima, a Niger-Congo language spoken in the Nuba Mountains, in Sudan, five different formal strategies co-exist, albeit with different degrees of productivity (Alamin 2012: 104–106). And Tima is far from unique as a Niger-Congo language in this respect.

These typological properties suggest that such systems are subject to a considerable degree of communicative dynamism, and hence to historical change or reinterpretation. There may be a number of reasons for the relative instability of such systems, compared to some other grammatical domains in these languages, such as noun-class systems in Niger-Congo languages, or gender marking in Afroasiatic languages. One reason, as argued in the present contribution, may derive from construction-level effects of number marking across categories. As shown below, pluractional marking, as a derivational phenomenon describing event structure, interacts with plural argument marking. This construction-level effect occasionally leads to a reinterpretation of functions, as shown for one language, Maasai, in Section 3.

2. Plural arguments and plural events in Maban (Nilo-Saharan)

Number marking on nouns in the Central Sudanic branch of the Nilo-Saharan phylum is highly restricted, as shown for Ngiti in Section 1 above. But in the other primary branch of the phylum (following the classification proposed in Dimmendaal 2010), North-Eastern Nilo-Saharan, number marking is usually rich and complex.

Various subgroups within the North-Eastern branch of Nilo-Saharan have a tripartite number-marking system, whereby either the singular constitutes the morphologically unmarked form (with corresponding number marking in the plural) or the plural (with corresponding singulative marking); in addition, there are nouns for which number is marked in the singular as well as the plural (Dimmendaal 2000). As typologically similar systems are found in Afroasiatic languages in Ethiopia, and as these Nilo-Saharan and Afroasiatic languages share a range of other typological properties (such as case marking, the frequent use of coverbs, light verbs and converbs, and a verb-final syntax), these similarities are probably due to areal contact (Dimmendaal 2008).

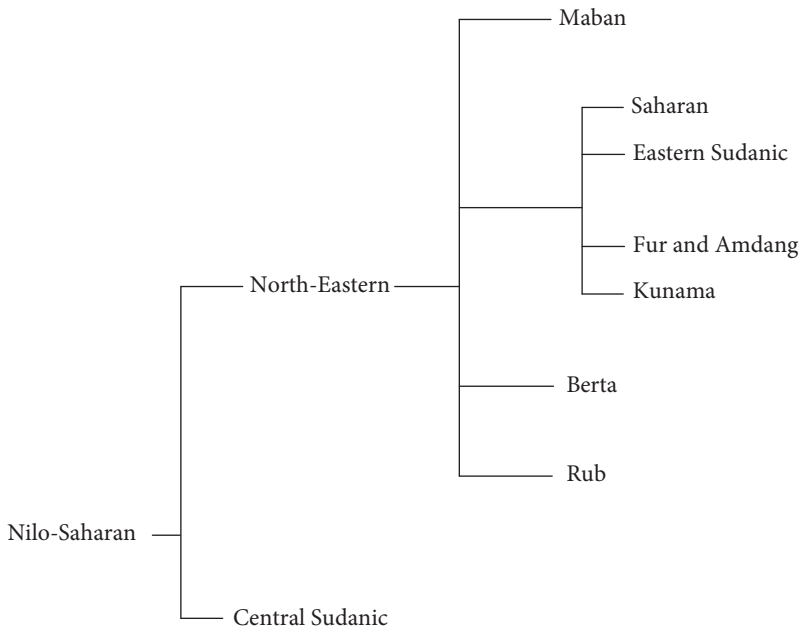

Figure III.1. North-Eastern Nilo-Saharan family tree

Dimmendaal (2000: 250), in his typological survey of tripartite number marking systems, observes that there appears to be one difference between Afroasiatic and Nilo-Saharan languages in this respect: unlike Nilo-Saharan languages, Afroasiatic languages have a general number or transnumeral form, i.e. a form not marked for number, which nevertheless can have a singular or a plural interpretation. Corbett and Hayward (1987) provide examples of this for the Cushitic language Bayso:[2]

2. There is also a paucal form in Bayso.

(5) *lúban* *foofe*
lion.GENERAL watched.1SG
'I watched lion (one, or more than one)'

(6) *lubán-titi* *foofe*
lion-SG watched.1SG
'I watched a lion'

(7) *luban-jool* *foofe*
lion-PL watched.1SG
'I watched (a lot of) lions'

Transnumeral constructions, as illustrated in (5) for the Cushitic language Bayso, are in fact common in the Cushitic and Semitic branches of Afroasiatic (Mous 2012: 409–410). The transnumeral reading of nouns such as *lúban* 'lion' presumably emerges from its paradigmatic contrast with alternative constructions, such as (6) and (7), which are marked for number. But as the examples for the Central Sudanic language Ngiti, above, and other examples below suggest, pluractional marking on verbs also coerces a "general number" (transnumeral) reading of object nouns (or subject nouns, depending on whether a transitive or intransitive predication is involved). It may be this latter property which lies at the heart of transnumeral readings for object (or subject) nouns in corresponding constructions with pluractional verbs.

Whereas transnumeral forms for nouns were thought to be absent from Nilo-Saharan languages (see the survey in Dimmendaal (2000)), the detailed analysis by Weiss (2009) of Maba, a Nilo-Saharan language spoken in Chad, has made it clear that this language in fact has such forms.

(8) *kɔ́drɔ́ː* *sɔ̀llɔ́kɔ́ː* '1. slippery stones; 2. a slippery stone'
stone(s) slippery

Number marking on nominal modifiers or on the verb is obligatory only with animate nouns in Maba (hence the ambiguity in the form illustrated in (8)).

(9) a. *mésɛ́ː* *kúllɛ́y* 'big hut'
hut big

b. *íríː* *kùllà-g* (***kúllɛ́y*) 'big leopard'
leopard big-SG

Maba belongs to the Maban branch, a North-Eastern Nilo-Saharan group with a rich tripartite number-marking system on nouns. The following examples (derived from Weiss (2009)) illustrate this system with singulatives, plurals and replacement morphemes:

(10) a. *súmbúrì-g* 'twin' *súmbúr* 'twins'
ɔ̀wùnú-g 'a bit of ashes' *ɔ̀wún* 'ashes'

b.	*tàndàm*	'giant kudu'	*tàndàm-í:*	'giant kudus'
	bàrá:	'shoe'	*bàr-tú:*	'shoes'
c.	*kúrà-g*	'young man'	*kúr-tú:*	'young men'
	kámbà-g	'boy'	*kàmbá-ɲì:*	'boys'

There is usually no separate construction with 'a pair of' in these Nilo-Saharan languages. These typically are expressed as morphologically unmarked for number when indicating a pair (as with 'twins' in (10) above), the corresponding singleton taking a singulative marker.

Apart from items usually occurring in pairs, nouns referring to phenomena usually occurring in larger numbers, such as 'mosquitos', take singulative markers. In addition, mass nouns may take a singulative marker in order to express 'a bit of'. The number-marking systems of these Nilo-Saharan languages thus provide evidence for the claim by Wierzbicka (1985), that "…form-classes are semantically motivated, and that differences in grammatical behavior reflect iconically differences in meaning" (Wierzbicka 1985: 501).

Depending on the noun, singulatives in Maba may also express diminutive meaning, as with *kíjí:* 'head', *kìjí-g* 'small head'. The semantic range covered by singulative markers in Maba again does not appear to be arbitrary. 'Ashes' (as in (10) above) can be divided into parts without losing any of their defining properties. In contrast with such nouns, there is no "arbitrary divisibility" (as Wierzbicka (1985) calls this phenomenon) with a word like 'head', which designates a minimal concrete entity which would lose some of its defining property when divided into parts. Consequently, the singulative here expresses a 'smaller variety of'.

In addition, there is a "pluriel du pluriel" i.e. a distributive plural form (expressing 'different groups of') in Maba. When such a distributive plural suffix is added to morphologically marked plurals, the other plural suffix is retained, as with 'shoes' below; when added to nouns which are unmarked in the plural, such as 'water', the distributive form is added to the unmarked stem.

(11)	a.	*bara:*	*bar-tu:*	*bar-tu:-si:*
		'shoe'	'shoes'	'different (pairs of) shoes'
	b.	*ɛnji-ga*	*ɛnji:*	*ɛnji-si:*
		'a bit of water'	'water'	'many containers/quantities of water'

The relevance of the mass noun/countable noun distinction in Maba becomes evident when looking at the interaction between number marking on nouns and event marking on the verb. Maba makes a three-way morphological distinction, depending on the verb, between singular action (singulative marking), plural action (pluractional marking), and a replacement pattern; in the latter case, the verb may occur with either singulative or pluractional marking. Maba also shows that pluractionality marking on

verbs is perfectly compatible with rich "canonical" number marking on nouns. Weiss (2009: 107) points out, in this respect, that in the absence of number marking on nouns that function as the subject of a verb, agreement on the verb helps to interpret number. With objects, singulative or pluractional marking on the verb helps to interpret quantification. The following examples illustrate some of these strategies with the object noun 'water', which is morphologically unmarked in the basic (plural) form, but which can take a singulative marker (although not in these examples):

(12) *énjìː à-wáː-**k**-ì*
water 1SG-pour-PLUR-DECL
'I pour out a lot of water, I pour out water regularly'

(13) *énjìː à-wáː**n**-ì*
water 1SG-pour:SING-DECL
'I pour out a bit of water'

In Maba, contrary to English, quantification can also be associated with the verb, or more specifically with the results of some verbal action. Grammatical plurality, in the case of the object noun 'water' in (13), shows that the referent is composed of (individual) parts which do not achieve the status of separate objects, although such a situation can be conceived of in and by itself, as shown by the "pluriel du pluriel", ɛnji-si: 'many containers/quantities of water'. The distinction between countable and uncountable is therefore sensitive to the intended conceptualisation. In the following example, with the word for 'millet' (which can take a singulative marker), the "boundedness" again is associated with the act, not with the substance.

(14) *èsɛ́ː è-rɛ̀wà-**ŋ**-á*
millet 1SG-cut-SING-PAST
'I harvested some millet'

In (14), the quantification is associated with the event, not with the argument, and the conversational implicature is that there is still millet left. Contrary to languages like English, however, this is expressed on the verb rather than by a quantifier ('some, a bit of, 'a few') in the object noun phrase. Again, the notion of "arbitrary divisibility" (Wierzbicka 1985) is highly relevant here. Whereas 'water' or 'millet' can be divided into parts without losing their defining properties, a noun like 'head' would lose its defining properties when divided into parts, unless it is treated as a mass noun. A combination of the latter noun ('head') with singulative marking on the verb means that there is a conflict between constructional and lexical denotata which needs to be resolved, given the fact that a plural action is exerted upon an object referring to a [+countable] noun.[3]

3. The fascinating examples from English and other languages in Wierzbicka (1985) also show how human perception of the world and human anthropocentric interests are reflected in grammar.

This construction consequently coerces an alternative interpretation as a mass noun, for example when somebody takes a bit of 'sheep's head' (as a meal). Michaelis (2005: 51) discusses such examples in English, and notes that "[i]f a lexical item is semantically incompatible with its syntactic context, the meaning of the lexical item conforms to the meaning of the structure in which it is embedded." Michaelis (2005: 51) gives various interesting examples of such "override principles". For example, in a sentence like 'you have apple on your shirt' the noun 'apple' denotes a mass type which it would not ordinarily denote. Through the construction in which this noun occurs, implicit type-shifting occurs because a verb's object function is filled by a bare nominal.

In the case of Maba, the result is a complex interaction at the clausal level, i.e. *within constructions*, between singulative and pluractional marking on the verb (or the absence of this derivational strategy) and number marking on the noun (functioning as subject or object and also involving singulative, plural, transnumeral and distributive forms).

3. From iterative marking to number marking in Maasai (Nilo-Saharan)

Whereas there is no general agreement on the classification of Nilo-Saharan, or the question of which specific language groups belong to this phylum or not, smaller units such as Maban and Nilotic have long since been recognised, and the membership of individual languages to these groups is undisputed. Nilotic as a genetic unit was first proposed by Köhler (1948), who also suggested a three-way distinction between an Eastern, Southern, and Western Nilotic branch.

Nilotic is another (Northeastern) Nilo-Saharan branch with a rich system of number marking for nouns, as illustrated in Dimmendaal (2000). Pluractional marking on verbs is attested in Western and Southern Nilotic, and consequently can be reconstructed for their common ancestor, Proto-Nilotic, as shown by Reh (1991). In her survey of the phenomenon for this family, Reh (1991) describes a derivational strategy for the Western Nilotic language Anywa which she calls "frequentative marking". The frequentative adds a notion of plurality to the predicate in Anywa, and hence is referred to as pluractional marking in the present study. Synchronically, pluractional marking in Anywa is realised by root-internal consonant and vowel alternation, as shown by the following examples:

(15) *lùum ā-ɲàar-gí*
grass PAST-cut-3PL
'they cut the grass'

(16) *lùum ā-ɲàcc-gí*
grass PAST-cut:PLUR-3PL
'1. they cut the grass repeatedly; 2. they [i.e. each of them] cut the grass'

Reh (1991: 15) reconstructs a pluractional suffix *-CVN (i.e. a morpheme consisting of an obstruent plus vowel and nasal) for Proto-Nilotic. Reflexes of this marker are attested

elsewhere in Western Nilotic, but also in the Southern Nilotic language Kalenjin, where there is a suffix *-chiin*, or *-chin-en*. The additional suffix *-en* in the second form expresses simultaneous action (a function still found synchronically in this cluster). Kalenjin forms one of the two primary branches of Southern Nilotic, the other primary branch being formed by the Omotic-Datooga cluster. Recent research has made it clear that pluractional marking on the verb is also found in the latter cluster. It is expressed by way of internal morphology rather than with a suffix, as in Kalenjin. For example, Kießling, Mous and Nurse (2008: 208) point out, for the Southern Nilotic Datooga branch, that plurality of the object triggers plurality marking on the verb:

(17) *lôodạ̊* *ŋûtạ̊*
pull.out:IMP:SG spear
'pull out the spear!'

(18) *lóotà* *ŋútkâakạ̊*
pull.out:PLUR:IMP.SG spears
'pull out the spears!'

These examples again illustrate the close interaction at the syntactic level between number marking on object nouns and plural action marking on the verb, a phenomenon which can also be observed in various other languages belonging to different language families, as discussed in Section 4 below.

It is exactly such construction-level effects, emerging from the interplay between plural subjects (rather than objects) and plural action marking on the verb, which have led to a reinterpretation of the system in one Eastern Nilotic language, Maasai, namely repetitive action marking. Pluractional marking as such has probably disappeared from the Eastern Nilotic branch of Nilotic, but the actual suffix is still found as an iterative suffix *-(y)ɛn-ɛn* (plus allomorphs) in at least one cluster within this subbranch, the Teso-Turkana branch, as pointed out by Reh (1991). Maasai belongs to the Lotuxo-Maa cluster within Eastern Nilotic. Maa is the common name for a number of lects, including Maasai, Samburu and Chamus. These languages are characteristic of Nilotic and many other Northeastern Nilo-Saharan branches in that they have a rich number-marking system for nouns. As shown by Tucker and Mpaayei (1955: 175–187) for Maasai, this system again involves a tripartite division between singulative, replacement, and plural marking. More recently, Maasai has been investigated in detail by a research team directed by Doris Payne. Part of the data on verbal reduplication in Maasai below derives from this database.[4]

Repetitive or iterative action, commonly expressed by way of reduplication of the verb root in Eastern Nilotic, has formed the basis for a new type of second person

4. Data on Maa was compiled by Doris Payne in a research project partially supported by NSF grant SBR-9809387 and by grants from the U.S. Fulbright Foundation.

plural marking in Maasai, as argued below. In order to understand how the reinterpretation has taken place, some structural properties of verbs in Eastern Nilotic need to be explained first.

Southern and Western Nilotic languages use distinct person-marking affixes or clitics on the verb in order to distinguish between first, second and third person singular versus first, second and third person plural, as shown in the typological survey of Tucker and Bryan (1966: 469–472). Rottland (1982: 243) reconstructs the following person-marking prefixes for Proto-Southern Nilotic.

	Singular	Plural
1	**a*	**kɪ/*kɛ*
2	**ɪ*	**ɔ*
3	**kɔ*	**kɔ*

One of the features setting the Eastern branch of Nilotic apart from Southern and Western Nilotic is the marking of number on verbs by way of suffixes, at least for second and third person plural. Cognate person-marking prefixes between Southern and Eastern Nilotic are therefore found for the singular and the first person plural marker only. The following imperfective present paradigm for the verb 'build' in the Eastern Nilotic language Teso (Dimmendaal 1991: 291) illustrates this pattern:

	Singular		Plural	
1	*a-duk-i*	'I am building'	*ki-duk-i*	'we are building'
2	*i-duk-i*	'you (sg) are building'	*i-duk-e-te*	'you (pl) are building'
3	*e-duk-i*	'(s)he is building'	*e-duk-e-te*	'they are building'

The second person plural suffix *-te* in the paradigm above probably goes back to an (encliticised) form of the 2nd person plural independent pronoun, as suggested by the following cognates from Eastern Nilotic languages belonging to different primary branches (Vossen 1982):

	Second person independent pronoun
Bari	*ta*
Lotuxo	*ɪtai*
Maasai	*ɪtaɪ*

In Teso, the vowel in the second person plural number suffix on the verb is subject to assimilation to preceding vowels (as in the paradigm below. But the original form (**-ta*) is still found in the imperatives in this language (as well as in other Eastern Nilotic languages):

	Singular	Plural	
Bari	*ɓɔkɛ*	*ɓɔkɛ-ta*	'dig!'
Lotuxo	*ɔ-ɓwax-a*	*ɔ-ɓwax-a-ta*	'dig!'
Teso	*kɔ-bɔk*	*kɔ-bɔk-ata*	'dig!'

But in Maasai the system developed in another direction. Whereas Maasai retained the original Eastern Nilotic second person pronoun as an independent pronoun, its use as a verbal suffix (or enclitic) in corresponding verb paradigms has become restricted to the imperfective progressive, formed by means of a suffix *-ɪta/-ito* (depending on vowel harmony rules in the language).[5] This is illustrated with the verb ɪrrag 'lie down'.

	Singular		Plural	
1	*a-ɪrrag-ɪta*	'I am lying down'	*k-ɪrrag-ɪta*	'we are lying down'
2	*ɪrrag-ɪta*	'you are lying down'	*ɪrrag-ɪta-**ta***	'you are lying down'
3	*e-ɪrrag-ɪta*	'(s)he is lying down'	*e-ɪrrag-ɪta*	'they are lying down'

In other paradigms in this Eastern Nilotic language, the second person plural is expressed by reduplicating the verb root, as shown by the following imperfective paradigms with the verbs 'eat' (*nya*) and 'acquire' (*túm*), respectively.

	Singular		Plural	
1	*á-nyá*	'I eat'	*kɪ-nyâ*	'we eat'
2	*í-nyá*	'you eat'	*í-nyányà*	'you eat'
3	*ɛ́-nyá*	'(s)he eats'	*ɛ́-nyá*	'they eat'
1	*á-túm*	'I acquire'	*ki-tum*	'we acquire'
2	*í-túm*	'you acquire'	*í-túm-ú-túmù*	'you acquire'
3	*é-túm*	'(s)he acquires'	*é-túm*	'they acquire'

These reduplicated verb roots have an interesting parallel in other Eastern Nilotic languages, namely as the formal expression of repetitive verb forms, for example in Turkana. Dimmendaal (1983: 104–107), who refers to this derivational strategy as the intensitive, also points out, however, that repeated action is usually involved. In Turkana, the epenthetic vowel of such reduplicated stems is *-ɪ/i-* with vowel-final verb roots; in other environments the epenthetic vowel assimilates to the vowel of the verb root:

(19) *da* 'thrash' *daɪda* 'crumple'
pet 'kick' *petepet* 'kick repeatedly'

With dynamic verbs in Maasai, the epenthetic vowel in the reduplicated stem for the second person plural also assimilates to the vowel of the verbal root ending in a consonant, as illustrated for the imperfective paradigm for *túm* 'acquire' above. With roots ending in a vowel, the vowel disappears, as shown in the paradigm for *nya* 'eat'

5. The term 'imperfective' is taken from König (1993), who reanalysed the system proposed by Tucker and Mpaayei (1955). In this earlier study, this TAM form is referred to as the 'present', while Tucker and Mpaayei's 'past' and 'continuous' are referred to as 'perfective' and 'progressive', respectively, by König.

above. Interestingly, the epenthetic vowel is *-ɪ-/-i-* (depending on whether the vowels of the verbal root belong to the [–advanced tongue root] or the [+advanced tongue root] class) for the second person plural with *stative* verbs in Maasai, as with the paradigm for rɔ́k 'be black':

1	*á-rɔ́k*	*kí-rɔɔ́k*
2	*í-rɔ́k*	*í-rɔ́k-í-rɔ́kɔ̀*
3	*ɛ-rɔ́k*	*ɛ-rɔɔ́k*

The fact that stative verbs in Maasai have also been affected by the innovation for second person plurals shows that reduplication has been dissociated from event repetition in Maasai, and that it has become an indicator of second person plural marking. However, full reduplication still exists as a lexical-derivational strategy marking repetition of some action or process – but with a subtle phonological difference. With these latter, derived verbs the epenthetic vowel does not assimilate:

(20) *a-gor-i-goró* 'be angry-ish' (root: *goro* 'be angry')

As illustrated by Turkana examples with vowel-final roots such as *da* 'thrash' in (19) above, the epenthetic high vowel in these reduplicated verbs is a retention. Whenever the stem came to be used with a second person plural interpretation in Maasai, a sound change (namely complete assimilation of the epenthetic vowel) occurred with dynamic verbs. This presumably has to do with the high frequency of such reduplicated forms. This skewed distribution of vowel assimilation with epenthetic vowels in Maasai has a parallel with causative formation in other Eastern Nilotic languages. For example, the degree of vowel assimilation with causative prefixes in the Eastern Nilotic language Karimojong depends on whether the prefix is added to a dynamic or a stative verb, as shown in Dimmendaal (2011: 101–102). Full assimilation of the prefix vowel is obligatory with dynamic verbs, but optional with stative verbs in Karimojong:

(21)	a.	*rereŋ*	'be happy'	*ito-rereŋ* *ite-rereŋ*	'make happy'
	b.	*lilim*	'be cold'	*ito-lilim* *iti-lilim*	'cause to be cold'

Causative formation is presumably less common with stative than with active verbs. Hence, the assimilation has to do with frequency of use. Again, it is known from various studies that frequency of use and the corresponding speed with which words are pronounced influences the pronunciation of those words (see, for example, the discussion in Dimmendaal (2011: 54–58)).

A verbal derivational strategy, repetitive or pluractional marking, thus probably formed the basis for the inflection of the second person plural subject (with dynamic as well as stative verbs) in Maasai. However, perfective constructions were not affected by this change, as shown for *ɪrrag* 'lie down' below.

	Singular		Plural	
1	*a-ɪrrag-a*	'I lay down'	*k-ɪrrag-a*	'we lay down'
2	*ɪrrag-a*	'you lay down'	*ɪrrag-a*	'you lay down'
3	*e-ɪrrag-a*	'(s)he lay down'	*e-ɪrrag-a*	'they lay down'

This further suggests that the interpretation of number as a feature interacts with tense-aspect marking. In a perfective construction, the focus of attention is presumably on the completion of an event affecting a singular or plural object, rather than on the nature of the actual occurrence. See Payne & Kotikash (2008) for further data.

A number of "circumstantial factors" probably contributed to this reinterpretation of a derivational strategy as an inflectional strategy, i.e. from marking plural events towards marking plural arguments, in Maasai. First, the formal similarity of the plural number suffix *-ta* to the preceding imperfective aspect marker (*-ɪta*) suggests a reduplication pattern for second person plural marking (*-ɪta-ta*). Second, there is a semantic affinity between actions being carried out several times (i.e. repetitive marking as a derivational strategy, expressed by means of reduplication of the root) and actions being carried out by plural agents (e.g. second person plurals). Third, the subject prefixes for second and third person are invariable with respect to number, i.e. they only express second person or third person subject, and do not provide information on whether this subject is singular or plural, thereby leaving space for ambiguity and hence for more than one interpretation. Fourth, independent subject pronouns in Maasai may help to disambiguate this situation, but they are normally omitted and are used only for pragmatic reasons, e.g. reference tracking, topicalisation or focus marking.

The Maasai case has been the focus of the present contribution because it is exemplary for a range of languages where such reinterpretations appear to have occurred. One such additional case is discussed below.

4. Pluractional marking as non-canonical number marking

Pluractional marking on verbs, as illustrated for a number of Nilo-Saharan languages above, is also found in Niger-Congo, as well as in Afroasiatic languages belonging to the Chadic and Cushitic branches. Newman (1990) gives a detailed account of this derivational property in Chadic, and also shows that verbal strategies are perfectly compatible with extensive number marking on nouns functioning as core constituents in predications. Newman (1974:72) also points out that in the Chadic language Kanakuru, one set of verbs is "number-sensitive and obligatorily agree[s] in number with the direct object of a transitive sentence, or with the subject of an intransitive sentence". Newman (1990:70) gives the following examples:

(22) *nà bòi kom*
1SG shoot rat
'I shot a rat'

(23) *nà bùpè komen*
1SG shoot:PL rats
'I shot rats'

Historically, this hardening rule for these Kanakuru verb stems is a reflex of a derivational strategy for pluractional marking involving gemination (Newman 1990: 70).[6] But in Kanakuru, this type of pluractional marking has been reinterpreted as an inflectional marking. Kanakuru and other Chadic languages are not unique in this respect. In the Nilotic Datooga cluster, for example, plurality of the object triggers pluractional marking on the verb, as illustrated in Example (18) above. A similar pattern occurs in the Cushitic language Konso (Maarten Mous, personal communication). Such reinterpretations of derivational strategies as inflectional strategies may also be one of the reasons why there is usually more than one formal strategy of pluractional marking. Kießling, Mous and Nurse (2008: 206) point out that in Southern Cushitic, for example, there are five verbal derivational suffixes marking the plurality of the subject or the object, depending on the transitivity of the verb.

Kießling, Mous and Nurse (2008: 206–210) also present an elegant account of pluractional marking in Sandawe (a language spoken in Tanzania, which is probably genetically related to Central Khoisan (Güldemann & Elderkin 2010)). The authors interpret this strategy in Sandawe as an instance of areal contact with Southern Cushitic and Southern Nilotic languages. Interestingly, Sandawe "… lacks any means of nominal number marking, plurality of the core participants of a predication being *exclusively* marked on the verb either by deriving a plural stem by the plural stem suffix *-waa* or by replacing the singular stem by a suppletive plural stem" (Kießling, Mous & Nurse 2008: 209).

(24) *tʃí dìyá-s màntʃà-a*
I egg-S1SG:PERF eat-SG
'I have eaten an egg'

(25) *tʃí dɪ̀yá-s màntʃà-wàa*
I egg:S1SG:PERF eat-PL
'I have eaten eggs'

6. The inverse process, the reinterpretation of inflectional as derivational processes, is attested as well, for example with respect to gender marking in Nilotic. In Southern and Western Nilotic, masculine and feminine gender marking is a derivational property, whereas in Eastern Nilotic it has developed into an inflectional feature. Such reinterpretations again probably emerge from sentence-level reinterpretations of constructions, but cannot be elaborated upon here for reasons of space.

Kießling, Mous and Nurse (2008: 208) assume that this feature spread from pre-Sandawe into Southern Cushitic and Southern Nilotic. But this is rather unlikely, since the pluractional marker in Southern Nilotic Datooga is a direct reflex of the corresponding Proto-Nilotic marker (discussed above). Moreover, the authors assume that in "… West Rift Southern Cushitic and Southern Nilotic there is no specific need for it, since a differentiation of number in the nominal arguments of the verb is already taken care of by the complex morphological apparatus of nominal plural and singulative derivation." But as the above account of the Nilo-Saharan language Maba shows, extensive canonical number marking on nouns is perfectly compatible with non-canonical number marking, i.e. with pluractional and singulative marking on the verb.

Steeman (2012: 61), in his grammatical description of Sandawe, points out that nouns in this language have no regular morphological encoding of number, apart from a few human nouns and agent nouns derived from verbs ; a third class of human nouns consists of plural noun roots. Moreover, all definite plural nouns referring to humans contain an obligatory plural marker *-so*, which follows the definiteness marker. Steeman (2012: 184) also points out that the so-called plural object marker in Sandawe has two functions, both as an inflectional marker coding plurality of the object participant, and as a marker coding plurality of action. This parallels the systems described for the Chadic language Kanakuru and the Cushitic language Konso above.

(26) *gòrò=sì* *ŋ||úŋ-kù-wá-á*
pillar=1SG stand_up-CAUS1-PL1-3O
'I have erected pillars'

The presence of pluractional marking even in a genetically and geographically rather isolated language like Sandawe (whose distant relatives are found in Southern Africa), and the presence of this morphosyntactic property in a linguistic isolate like Laal, spoken in southern Chad, suggests that we are dealing with an archaic areal feature of African languages. Boyeldieu (1982: 91–92) describes a system of root-internal alternation for the linguistic isolate Laal, involving singular versus plural subjects (regardless of person).

(27)

singular subject	plural subject	
ɲá:	*ɲí:*	'let, abandon'
ká	*kí*	'give'

These examples again illustrate the close interaction at the syntactic level between number marking on subjects and/or objects, and pluractional marking on the verb, in a range of languages belonging to different language families, including genetic isolates. The widespread distribution of this type of "non-canonical" number marking on the African continent suggests that we are dealing with an archaic property of languages

belonging to different phyla, regardless of whether these have rich "canonical" number marking on nouns or not.

One additional striking property of pluractional marking is the frequent occurrence of irregular or suppletive alternations, as already illustrated for Laal above. Kutsch Lojenga (1994: 283) gives examples from the Central Sudanic (Nilo-Saharan) language Ngiti:

(28) singular pluractional
aràta *owuta* 'go'

But many more examples can be cited from other languages belonging to different language families. For example, König (2009: 30) reports fourteen transitive and intransitive verbs with suppletive singular/plural alternations in the Northern Khoisan language !Xun. This widespread tendency, together with the fact that pluractional marking is occasionally reinterpreted as an inflectional feature ("agreement"), suggests that construction-level effects are at work. The frequent lexicalisation and development of suppletive pluractional marking stems, alongside the fact that there is usually more than one formal strategy for pluractional marking, also suggest that this grammatical domain is subject to a high degree of communicative dynamism.

Pluractional marking is not, of course, unique to African languages. Aikhenvald (2012: 154–155) discusses this phenomenon for Amazonian languages (as an areal grouping) in South America. For example, in Jarawara, verbs like 'fall' have distinct singular and plural forms depending on whether the subject is singular or non-singular:

(29) *awa* *sona-ke*
tree fall-DECL
'a tree fell over'

(30) *awa* *foro-ke*
tree fall:PLUR-DECL
'several trees fell over'

Dixon (2012: 63) points out that this phenomenon is in fact widespread cross-linguistically.

The semantic interaction between number marking on syntactic arguments such as subjects and verbs, or objects and verbs, requires a concept of grammar that allows, first, for the kind of semantic interpretations discussed above, such as transnumeral or pluractional marking, and second, for occasional reinterpretations of pluractional marking as agreement marking, i.e. of a derivational process as an inflectional process. These various processes require a constructionist approach, i.e. a conceptualisation of grammar in which all structural aspects are integrated parts, rather than being distributed over different modules, as they are in a componential model.

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