

# On Singulatives in Nilotic Languages

OSAMU HIEDA

*Institute for the Study of Languages and Cultures of Asia and Africa*

All three branches of the Nilotic language family use the 'singulative' formation in nominal morphology.

In the Proto-Western Nilotic language, singulative forms were derived from stems by attaching suffixes -O or -nO; the suffix -nO was attached to stems ending in a voiced stop consonant. The alveolar nasal of the suffix nasalized the preceding voiced consonant.

In Eastern Nilotic languages, singulative forms are derived from stems by attaching a number suffix -I/-i, which is accompanied by a formative suffix -Ak/-ok; they can also be derived by attaching a number suffix -A/-o, which is sometimes accompanied by a formative suffix -(V)t. The velar voiceless stop consonant becomes an alveolar nasal intervocally.

In Southern Nilotic languages, singulative forms are derived from stems by attaching a suffix -(y)an.

Other examples, such as 'cattle', 'animal', and 'people' use suppletion to distinguish singular from plural forms. The singular forms of these nouns originated from archaic singulative forms in the Proto-Nilotic language. For example, in the Maasai language, En-kItEng' 'cow': PN \*(kwI)-r<sub>1</sub>Eg-Ak-I (singulative) > (kwI)-r<sub>1</sub>Eg-An-I > (kwI)-r<sub>1</sub>Eg-n-I > (kwI)-r<sub>1</sub>Eng'-n-I > (kwI)-r<sub>1</sub>Eng'-I > (kwI)-r<sub>1</sub>Eng'

**Key words:** Historical linguistics, Nilotic, nominal morphology, Proto-Nilotic, singulative.

## 1. INTRODUCTION

This paper is intended to demonstrate the existence of the 'singulative' formation of nouns in Nilotic languages, and to reconstruct the formation of the singulative forms in the proto-language.

No previous studies have been entirely successful in reconstructing the Proto-Nilotic sound system, because they centered only on sound correspondences without considering morphology. For example, Vossen (1982) reconstructed a number of consonants such as \*n1, \*n2, and \*n3 in the same manner of articulation, and at the same point of articulation. Ehret (2001) asserted that those reconstructed sounds were environmentally conditioned allophones of a phoneme.<sup>(1)</sup> However, Vossen (1982) reconstructed a number of consonants in the same manner of articulation and at the same point of articulation based on false correspondence, by comparing forms of different categories. For example, he compared a singular form in one language with a singulative form in another language, or a plural form in one language with a plural form in another language, which are derived by using different formations. This paper should correct mistakes made in previous studies and lay the

groundwork for a reconstruction of the Proto-Nilotic language.

### 1.1. Nilotic languages

Nilotic languages are spoken in East African areas such as South Sudan, Ethiopia, Uganda, Kenya, North Tanzania, and part of Congo. The Nilotic languages, which constitute a major branch of Nilo-Saharan language phylum, are divided into three sub-groups: Western, Eastern, and Southern languages (Figure 1). Figure 1 lists only the names of languages mentioned in the paper; it does not cover all Nilotic languages.

Figure 1. Nilotic languages.

---

Western languages: Nuer (Nu), Dinka (Di), Shilluk (Sh), Anywa (An), Pari (Pa), Luo (Lu), Acholi (Ac), Lango (La)

Eastern languages: Bari (Ba), Teso (Te), Turkana (Tu), Karimojong (Km), Lotuxo (Lo) (Dong'otono (Do), Lokoya (Lk), Lopit (Lp) dialects), Maasai (Ma), Sampur (Sa), Ongamo (On), Camus (Ca)

Southern languages: Nandi (Na), Kipsikiis (Ki), Kony (Ko), Akie (Ak), Pokot (Po), Datooga (Da)

---

(Languages are listed randomly, and their order is not based on any judgment by the author. Hereafter abbreviations are used to represent languages and dialects.)

### 1.2. What is a 'singulative'?

In general, morphologically simpler noun forms are used when referring to a single entity, and morphologically more complex forms are used when referring to more than two entities. Some languages, however, contain cases in which morphologically more complex forms are used to refer to a single entity. Some examples in Luo (a Western Nilotic language) are shown in (1).

#### (1) Singulatives in the Luo language

Lu	sg.	pl.	
	wl.ny-O	wl.ny	'bird'
	kO.ng'-O	kwO.ng'	'beer'
	ri.ng'-o	ri.ng' / ringe	'meat'
	u.n-o	u.n / u.nde / unni	'rope' (2)

The noun meaning 'bird' apparently has a morphologically marked or complex form in the singular, because the singular form is obtained by attaching a suffix -O/-o to a stem. The noun meaning 'beer' also has a singular form obtained by attaching a suffix -O/-o to the plural form, but the singular form contains a simple stem vowel, while the plural form contains a complex stem vowel accompanied by a glide. Therefore, it is not easy to determine which form of the noun meaning 'beer' is morphologically unmarked or simpler with regard to stem vowels. The plural forms of the nouns meaning 'meat' and 'rope' contain several allomorphs. When compared with the allomorphs in the left column, the singular forms are apparently marked and morphologically complex, but when compared with other allomorphs one may not simply assume that the singular forms are marked or more morphologically complex than the plural forms. Similar examples occur in Shilluk (a Western Nilotic language).

#### (2) Singulatives in the Shilluk language

Sh	sg.	pl.	
	tyEl-O	tyEl	'foot, leg'
	rej-o	ric	'fish'
	nywog-o	nywok	'louse'
	lEl-O	lEl	'small pebble'

When referring to existence, if a singular form is marked and a plural form is unmarked, the marked form indicating the singular is called 'singulative'. As the examples from the Luo and Shilluk languages showed, however, it is not easy to determine whether a singular form is marked or unmarked simply by comparing forms on surface. For this reason, it is preferable to define a singulative in terms of derivation. When a singular form is derived from a plural or other form, we call it a 'singulative'.

Nouns with singulative forms have semantically some general characteristics. For example, they tend to refer to small items that generally exist in mass quantities, such as food and pebbles ('meat' in Luo and 'small pebble' in Shilluk); living beings that generally exist in groups, such as animals, birds, and human beings ('bird' in Luo and 'fish' and 'louse' in Shilluk); and things that exist in pairs, such as body parts ('foot, leg' in Shilluk).

These things usually exist in numbers in the natural world; when indicating these types of things without referring to a number, it is natural to use the plural rather than the singular form. The number denoted by this plural form is called a 'general number,' a 'transnumeral,' or a 'unit reference.' A singulative form is used when specifying that an object is singular and does not exist in the form of a general number; see Figure 2 (A). In contrast, if something usually exists singly in the natural world, it is natural to use a singular form when indicating it, without referring to a number, i.e., referring to a general number, transnumeral, or unit reference. In such a case, a plural form is employed to indicate specific plurality; see Figure 2 (B). In general, no specific form indicates a general number.<sup>(3)</sup>

Figure 2. Categories of number and forms.

A) Things that exist in mass quantities	
Number category	Form
Singular	Singulative form
General number + plural	Plural form
B) Things that exist singly	
Number category	Form
Singular + general number	Singular form
Plural	Plural form

## 2. SINGULATIVES IN NILOTIC LANGUAGES

### 2.1. Singulatives in Western Nilotic languages

#### 2.1.1. The Luo language

No previous study has suggested that the Luo language contains singulatives. Tucker (1994) pointed out that some suffixes are attached to stems in the singular, but was not able to determine their function.

#### (3) Suffixes in the singular in the Luo dialect

Lu	sg.	pl.	
	kEdh-nO	kEthE	'bile'
	keg-no	ko.ke	'nail, claw'
	lwAng'-nI	luange, luenge	'fly'
	thlw-nI	thI.pE	'small chain'
	jAm-nI		'cattle as possession' <sup>(4)</sup>

The examples shown in (3) imply the following: the suffixes pointed out by Tucker (1994) consist of a nasal and a vowel; all plural forms in the Luo language are formed after a regular plural formation; some forms with suffixes can presumably be regarded as singulatives. The singular of the noun meaning 'fly' refers to an individual as well as a group of individuals of the same species. The plural, on the other hand, refers to groups of different species.

The suffix -nI/-ni in (3) has the same form as the plural suffix (-nI/-ni for making plural forms: pAIA (sg.), pel-ni (pl.) 'knife'), suggesting that forms with the suffix -nI/-ni, originally a plural suffix in collective usage, have come to be regarded as singular forms. The suffix -nO/-no remains unsolved; it is still too early to conclude that it is a singulative suffix. Because suffixes are also attached to the plurals, it is difficult to claim that forms with the suffix -nO/-no are morphologically more complex than the plural forms.

A few forms can be considered singulative in terms of morphological complexity; see examples in (1). In the Luo language, however, plural forms are actually derived from any form of singular (whether singular or singulative) following regular plural formation; this constitutes a historical innovation in the Luo language. Exceptions are the nouns meaning 'bird' and 'beer' and allomorphs of the nouns meaning 'meat' and 'rope' in (1), which do not follow regular plural formation<sup>(5)</sup> but, instead, maintain archaic plural forms. The forms indicating singularity of these nouns are considered singulatives.

The Luo language also contains a few nouns with singular and plural forms distinguished by suppletion.

(4) Singulars and plurals using suppletion

Lu	sg.	pl.	
	dA.nA / dA.yO	da.ye	'grandmother'
	dhA.nA	ji	'person'
	dhIAng'	dhO.k	'cow, cattle'
	gi(n)	gik	'thing'

A plural form is generally used when mentioning 'cow' without referring to number; a singular form is used when specifically indicating 'one individual cow'. Similarly, a plural form is used when mentioning 'people' without referring to number (i.e., expressing with a general number). Therefore, the forms listed in the left column of (4) are probably 'singulatives.'

In summary, the Luo language includes two or three types of singulative formation. Singulative forms are obtained by attaching -nO/-no or -O/-o to stems, and the other singulative formation has now become suppletion. The historical plural formation innovation makes it difficult to find the archaic type of singulative formation in the Luo language. The next section will use examples from the Shilluk language to examine this issue more closely.

2.1.2. The Shilluk language

No previous study has found singulatives in the Shilluk language. Kohnen (1933) observed that some plural forms were obtained by dropping a vowel at the word-final position in singular forms; see (5).

(5) Singulatives in the Shilluk language

Sh	sg.	pl.	
	tyElo	tyEl	'foot, leg'
	rejo	ric	'fish'
	ng'uro	ng'urr	'gad-fly'
	nywogo	nywok	'louse' <sup>(6)</sup>
	lElo	lEl	'small pebble'

The singular forms listed above are marked, based on morphological complexity. These nouns also display semantic characteristics possessed by nouns with singulative forms, as discussed in the previous chapter.

A few nouns also have singular forms, suffixed by the vowel -i.

## (6) Plural forms in collective usage

Sh	sg.	pl.	
	deted-i	detet	'long pole for pushing boats'
	dekag-i	dekakki	'stick for digging the ground'

The singular suffix -i has the same form as the plural suffix in regular plural formation of the Shilluk language. The singular forms listed above are originally plural forms and are used in order to refer to a group of the same kind.

Several nouns also have singular forms that are not only suffixed with a vowel -o but also end with nasalized consonants at the stem-final position.

## (7) Singulatives accompanied with nasalization

Sh	sg.	pl.	
	(o)yino	yith	'fisherman'
	bun	budi	'parcel, part'
	kwanyo	kwac	'fish-scale'
	yung'o	yuk	'fire-wood'
	dhano	ji	'man, human kind'
	dhyang'	dhok	'cow'
	gin	gik	'thing'

The noun meaning 'fire-wood' is usually used in a plural form. When it is used in a singular form, it signifies 'a piece of wood'; this singular form can be considered 'singulative.' The nouns listed above share semantic characteristics with nouns that possess singulative forms. The forms representing singularity in (7), i.e., those affixed with a vowel -o together with nasalized consonants at the stem-final position, can be considered 'singulatives.'

The nasalization at the stem-final position is rather similar to that in the plural formation of the Nuer language, referred to as 'N-plural'.

## (8) N-plural in the Nuer language

Nu	sg.	pl.	
	gwak'	gwang'eni / gwageni	'fox' <sup>(7)</sup>
	jith	kejienhi	'ear'

The noun meaning 'fox' has two allomorphs of the plural form: one has a non-nasalized voiced consonant at the stem-final position; the other has a nasalized consonant. The noun meaning 'ear' has a plural form with a nasalized consonant at the stem-final position. The plural formations of these nouns are as follows:<sup>(5)</sup>

## (9) N-plural formation in the Nuer language

Nu	gwak' (sg.)		
I Rule 5	gwak' eni		
Rule 2	gwag eni (pl.)	Rule 2'	gwang' eni (pl.)
Nu	jith (sg.)		
I Rule 5	jith ni		
Rule 2'	jinh ni		
N-drop	jienh i (pl.)		

IRule 5 is a rule for attaching the plural suffix -eni or -ni to a stem in plural formation. When a stem ends in a voiceless stop consonant (described as a consonant accompanied by a glottal stop), the suffix -eni is attached to a stem. When a stem ends in anything other than a voiceless stop consonant (described as a consonant without a glottal stop), the suffix -ni is attached to a stem. Rule 2 is a rule for vocalizing a consonant at the stem-final position, and Rule 2' is a rule for nasalizing a consonant at the stem-final position. Plural formation



## 2.2. Eastern Nilotic languages

### 2.2.1. The Maasai language

No previous studies have indicated that the Maasai language contains singulatives. Nevertheless, Tucker & Mpaayei (1955) observed that some singular forms might have been derived from their plural forms by attaching suffixes, -i, -a, -o, and -ni. According to the definition of singulative discussed in the previous chapter, the Maasai language does contain singulatives.

#### (13) Singulatives in the Maasai language

sg.	pl.	
(a) Ol-AgUEt-An-I	Il-AgUEt-Ak	'carpenter' (A-gUEt 'to sharpen')
ol-aimonk-on-i	il-aimonk-ok	'liar'
enk-ala-on-i	ink-ala-o	'ant'
e-modi-o-i	i-modi-ok	'cow dung'
(b) Enk-AkEny-A	lnk-AkEny	'morning'
em-bolot-o	im-bolot	'opening' (a-bol 'to open')
Ol-mAng'AtInt-A	Il-mAng'AtI	'enemy'
(c) Ol-cAnI / Ol-cAtA	Il-kEEK	'tree'
En-kItEng'	in-kishu	'cow, herd of cattle'

The nouns listed above display semantic characteristics possessed by nouns with singulatives, as discussed in section 1.2. The singular forms are morphologically more complex than the plural forms. In (13.a), singular forms are obtained by attaching a formative suffix -Ak/-ok and a number suffix -I/-i to stems. The velar voiceless stop sometimes turns to an alveolar nasal (cf. singular forms for 'carpenter', 'liar' and 'ant'), and sometimes drops intervocally (cf. a singular form for 'cow dung'). Furthermore, it drops sporadically at the word-final position (cf. a plural form for 'ant'). The phonological changes mentioned above are probably determined suprasegmentally.

In (13.b), singular forms are obtained by attaching a formative suffix -At/-ot and a number suffix -A/-o. The formative suffix -At/-ot is not necessarily attached to a stem. In (13.c) singular and plural forms are distinguished using suppletion.

### 2.2.2. Singulatives in the Proto-Eastern Nilotic language

The singulative formation in other Eastern Nilotic languages seems to be nearly the same as that in the Maasai language (for details see Hieda, 2003). Eastern Nilotic languages contain two types of singulative formation: one type attaches a number suffix -I/-i to plural forms, accompanied by a formative suffix -Ak/-ok; the other type attaches a number suffix -A/-o to plural forms, sometimes accompanied by a formative suffix -(V)t; see (14). The functions and significance of these formative suffixes require more examination; in addition, it is not yet known what kinds of nouns use -I/-i or -A/-o to form singulatives.

The distribution of formative suffixes varies geographically in Eastern Nilotic languages; see (15).

#### (14) singulative formation in Eastern Nilotic languages

- (a) Stem → Stem - (-Ak/-ok) - I/-i (k > n or ∅ intervocally)  
(b) Stem → Stem - (-(V)t) - A/-o

#### (15) Geographical distribution of formative suffixes

	-Ak/-ok	-(V)t (-At/-ot)
Maasai	+	+ ?
Camus	trace	-
Lotuxo	- ?	+
Turkana	trace	+
Teso	trace	+
Karimojong	trace	+

Bari                      trace                      +

Certain examples cannot be fully explained by the formation given in (14). The examples in (16) have previously been regarded as distinctions between singular and plural forms using suppletion. Chapter 3 will discuss this issue in more detail.

(16) Singulars and plurals using suppletion

	sg.	pl.	
Ma	Ol-cAnI / Ol-cAtA	Il-kEEk	'tree'
	En-kItEng'	in-kishu	'cow, herd of cattle'
Ca	ng'kItEng'	ng'kicu	'cow'
Lt	EdhEng'	esung'	'cow'
Tu	A-ItE	ng'A-AtUk	'cow'
Te	A-kItEng'	a-kItUk	'cow'
Ba	kItEng'	kisuk	'cow'

2.3. Southern Nilotic languages: *The Nandi language*

Creider & Creider (1989) pointed out that the Nandi language contained a suffix *-i:n* yielding singular forms and a suffix *-(y)a:n* yielding singulative forms. The suffix *-i:n* is attached to a verb stem in order to derive an agent noun (ka:sup-i:n 'follower' < ki:sup 'to follow'). The form accompanied by *-i:n* is also used to denote a member of an ethnic group (na:nt-i:n 'a Nandi man'). The suffix *-(y)a:n* is used in a similar way, but when *-(y)a:n* is used with a noun depicting a person, it might have a pejorative connotation (ce:m-na:nti-ya 'Nandi woman (pejorative)').

(17) Singulatives in the Nandi language

sg.	pl.	
mur-ya:	mur	'rat'
pay-wa:	pay	'finger'
pe:ny	pany	'meat'
ka:lya:ng' (LM)	ka:lya:ng' (HF)	'fly' <sup>(9)</sup>
ke:t (L)	ke:t (H)	'tree'
kwe:n-to	kwe:n	'firewood'
po:l-ta	po:l	'cloud'

The suffix *-(y)a:n* can also be affixed to nouns depicting things other than human beings (cf. (17), an alveolar nasal drops at the word-final position). The nouns listed above display semantic characteristics possessed by nouns with singulatives. In (17) some singular forms are distinguished from plural forms by stem vowel or by tones (*-to/-ta* is a formative suffix, not a number suffix). A certain segmental element might be attached to singular or plural forms, but this matter requires further investigation.

The suffix *-i:n* is also affixed to a plural form (ce:-poran-ya: (sg.), ce:-poran-i:n (pl.) 'Borana woman').<sup>(10)</sup> Because the suffix has the same form as plural forms, a singular form with the suffix *-i:n* can be attributed to collective usage of a plural form.

(18) Plural forms in collective usage

sg.	pl.	
po:k-i:n	po:k	'Bok'
ce:p-isas-i:n	cep-isa:s	'fundamentalist' <sup>(10)</sup>

The examples listed in (19) have previously been regarded as distinctions between singular and plural forms using suppletion. Chapter 3 will discuss this topic in more detail.



## (19) Singulars and plurals using suppletion in the Nandi language

sg.	pl.	
tany (ss. te:-ta)	tic (sp. tu:-ka)	'cow' <sup>(11)</sup>
tye (ss. ce:p-ta)	ti:pin (sp. ti:p-i:k)	'girl'
ci: (ss. si:-ta)	pi:c (sp. pi:k)	'person'
ki(y) (ss. ki-it)	tukun (sp. tuku:k)	'thing'

Other southern Nilotic languages have a singulative formation that is nearly the same as that in the Nandi language (for details see Hieda, 2003). Singulatives in the Proto-Southern Nilotic language were obtained by affixing -(y)a:n to plural forms.

## (20) Singulative formation in the Proto-Southern Nilotic language

Stem → Stem-(y)a:n

## 3. SINGULATIVES IN THE PROTO-NILOTIC LANGUAGE

Chapter 2 examined singulatives in Western, Eastern, and Southern Nilotic languages, but the discussion did not present sufficient evidence to prove that the Proto-Nilotic language contained singulatives. This chapter will apply examples left unsolved by previous studies in an attempt to reconstruct singulative formation in the Proto-Nilotic language. These examples were previously regarded as nouns whose singular and plural forms were distinguished using suppletion.

(21) 'cow, cattle'<sup>(12)</sup>

EN: sg. / pl.	SN: sg. / pl.	WN: sg. / pl.
Ba kl-tEng' / ki-suk	Na tany / tuc	Nu yang' / ghok
Te A-kl-tEng' / A-ki-tUk	Ki tEE-ta(ss) / tuu-ka(sp)	Di weng' / ghOk
Tu A-I-tE / ng'A-A-tUk	Sa tany / toc	Sh dhyang' / dhok
Lo E-dhEng' / e-sung'	Po(Suk) tang' / toc	An dhIAng' / dhok
Ma eng'-kl-tEng'	Da tanyi / tukwa	Pa dhuang' / dhok
/ ing'-ki-shu		Lu dhIAng' / dhok
Ca ng'-kl-tEng' / ng'-ki-cu		Ac dyAAng' / dyang'i
PEN *k <sub>1</sub> I-tEng'	PSN *tany	La dyAng' / dyang'ng'i
/ *-k <sub>1</sub> I-t <sub>2</sub> U(k)		

(cf. PEN: Vossen, 1982; PSN: Rottland, 1982)

Observations: In all Nilotic languages, singular stems end in nasal consonants, and plural stems very rarely end in nasal consonants. This fact is reminiscent of the singulative formation in Western Nilotic languages. It is likely that the Proto-Nilotic language contained singulative formations; the singular forms listed above retain archaic singulative forms from the Proto-Nilotic language. Furthermore, some plural forms retain archaic forms from the Proto-Nilotic language, while others constitute innovations in the languages.

Using the discussion from the previous chapter, it is possible to attempt a reconstruction of the singulative proto-form for 'cow'.

## (22) Singulative form for 'cow' in the Proto-Nilotic language

Singulative: PN \*(kwI)-r<sub>1</sub>Eg-Ak-I > (kwI)-r<sub>1</sub>Eg-An-I (a) > (kwI)-r<sub>1</sub>Eg-n-I (b) > (kwI)-r<sub>1</sub>Eng'-n-I (c) > (kwI)-r<sub>1</sub>Eng'-I (d) > (kwI)-r<sub>1</sub>Eng' (e)

Notes: (1) The pre-stem element \*kwI- was discussed in Hieda (1983). (2) The reconstructed phoneme \*r<sub>1</sub> was discussed in Hieda (1989).

Historical changes: (a) k > n / V\_V (We can reconstruct the formative suffix -Ak and the singulative suffix -I. A velar nasal voiceless stop consonant became an alveolar nasal intervow-

cally; this phonological change can be observed in the modern Maasai language.) (b)  $V > \phi$  /  $\_\_\_n$  (This change is doubtful, but is required to lead the following assimilation.) (c)  $C > N$  /  $\_\_\_n$  (A voiced stop consonant was nasalized at the stem-final position by assimilating the succeeding alveolar nasal; this change occurs in the singulative formation in Western Nilotic languages.) (d)  $n > \phi$  /  $N\_\_\_$  (A nasal was dropped when followed by another nasal; this change also occurs in the singulative formation in Western Nilotic languages.) (e)  $I > \phi$  /  $\_\_\_\#$  (Southern Nilotic languages contain a front high vowel; the Datooga language maintains the vowel. The velar nasal at the stem-final position is palatalized before the front high vowel in most Southern Nilotic languages.)

Explanation: The singulative forms in Eastern Nilotic languages reflect the Proto-Nilotic singulative form  $*(kwI)-r_iEng'$ , to which gender prefixes are attached in all Eastern Nilotic languages other than Bari. The Proto-Nilotic  $*r_i$  appears as an alveolar voiceless stop in Eastern Nilotic languages.

The singulative forms in Southern Nilotic languages reflect the Proto-Nilotic singulative form  $*(kwI)-r_iEng'-I$ , which maintains the front high vowel at the post-stem position. The pre-stem element  $*kwI$  cannot be verified. The front mid vowel E became a diphthong IA by vowel breaking ((f)  $E > IA$  /  $\_\_\_CA$ ); this vowel breaking can be observed in the modern Maasai language. A diphthong IA is simplified into a low vowel A by vowel sandhi ((g)  $VIV2 > V2$ ). (Singulative: PSN  $*(kwI)-r_iEg-Ak-I > (kwI)-r_iIAg-Ak-I$  (f)  $> (kwI)-r_iAg-Ak-I$  (g))

The singulative forms in Western Nilotic languages reflect the Proto-Nilotic singulative form  $*(kwI)-r_iEng'$ . Western Nilotic languages contain the pre-stem element  $*kwI$ , because the  $*r_i$  from the Proto-Nilotic language appears intervocally as a dental voiced stop (an alveolar voiced stop in the Acholi and Lango languages and a semi-vowel or a uvular voiced fricative in the Nuer and Dinka languages). Most Western Nilotic languages contain vowel breaking and maintain a diphthong. Vowel sandhi occurs only in the Dinka language; a low vowel became a front mid vowel before a front high vowel using a kind of umlaut.

We can reconstruct the plural form for 'cow' in the Proto-Nilotic language; the reconstructed stem has the same form as the stem of the singulative form, except for the category of vowel.

#### (23) Plural form for 'cow' in the Proto-Nilotic language

Plural (1): PN  $*(kwi)-r_iEg > (kwi)-r_iEh$  (h)  $> (kwi)-r_iEu > (kwi)-r_iU$  (g)

Plural (2): PN  $*(kwi)-r_iEg-ok > (kwi)-r_iEh-ok > (kwi)-r_iEu-ok > (kwi)-r_iU-k$

Historical change: (h)  $*C [+voiced] > h [+voiced] > w, y, VV$  in Eastern and Southern Nilotic languages (the Proto-Nilotic language voiced stop consonants weakened to a semi-vowel or a part of a diphthong through a glottal voiced fricative.)

Explanation: The plural forms in the Maasai and Camus languages originated from Plural (1), and the plural forms in other Eastern Nilotic languages originated from Plural (2), which was composed of a stem and a formative suffix -ok. The plural forms in Southern Nilotic languages originated from Plural (2). The plural forms in Western Nilotic languages originated from Plural (2). Some Western Nilotic languages (i.e. Ac and La) contain innovative plural forms derived from singulative forms.

#### (24) Plural forms for 'cow' in Western Nilotic languages

Plural: WN  $*(kwi)-r_iEg-ok > (kwi)-r_iE-ok$  (i)  $> (kwi)-r_i-ok$  (g)

Historical change: (i)  $g > \phi$  /  $V\_\_\_V$  (A velar voiced stop dropped sporadically between vowels.)

#### (25) 'animal'

EN: sg. / pl.

Km e-thang'

Te E-tyang'

Tu E-tIAng'-It

SN: sg. / pl.

Na tya:n-ta

Sa tyon-tya / tyong'-kik

Po tya:ny

WN: sg. / pl.

Nu lei, leagh / leini

Di leei / laai

Sh lay / lai

Lo	a-cyang'	Da	tiyey-ta	An	laay / laai
Ma	Ol-cAng'-ItO / Il-cAng'-It			Pa	lay / layi
On	shang'-it'o / shang'-itin			Lu	le
Ca	l-cAng'-UtO / l-cAng'-It			Ac	lee / lee
Ba	kI-jAk-UtAt / kI-jAk-wA			La	le / le
PTLM	*tiang'	PK	*tya:ny		

Observations: In all Eastern Nilotic languages except Bari, and in all Southern Nilotic languages except Datooga, stems end with nasals in the singular. In Western Nilotic languages, stems do not end with nasals in the singular. This indicates that Eastern and Southern Nilotic languages use singulative forms to denote singularity for 'animal', and that Western Nilotic languages do not use a singulative form.

(26) Singulative for 'animal' in the Proto-Nilotic language

PN \*(kwI)-l<sub>1</sub>Eg-Ak-I > (kwI)-l<sub>1</sub>IAG-Ak-I (f) > (kwI)-l<sub>1</sub>IAG-An-I (a) > (kwI)-l<sub>1</sub>IAG-nI (b) > (kwI)-l<sub>1</sub>IANG'-nI (c) > (kwI)-l<sub>1</sub>IANG'-I (d) > (kwI)-l<sub>1</sub>IANG' (e)

Note: The Proto-Nilotic \*l<sub>1</sub> was discussed in Hieda (1989).

Explanation: The Proto-Nilotic \*l<sub>1</sub> appears as an alveolar, a dental, or a palatal voiceless stop in Eastern Nilotic languages except for Bari. The palatal voiceless stop suggests that it is followed by a front high vowel brought about by vowel breaking. The \*l<sub>1</sub> appears as an alveolar voiceless stop in Southern Nilotic languages and as a lateral in Western Nilotic languages. The singulative forms in Eastern Nilotic languages originated from the Proto-Nilotic singulative \*(kwI)-l<sub>1</sub>IANG'. In the Turkana, Maasai, Camus, and Ongamo languages, an additional suffix -(V)t is added to singulative forms. The Bari language did not maintain a singulative form.

Singulative forms in Southern Nilotic languages originated from the Proto-Nilotic singulative \*(kwI)-l<sub>1</sub>IANG'-I; a velar nasal is palatalized before a front high vowel. In the Nandi language, a palatal nasal becomes an alveolar nasal before an alveolar voiceless stop (-ta is a formative suffix). In contrast, a palatal nasal becomes a velar nasal before a velar voiceless stop in the Sapiny language. The Datooga language did not maintain a singulative form.

(27) Singulative in Southern Nilotic languages

Singulative (Po, Na, Sa): SN \*(kwI)-l<sub>1</sub>IANG'-I > tyā:ny (Po) > \*tyā:ny-ta > tyān-ta (Na, Sa)

Singular (Da): SN \*(kwI)-l<sub>1</sub>Eg-ta > tiyey-ta (h)

Western Nilotic languages do not use singulatives to denote singularity for 'animal.' Some use basic stems to denote singularity, while others use plural forms in collective usage to denote singularity.

(28) Singular in Western Nilotic dialects

Singular: WN \*(kwI)-l<sub>1</sub>Eg-I > IEE-I (i)

It is interesting that some of the Nilotic languages use singulative forms and others do not, to denote singularity for 'animal.' Nilotic languages share no common principle as to which nouns have singulative forms to denote singularity.

## Appendix

Due to space constraints, this appendix only examines the reconstruction of singulatives in the Proto-Nilotic language (for details see Hieda, 2003).

'person' (no singulative in Southern Nilotic languages)

Singulative: PN \*(kwV)-r<sub>1</sub>Ug-Ak-O > (kwV)-r<sub>1</sub>Ug-An-O (a) > (kwV)-r<sub>1</sub>Ug-nO (b) > (kwV)-r<sub>1</sub>Ung'-nO (c) > (kwV)-r<sub>1</sub>Ung'-O (d) > (kwV)-r<sub>1</sub>Ung' (e)

'breast'

Singulative: PN \*(kwI)-r<sub>1</sub>Ir<sub>2</sub>-Ak-O > (kwI)-r<sub>1</sub>Ir<sub>2</sub>-An-O (a) > (kwI)-r<sub>1</sub>Ir<sub>2</sub>-n-O (b) > (kwI)-r<sub>1</sub>In-n-O (c) > (kwI)-r<sub>1</sub>In-O (d) > (kwI)-r<sub>1</sub>In (e)

'egg' (only Western Nilotic languages have maintained singulatives)

Singulative: PN \*(kwV)-r<sub>1</sub>ul<sub>2</sub>-ok-i > (kwV)-r<sub>1</sub>uol<sub>2</sub>-ok-i (f) > (kwV)-r<sub>1</sub>uol<sub>2</sub>-on-i (a) > (kwV)-r<sub>1</sub>uol<sub>2</sub>-n-i (b) > (kwV)-r<sub>1</sub>uong'-n-i (c) > (kwV)-r<sub>1</sub>uong'-i (d) > (kwV)-r<sub>1</sub>uong' (e)

'fire' (only Bari and Lotuxo (Lokoya dialect) languages have maintained singulatives)

Singulative: PN \*(kwI)-mAg-Ak-I > (kwI)-mAg-An-I (a) > (kwI)-mAg-n-I (b) > (kwI)-mAng'-n-I (c) > (kwI)-mAng'-I (d) > (kwI)-mAng' (e)

'tree' (only the Lotuxo, Camus, and Maasai languages have maintained singulatives)

Singulative: PN \*kwEr<sub>2</sub>-Ak-I > kwIAr<sub>2</sub>-Ak-I (f) > kwIAr<sub>2</sub>-An-I (a) > kwIAr<sub>2</sub>-n-I (b) > kwIAAn-n-I (c) > kwIAAn-I (d) > kwIAAn (e)

'water' (only Bari and Lotuxo (Dongotono and Lopit dialects) languages have maintained singulatives)

Singulative: PN \*(kwi)-peg-ok-i > (kwi)-piog-ok-i (f) > (kwi)-piog-on-i (a) > (kwi)-piog-n-i (b) > (kwi)-piong'-n-i (c) > (kwi)-piong'-i (d) > (kwi)-piong' (e)

'skin' (only Eastern Nilotic languages have maintained singulatives)

Singulative: PN \*(kwi)-l<sub>1</sub>or<sub>2</sub>-ok-i > (kwi)-l<sub>1</sub>uor<sub>2</sub>-ok-i (f) > (kwi)-l<sub>1</sub>uor<sub>2</sub>-on-i (a) > (kwi)-l<sub>1</sub>uor<sub>2</sub>-n-i (b) > (kwi)-l<sub>1</sub>uon-n-i (c) > (kwi)-l<sub>1</sub>uon-i (d) > (kwi)-l<sub>1</sub>uon (e)

'arm, hand' (only Western Nilotic languages have maintained singulatives)

Singulative: PN \*kAg-Ik-A > kIAg-Ik-A (?) > kIg-Ik-A (?) > kIg-In-A (a) > kIg-n-A (b) > kIng'-n-A (c) > kIng'-A (d) > kIng' (e)

'thing' (Only Western Nilotic languages have maintained singulatives)

Singulative: PN \*(to)-kig-ik-o > (to)-kig-in-o (a) > (to)-kig-n-o (b) > (to)-king'-n-o (c) > (to)-ki-n-o (d) > (to)-ki-n

## NOTES

- (1) Ehret (2001), p. 18. However, Ehret gives no explanation for this assumption.
- (2) Capitalized vowels represent [-ATR] vowels; ng' represents a velar nasal, and NC represents a sequence of a nasal and a voiced stop at same point of articulation. A period after a vowel signifies that pronunciation of the preceding vowel is prolonged.
- (3) Nilotic languages contain no dual or trinary numbers.
- (4) th and dh represent dental consonants. Vowels in a suffix are harmonized to vowels of a stem, as in [±ATR].
- (5) For details about the plural formation, see Hieda (1991).
- (6) ny represents a palatal nasal.
- (7) C' represents a consonant accompanied by a glottal stop, which originated from voiceless stop consonants. Consonants without a glottal stop, represented by C, originated from voiced stop consonants. nh represents a dental nasal.
- (8) The vowel in the suffix is probably [-ATR].
- (9) H, M, L and F represent high, mid, low, and falling tones respectively.
- (10) ce:p- is a gender prefix.
- (11) Secondary singular (ss) forms are used to denote a specific object, and secondary plural (sp) forms are used to denote more than two specific objects.
- (12) Data (Km: Roncari & Mantovani (1973), Te: Hilders & Lawrence (1958), Tu: Heine (1980), Ma: Tucker & Mpaayei (1955), Ca: Heine (1980), On: Heine & Vossen (1975-76), Lo: Muratori (1948), Ba: Muratori (1948), Na: Creider & Creider (2001), Ki: Toweett (1979), Sa: O'Brien & Cuypers (1975), Po: Crazzolara (1978): Po (Suk), Beach (1911), Nu: Westermann (1912),

Di: Nebel (1954), (1978), Sh: Kohnen (1933), An: Reh (1999), Pa: Simeoni (1978), Lu: Tucker (1994), Ac: Crazzolaro (1938), La: Noonan (1992))

## REFERENCES

- Beech, M. W. H.  
1911 The Suk, their Language and Folklore, (Reprinted 1969, New York: Negro University Press).
- Crazzolaro, J. P.  
1938 A Study of the Acooli Language, London: Oxford University Press.  
1978 A Study of the Pokot (Suk) Language, Bologna: Editrice Missionaria.
- Creider, C. A. & J. T. Creider  
1989 A Grammar of Nandi, Hamburg: Helmut Buske.
- Creider, J. T. & C. A. Creider  
2001 A Dictionary of the Nandi Language. Köln: Rüdiger Koppe.
- Ehret, C.  
2001 A Historical-Comparative Reconstruction of Nilo-Saharan. Köln: Rüdiger Koppe.
- Heine, B.  
1980 The Non-Bantu Languages of Kenya, Berlin: Dietrich Reimer.
- Heine, B. & R. Vossen  
1975–76 'Zur Stellung der Ongamo-Sprache (Kilimandscharo),' *Afrika und Übersee*, 59 (2): 81–105.
- Hieda, O.  
1983 'Some historical changes in nominal stems in Nilotic languages,' in Vossen, R. & M. Bechhaus-Gerst (eds.), *Nilotic Studies*, pp. 311–335, Berlin: Dietrich Reimer.  
1989 'Proto-Western Nilotic \*ɾ and \*l,' in Sakiyama, O. & A. Sato (eds.), *Asian Languages and General Linguistics*, pp. 382–398, Tokyo: Sanseido.  
1991 'Plural formation of nouns in Western Nilotic,' in M. L. Bender (ed.), *Nilo-Saharan vol. 7* pp. 147–164. Hamburg: Helmut Buske.  
2003 'On Singulative in Nilotic (in Japanese),' *Kyoto University Linguistic Research* 22: 187–236.
- Hilders, J. C. & J. C. D. Lawrance  
1958 An English-Ateso and Ateso-English Vocabulary, Kampala: Eagle Press.
- Knappert, J. & J. Ukoko  
1964 *Essai de dictionnaire Dho Alur*, Ghent: Brill.
- Kohnen, B.  
1933 *Shilluk Grammar*, Verona: Missioni Africane.
- Muratori, C.  
1948 *English-Bari-Lotuxo-Acoli Vocabulary*. Okaru: Catholic Mission Printing Press.
- Nebel, A.  
1948 *Dinka Dictionary*, Wau: Verona Fathers.  
1978 *Grammatica e Dizionario Dinka*, Bologna: Editrice Missionaria.
- Noonan, M.  
1992 *A Grammar of Lango*, Berlin: Mouton de Gruyter.
- O'Brien, R. J. & W. A. M. Cuypers  
1975 *A Descriptive Sketch of the Grammar of Sebei*, Washington: Georgetown University Press.
- Reh, M.  
1996 *Anywa Language, Description and Internal Reconstructions*, Köln: Rüdiger Koppe.  
1999 *Anywa-English and English-Anywa Dictionary*, Köln: Rüdiger Koppe.
- Roncari, G. & M. Mantovani  
1973 *Appunti di Grammatica Karimojong*, Gulu: Catholic Press.
- Rotland, F.  
1982 *Die südnilotischen Sprachen: Beschreibung, Vergleichung, and Rekonstruktion*, Berlin: Dietrich Reimer.
- Simeoni, A.  
1978 *Pari, A Luo Language of Southern Sudan*, Bologna: E. M. I.
- Toweett, T.  
1979 *English, Swahili, Kalenjin Nouns Pocket Dictionary*, Nairobi: Kenya Literature Bureau.
- Tucker, A. N.

- 1994 A Grammar of Kenya Luo (Dholuo), Köln: Rüdiger Koppe.
- Tucker, A. N. & J. T. ole-Mpaayei
- 1955 A Masai Grammar with Vocabulary, London: Longmans, Green.
- Vossen, R.
- 1982 The Eastern Nilotes: Linguistic and Historical Reconstruction, Berlin: Dietrich Reimer.
- Westermann, D.
- 1912 'The Nuer Language,' *Mitteilungen des Seminars für Orientalischen Sprachen* 15: 84-141.