

# THE CATEGORY OF NUMBER IN OBOLO VERBAL MORPHOLOGY

Uche E. Aaron

University of California, Santa Barbara and  
Nigeria Bible Translation Trust

In the Obolo language, apart from the normal obligatory concord that exists between the subject and its verb, the verb further alternates morphologically to mark number. This alternation indicates the distributive plurality of the subject, iterativity, as well as extensive iterativity of the action. Plurality of the object, which is done non-derivationally by use of different words for singular and plural, is not discussed in the article.

As in some related Benue Congo languages, e.g., Ibibio, this number marking system is gradually dying out. This article investigates the system as it is synchronically, and also goes into a diachronic discussion of the loss of the different forms of number marking, in terms of the semantic shifts that result from it, as well as the order of loss, and possible causes of loss.

En ebolo il existe, outre l'accord normal entre sujet et verbe, une alternance morphologique du verbe pour le nombre. Cette alternance indique la pluralité distributive du sujet ainsi que l'étendue de l'itérative de l'action. Nous laissons de côté la pluralité de l'objet, laquelle se marque non pas par dérivation mais par l'usage de mots différents pour le singulier et le pluriel.

De même que dans certaines langues bénoué-congo apparentées, telle que l'ibibio, le système qui marque le nombre est en voie d'extinction. Cet article examine la situation synchronique actuelle et discute également la diachronie de la perte des divers marqueurs de nombre et les modifications sémantiques qui en résultent, ainsi que leur ordre de perte et les raisons possibles de ces pertes.

## 0. INTRODUCTION

Verbs in many languages have been found to possess a characteristic that hitherto has been thought to be an exclusive reserve of nominals, namely number marking. Durie (1986) showed that nominal and verbal number categories operate independently in many languages. According to Durie, the former is external and inflectional while the latter is derivational. That verbal number is derivational is borne out in Obolo, a Lower Cross language of the Cross River group of the Benue Congo family, spoken by about 150,000 people in Rivers and Akwa Ibom states of Nigeria.<sup>1</sup>

In languages that mark number only on nominals, verbal number marking is only a paradigmatic inflectional agreement encoding as illustrated in the Bulgarian example in (1), where the markers are in italic letters.

(1) *zhenata*    *e*    *cjea*    *kniga*  
woman<sup>^</sup>the    has    read    book  
The woman has read the book.

*zhenite*    *sa*    *cheli*    *kniga*  
women<sup>^</sup>the    have    read    book  
The women have read the book.

That is, in these languages, if the subject is in the singular or plural, the verb must be also. In Obolo, there are bound pronouns which inflect paradigmatically for number and person as in the Bulgarian example. But in addition to this, there is also a distinctive number marking, a root-internal derivational marking, which indexes verbal plurality, as illustrated in (2). The morphemes that mark these two systems on the verbs in (2) are in italic letters, i.e., the bound pronouns in (a), and the root-internal number marking in (b).<sup>2</sup>

<sup>1</sup> I am grateful to my friend, Mr. Isidore E. Ene-Awaji for his help in uncovering the interesting pattern of this category in Obolo, and in collecting the data. I am also grateful to my lecturers at the University of California, Santa Barbara, Profs. Sandy Thompson, Wallace Chafe, and Marianne Mithun, for their critical comments on the article.

<sup>2</sup> Abbreviations in this article: 1,2,3: first-, second-, third-person; s: singular; p: plural; Cp: common plural prefix; DEM: demonstrative; DFUT: definite future; DS: distributive verb form; FUT: future tense; COND: conditional; G/P: generic/perfect morpheme; ICO: 'if' conditional; IMPF: imperfective aspect;

(2) a. *î-kèp kôok*  
 3s-cut palm fruit  
 S/he cut a palm fruit.

*mî-kèp kôok*  
 3p-cut palm fruit  
 They cut a palm fruit.

b. *î-kèp kôok*  
 3s-cut palm fruit  
 S/he cut a palm fruit.

*î-kèey kôok*  
 3s-cut(many) palm fruit  
 S/he cut many palm fruits.

This article describes how verbs in Obolo encode number by the root-internal derivational morphological processes of alternation and reduplication. Because this phenomenon is no longer fully productive in the language, the main body of the article (besides the data, and a brief sketch of Obolo verbal morphology), is divided into two major sections along the lines of synchrony and diachrony. The synchronic part deals with the different forms of plurality and what constitutes them, while the diachronic part deals with the effects of language change on the phenomenon in terms of semantic shifts, and loss of forms.

In Obolo, verbal plurality occurs in three forms, DISTRIBUTIVE PLURALITY, ITERATIVE PLURALITY, and EXTENSIVE ITERATIVE PLURALITY. Distributive plurality indexes the plurality of patients in transitive sentences and of agents in intransitive sentences. Iterative plurality expresses an iterative or repetitive action which may or may not involve multiple agents or patients. The focus here is on the multiplicity of action, not on number of arguments. Extensive iterative plurality expresses an action that is repeated over an extensive period of time.

These three plural forms have also been reported in many other languages. Durie (1986) reported the distributive form for over 40 different languages. Mithun (1988 a and b) reported the existence of both distributive and iterative plurality in many North American languages. Larsen (1990) reported the existence of all three forms, distributive, iterative, and extensive (which he calls "intensive") iterative in Sabaoth, a southern Nilotic language spoken in western Kenya and eastern Uganda. In Nigeria verbal plurality is reported for Mwaghavul (Niyang 1985), a Chadic language, Zarek (Gerhardt 1984), and Kaje (McKinney 1979), both Benue Congo languages.

## 1. THE DATA

The data on which this article is based is a collection of verbs from 26 spontaneous texts recorded with speakers from teenage to about 80 years of age. All the verbs (364 of them), and their plural forms observed in the texts, were listed. There were 85 (23%) complete sets of forms i.e., singular, distributive, iterative, and the extensive iterative forms, and 42 (12%) incomplete sets, mostly iterative without singular and/or distributive plural. The remaining 237 (65%) were only singular forms. Then the gaps on the list were filled in by elicitation. The figures obtained are given in the table in (3). Extensive iterative plural forms are not included in the statistics because all the verbs in the data alternated for it, partially or in full (see §4.4).

As shown in (3), there were only 94 complete sets of forms in the data, i.e., where the verb roots alternated, one way or the other, to indicate all the plural forms. Some 241 invariant singular forms were used to encode distributivity, and 45 for iterativity. Two distributive forms were used to encode iterativity without alternation. Some 27 suppletive iterative forms were used to encode both singular and distributive forms. On the whole, there were 337 singular forms, 96 distributive forms, and 317 iterative forms in the data. The entire data are listed in the appendices.

(3)	SINGULAR	DISTRIBUTIVE	ITERATIVE
complete	94	94	94
singular	243	241	45
distributive	-	2	2
iterative	27	27	223
total	364	364	364
total for each form	(337)	(96)	(317)

The data were all from the Ngo dialect, one of the six dialects of Obolo. The verb forms listed throughout the article are the singular imperative forms, which do not have any affixes; their tones are different from the forms in the examples. The forms in the examples reflect tense, aspect, and other moods which are partly marked by tones.<sup>3</sup>

## 2. OBOLO VERBAL MORPHOLOGY

It is necessary to present a brief description of the verbal morphology of Obolo as a background for a better understanding of the morphological encoding of verbal plurality. According to Mithun (1989), languages with predominantly verbal morphology often lack the affixes found on nouns in other languages, such as number, gender, and case markers. Distinctions related to these categories are frequently marked within the verbs. Also these languages generally do contain a profusion of typical verbal affixes. These typological observations are borne out in Obolo, an agglutinating Subject Verb Object (SVO) language, without any case or gender distinctions. There is, however, a tiny vestige of an old noun class system that distinguishes between human and non-human. Noun stems do not inflect for number except for the suppletive cases in (4), which are all human.

(4)	SINGULAR		PLURAL	
	<i>énê</i>	person	<i>ífê</i>	people
	<i>gwúŋ</i>	child	<i>bón</i>	children
	<i>sóngwúŋ</i>	little child	<i>ńsàbón</i>	little children
	<i>énênwàaŋ</i>	woman	<i>èbíbâaŋ</i>	women
	<i>énèrièeŋ</i>	man	<i>èbírièeŋ</i>	men

Otherwise, number is marked only by noun modifiers, specifically determiners and demonstratives as exemplified in (5) and (6).

(5)	<i>ògwú</i>	<i>úbóóŋ</i>	<i>èbí</i>	<i>úbóóŋ</i>
	DETs	chief	DET <sub>p</sub>	chief
	the	chief	the	chiefs

(6)	<i>íkpi</i>	<i>yí</i>	<i>íkpi</i>	<i>chí</i>
	rat	DEMs	rat	DEM <sub>p</sub>
	this	rat	these	rats

<sup>3</sup> Non-IPA symbols in the data relate to the IPA system as follows: *ch* in the data has the same phonetic value as [tʃ], *j* as [dʒ], and *ny* as [ɲ].

In these examples, rather than with affixes on the nouns, number is marked on the determiners and demonstratives.

Tense, aspect, mood, negation, conditionals, and relative markers, are all affixed to the verb stem. A more detailed discussion of Obolo verbal morphology is to be found in Aaron (1994:46ff). The order of these categories in relation to the verb stem is as shown in (7).

- (7)
- |              |   |
|--------------|---|
| SBJ          |   |
| G/P          | NEG   |
| (SP) - (INT) | (N)SP - (ICO) - (DFUT) - (INCH) - (IMPF) - STEM - (REL) - (JUS) |
|              | WHCO (FUT)  |
|              | PROG  |

Non-imminent future is indexed by a portmanteau prefix that represents both SP and future tense simultaneously.

There are two verb classes in the language, high and low tone verbs, each inflecting paradigmatically according to its tone and syllable patterns. Obolo verbs are basically monosyllabic (CV, e.g., *sî* 'go'; CVC, e.g., *tét* 'hold'; CV:C *láák* 'sleep') or disyllabic (CVCV e.g., *tóbò* 'tie'). All trisyllabic verbs (CVCVCV e.g., *yìyálà* 'scatter') and disyllabic verbs of the form CVCV:C, e.g., *tùtíń* 'assemble', most of which are suppletive forms, are iterative plural forms. In Faraclas (1984:50-51), Obolo trisyllabic verbs are described as derivations from monosyllabic or disyllabic verbs. This is true, but only within the context of plurality.

Reduplicative constructions abound in Obolo, both total and partial. Partial reduplication may or may not be accompanied by vowel changes. Moravcsik (1988) subcategorizes partial reduplication into initial, final, and internal reduplication to indicate which part of the verb is reduplicated. In Obolo, partial reduplication of the verb usually involves the initial syllable of the verb stem e.g., *chíchíli* 'open (contrastive)'. In the verbal group the inchoative aspect affix, imperfective aspect affix, or the verb stem itself may be reduplicated for emphasis as illustrated in (8).

(8) Reduplication of:

INCH: *í-nê-nĩ-sí*  
3s-REDUP-INCH-go  
*Then he went.*

IMPF: *í-kê-kĩ-sí*  
3s-REDUP-IMPF-go  
*He does go.*

STEM: *ì-jé-jê*  
3s-REDUP-walk  
*He walked (not ran).*

Reduplication may also be done to encode durativity. Durativity is encoded by reduplicating or triplicating the entire verbal group, with the same tone pattern, and all but the first (finite) verb marked with neutralized subject prefix (NSP), *i-* with high tone, as in serial verb constructions. This is illustrated in (9).

- (9) *í-libí í-libí í-libí*  
3s-ran NSP-ran NSP-ran  
*He ran (and) ran (and) ran.*

The verb stem may also be reduplicated for 'how' questions as in *òròrò* 'how did you do (it)?'. Finally the verb stem may be partially reduplicated to express plurality as in *nwùnweéń* 'change many times'. Reduplication of the verb stem for number is different from the rest because of the unique vowel change pattern of the reduplicated

syllable, compare /ɔ/ in òròrò and /u/ in nwùnwéén. More about this is discussed later in §4.2. In addition to this, while the entire verbal group is reduplicated (total reduplication) to encode durativity as in (9), only the first syllable may be reduplicated (partial reduplication) for plurality as in nwùnwéén.

In this section a brief sketch of Obolo verbal morphology was presented, with special emphases on reduplication involving verbs, as a background for the rest of the article. Also for the same reason, a brief discussion of suppletive nominal plural morphology was included.

### 3. VERBAL MARKING OF PLURALITY

In this section the different forms of verbal plural marking are presented. The discussion proceeds in the order: Distributive plurality, iterative plurality, and extensive iterative plurality.

#### 3.1 DISTRIBUTIVE PLURALITY

This verb form occurs when the subject of an intransitive verb or the patient of a transitive verb is plural. The formation of the distributive plural form depends on the number of syllables in the verb root.

**Monosyllabic verb roots.** Verbs of this type indicate distributive plurality differently depending on whether their root vowels are long or short.

(i) *Monosyllabic verb roots with short vowels.* For monosyllabic verb roots with short vowels, the distributive plural is formed by lengthening the vowel in the singular verb root. The new verb root with the lengthened vowel is, as a lexical phonological rule of the language,<sup>4</sup> closed with either the voiceless velar plosive, *k*, or the velar nasal *ŋ*. These processes are illustrated in (10), and exemplified in (11). Of the 176 monosyllabic verbs with short vowels, only 51 (29%) alternated in this way.

(10)	SINGULAR	DISTRIBUTIVE PLURAL	
	lět	lěek	hide
	gwén	gwééŋ	call
	tóp	tóŋ	throw
	fiák	fiáak	hurt, be sick

(11)a.	énê	yà	î-tèt	ofuruma
	person	DEMs	3s-catch	shark
	That person caught a shark.			

b.	énê	yà	î-těek	ofuruma
	person	DEMs	3s-catchDS	shark
	That person caught many sharks.			

Of all reported cases of distributive plurality, Sabaoth (Larsen 1990) is the only language where distributivity is reported for both agents and patients in transitive sentences, each indexed by a distinct set of affixes.

Some monosyllabic verb roots with short vowels may also change their root vowels and add or change their final consonants to indicate distributive plurality. Nine (5%) of these were observed in the data.

(12)	SINGULAR	DISTRIBUTIVE PLURAL	
	múŋ	móŋ	see
	kwú	kwááŋ	die

<sup>4</sup> Only six consonants may occur in syllable final position in Obolo, namely *p*, *t*, *k*, *m*, *n*, and *ŋ*. Where the syllable contains a long vowel, only *k* or *ŋ* may occur in the final position.

<b>sí</b>	<b>sááj</b>	go (to a place)
<b>búm</b>	<b>bák</b>	break open
<b>fô</b>	<b>fôn</b>	go home

(13) **í-bùm**    **úgòŋ**  
 3s-broke    pitcher  
 She broke a pitcher.

**í-bàk**    **úgòŋ**  
 3s-brokeDS    pitcher  
 She broke many pitchers.

There was one monosyllabic verb in the data that expanded from one syllable for the singular to two for the distributive plural. There wasn't any other of its kind.

(14) SINGULAR    DISTRIBUTIVE PLURAL  
**rǒŋ**    **ròŋó**    fall

(15) **ùlájà**    **í-ròŋ**    **mé**    **ìjòŋ**  
 orange    3s-fall    PREP    ground  
 An orange fell on the ground.

**ùlájà**    **í-ròŋó**    **mé**    **ìjòŋ**  
 orange    3s-fallDS    PREP    ground  
 Many oranges fell on the ground.

The remaining 116 (66%) monosyllabic verbs with short vowels in the data remained unchanged between singular number and distributive plural number.

(16) SINGULAR    DISTRIBUTIVE PLURAL  
**wúm**    **wúm**    fan  
**yík**    **yík**    to place carefully  
**jê**    **jê**    walk

(17) **yík**    **úgòŋ**    **yà**    **mé**    **ìjòŋ**  
 place    pot    DEMs    PREP    floor  
 Place the pot on the floor.

**yík**    **úgòŋ**    **chà**    **mé**    **ìjòŋ**  
 place    pot    DEM<sub>p</sub>    PREP    floor  
 Place the pots on the floor.

(ii) *Monosyllabic verb roots with long vowels*: Of the 62 monosyllabic verbs with long vowels in the data, 4 (6%) shortened their long vowels to index distributive plurality.

(18) SINGULAR    DISTRIBUTIVE PLURAL  
**fǒk**    **fôn**    borrow  
**chīŋ**    **chīm**    steal  
**lák**    **lám**    sleep  
**fīŋ**    **fīn**    throw away/waste

(19) **irè**    **ó-fǒk**    **ìkpòkò**  
 QUES    2s-borrow    money  
 Did you borrow money?

**irè**    **ó-fôn**    **ìkpòkò**  
 QUES    2s-borrowDS    money  
 Did you borrow a lot of money?



## (26) SINGULAR      DISTRIBUTIVE PLURAL

<b>kékè</b>	<b>kékè</b>	stand
<b>nwènê</b>	<b>nwènê</b>	change
<b>tóbò</b>	<b>tóbò</b>	tie

(27) **áyì ì-nwèné ðfɔ̀ntì kàṅ yà**  
 Ayi 3s-changed dress 3sPOSS DEMs

Ayi changed that her dress.

**áyì ì-nwèné ðfɔ̀ntì kàṅ chà**  
 Ayi 3s-changed dress 3sPOSS DEMp

Ayi changed those her dresses.

Distributive plurality is encoded differently depending on the number and phonological shape of the syllables, whether with long or short vowels.

When monosyllabic verb roots with short vowels alternate, most of them do so by lengthening the root vowel and closing the syllable with a velar stop or nasal. Very few take on new root vowels. A vast majority of these verbs (66% of those in the data) simply remained unchanged between singular and distributive plural form. Most monosyllabic verb roots with long vowels (94% of them in data) also remained unchanged between singular and distributive forms. This confirms the fact that the basic alternation pattern for distributivity is the lengthening of the root vowel. Therefore if the root vowel is already long in the singular form, it does not need any further alternation for distributive plural. However, there were a few of them (6% in my data) that shortened their root vowel, and took on new final consonants to index distributivity.

When disyllabic verb roots alternate for distributivity, they do so by contracting to monosyllables, some (21% in my data) with lengthened root vowels, and others (8% in the data) with short vowels. Like monosyllabic verb roots, the majority of the disyllabic verbs (70% in the data) do not alternate for distributivity.

## 3.2 ITERATIVE PLURALITY

The iterative plural verb form expresses an action that is repeated several times. It may or may not involve plural arguments. Of all the 364 verbs in our data, 317 (87%) of them alternated to index iterativity. Of the 317 verbs which alternated to index iterativity, 296 (81%) were derived from the distributive form while the remaining 21 (6%) were derived from the singular form.

**General formation.** Generally, irrespective of the number of syllables or whether or not the form is derived from the singular or distributive plural, the first or only syllable of the verb root is reduplicated and placed before the base syllable. The vowel in the reduplicated syllable is generally a high vowel with two allophonic variations. It is /u/ when the root vowel is a back vowel or when the verb root begins with any consonant in the general labial area of articulation. Elsewhere it is /i/. Irrespective of the basic tone pattern on the verb, the iterative form assumes a characteristic tone pattern, low tone on the reduplicated syllable followed by high tone on the first syllable of the base, if the verb root has more than one syllable. Subsequent syllables may be high, low, or a contour tone depending on the basic tone of the verb.

When the vowel in the verb root is a back vowel (i.e., u, o, ɔ in Obolo), the reduplicated syllable nucleus assumes its [u] allophone as illustrated in (28).

## (28) SINGULAR      DISTRIBUTIVE PLURAL      ITERATIVE PLURAL

<b>sùlú</b>	<b>sùt</b>	<b>sùsút</b>	flog
<b>lóm</b>	<b>lóóṅ</b>	<b>lùlóóṅ</b>	bite
<b>rɔ̀ṅ</b>	<b>rɔ̀ṅḍ</b>	<b>rùrɔ̀ṅḍ</b>	fall

When the verb root begins with any consonant in the general labial area of articulation as shown in (29), the reduplicated syllable nucleus also takes the /u/ allophone.

(29) SINGULAR	DISTRIBUTIVE PLURAL	ITERATIVE PLURAL	
bénè	bééŋ	bùbééŋ	lift
màáŋ	màáŋ	mùmááŋ	place on bed
wákà	wááŋ	wùwááŋ	pull off
gbâ	gbááŋ	gbùgbááŋ	call at a place
gwén	gwééŋ	gwùgwééŋ	call
kpókò	kpóóŋ	kpùkpóóŋ	tear off
kwéek	kwééek	kwùkwééek	sit down
nwènè	nwééè	nwùnwééè	change
fáŋà	fáaŋ	fùfáaŋ	break
fɔk	fɔŋ	fùfɔn	borrow

Back vowels are exemplified in (30) and labial area of articulation in (31).

(30) ùlájà	yà	î-róŋ	
orange	DEMs	3s-fell	
The orange fell down.			
ùlájà	chà	î-róŋs	
orange	DEMp	3s-fellDS	
Those oranges fell down.			
ùlájà	chà	î-rùróŋs	
orange	DEMs	3s-fellIT	
Those oranges fell down (not all at once).			

(31) gwúŋ	yâ	î-gwèn	énè
child	DEMs	3s-called	person
The child called one person.			
gwúŋ	yâ	î-gwèèŋ	énè
child	DEMs	3s-calledDS	people
The child called many people.			
gwúŋ	yâ	î-gwùgwééŋ	énè
child	DEMs	3s-calledIT	people
The child called people from all over.			

Outside the two environments described in (28) and (29), the reduplicated syllable takes the /i/ allophonic variant. This is illustrated in (32), and exemplified in (33) and (34).

(32) SINGULAR	DISTRIBUTIVE PLURAL	ITERATIVE PLURAL	
chĩŋ	chĩm	chìchím	steal
kâ	kâ	kikâ	return
kékè	kékè	kikékè	stand
kép	kééŋ	kikééŋ	cut
ràmâ	rááŋ	rìrááŋ	jump
libì	lĩm	lìlìbì	run
nyám	nyááŋ	nyìnyám	sell

(33) î-kèp	kòok	mé	érè	yà
3s-cut	palm^fruit	PREP	place	DEMs
He cut palm fruit at that place.				

**î-kèèŋ kôok mé érè yà**  
 3s-cutDS palm^fruit PREP place DEMs  
 He cut many palm fruits at that place.

**î-kìkèèŋ kôok mé érè yà**  
 3s-cutIT palm^fruit PREP place DEMs  
 He cuts palm fruits there many times.

(34) **î-libí í-nàŋá**  
 3s-ran NSP-leave  
 He ran away.

**mê-lim í-nàŋá**  
 Cpl^FUT-runDS NSP-leave  
 They will run away.

**î-lilíbì í-kàná érè**  
 3s-runIT NSP-go round^place  
 He ran all around the place.

The last example in (34) could be compared to (8), which is repeated here for ease of reference, to illustrate the difference between the marking of iterativity and durativity.

(8) **î-libí í-libí í-libí**  
 3s-ran NSP-ran NSP-ran  
 He ran (and) ran (and) ran.

In marking durativity, the entire verbal group including the SP is triplicated, and all but the first verb are treated as serial verbs each with a neutralized subject prefix (NSP). But in the iterative plural marking, the verb root is only partially reduplicated, and the reduplicated syllable carries the characteristic low tone.

**Modified formation.** Sometimes the base syllable of the iterative form may expand or contract. The expansion may involve vowel suffixation with or without a consonant alternation. The vowel suffix is usually a copy of the root vowel, and the new consonant belongs in the same general area of articulation as the replaced final consonant of the verb root.

(35) SINGULAR	DISTRIBUTIVE PLURAL	ITERATIVE PLURAL	
<b>mẵ</b>	<b>màáŋ</b>	<b>mùmánà</b>	give birth, multiply
<b>bẵk</b>	<b>bẵk</b>	<b>bùbákà</b>	move with difficulty
<b>lẵp</b>	<b>làák</b>	<b>lílábà</b>	chase away
<b>yẵt</b>	<b>yàák</b>	<b>yìyàlá</b>	scatter

(36) **ébót î-màn gwúŋ**  
 goat 3s-deliver^s child  
 The goat delivered a kid.

**ébót î-màáŋ bôn**  
 goat 3s-deliverDS children  
 The goat delivered many kids.

**ébót î-mùmáná bôn**  
 goat 3s-deliverIT children  
 The goat delivered kid(s) many times.

(37) **lẵp gwúŋ yà sáŋà**  
 chase child DEMs away  
 Chase that child away.



triplicating it, and adding the triplicate forms after the iterative form. The tone pattern on the triplicate is always in the sequence H L H. Like the iterative, the extensive iterative may or may not involve plural arguments (e.g., patients).

Semantically and structurally, the extensive iterative plural seems to be a combination of both iterativity and durativity. Semantically it encodes two meanings, repeating the same action (iterativity), and doing so for a long time (durativity). Structurally it puts together both the forms for iterative plural index, and a durative marking that is modified in some distinct ways. Whereas the verbal group may be repeated several times to indicate durativity, here the number of repetitions is strictly limited to three. Unlike the reduplications and triplications that mark durativity (see §3), the triplicate forms in extensive iterative plural do not carry any affixes, only the verb root is triplicated. Also while the tone pattern remains unchanged in reduplications that index durativity, the tone pattern of the triplicate forms here is restricted to the characteristic H L H.

(42) SINGULAR	DISTRIB PL	ITERATIVE PL	EXTENSIVE ITERATIVE PL	
lět	lëek	lilëek	lilëek lëek lëek lëek	hide
rǝŋ	ròŋð	rùróŋð	rùróŋð rǝŋ rǝŋ rǝŋ	fall
fǝk	fǝn	fùfǝn	fùfǝn fǝn fǝn fǝn	answer
gbâ	gbáaŋ	gbùgbáaŋ	gbùgbáaŋ gbáaŋ gbàaŋ gbáaŋ	call at a place

(43) ùlájà	chà	ì-rùróŋð	rǝŋð rǝŋð rǝŋð	í-jót	ìjòŋ
orange	DEMP	3s-fallIT	fall fall fall	NSP-full	ground
The oranges fell and fell and fell all over the ground.					

(44) ù-ká-kì-má	énê	ó-kí-gbùgbáaŋ	gbáaŋ	gbàaŋ	gbáaŋ
1s-NEG-IMPF-like	person	3s-IMPF-callIT	call	call	call
mé	òníŋ	ìjè			
PREP	road	journey			
I do not like it when a person calls at too many places on a journey.					

### 3.4 INVARIANT VERB ROOTS IN EXTENSIVE ITERATIVE PLURALITY

Of the 364 verbs analyzed, 45 (12%) remained unchanged all through, in the singular and in the two plural forms. But they triplicated to index extensive iterative plurality. Compare (46) and (47). In this way all the verbs in the data alternated, fully or partially, for extensive iterative plurality.

(45) SINGULAR	DISTRIB PL	ITERATIVE PL	EXTENSIVE ITERATIVE PL	
kpô	kpô	kpô	kpô kpô kpô kpô	look
tǝŋ	tǝŋ	tǝŋ	tǝŋ tǝŋ tǝŋ tǝŋ	put mud
wùúk	wùúk	wùúk	wùúk wùúk wùúk wùúk	forget
bèmê	bèmê	bèmê	bèmê bémé bèmê bémé	carry

(46) ì-fǝk	ókpóŋ
3s-borrowed <sup>s</sup>	sand
He borrowed (one measure of) sand.	

ì-fǝn	ókpóŋ
3s-borrowed <sup>DS</sup>	sand
He borrowed (many measures of) sand.	

ì-fùfǝn	ókpóŋ
3s-borrowed <sup>IT</sup>	sand
He borrowed sand many times.	

**î-fùfún**      **ókpóóŋ**    **fún**    **fún**    **fún**  
 3s-borrowEDIT    sand      borrow borrow borrow  
 He kept on borrowing sand for a long time.

(47) **î-bèmé**      **ókpóóŋ**  
 3s-carry      sand  
 He carried (one measure of) sand.

**î-bèmé**      **ókpóóŋ**  
 3s-carryDS    sand  
 He carried many (measures of) sand.

**î-bèmé**      **ókpóóŋ**  
 3s-carryIT    sand  
 He carried sand many times.

**î-bèmé**      **ókpóóŋ**    **bémé**    **bèmè**    **bémé**  
 3s-carryIT    sand      carry    carry    carry  
 He kept on carrying sand for a long time.

### 3.5 UNCOUNTABLE NOUNS AND VERBAL PLURALITY

Where the argument is a semantically uncountable or near uncountable noun, a semantically motivated suppletion occurs. A totally different verb is selected for encoding the plural. The distributive form, itself phonologically unrelated to the singular, alternates, in accordance with the general rule, to express the iterative form. Of the 364 verbs studied, only 5 (1%) belonged in this category. These are illustrated in (48) and exemplified in (49).

It is worth mentioning here that in the Obolo counting system, large quantities of things like thin slices of bananas and small pieces of firewood, and even a large number of people, which may be perfectly countable, are considered as mass nouns.

(48) SINGULAR	DISTRIBUTIVE PLURAL	ITERATIVE PLURAL
<b>kpúk</b> chop (a big thing, e.g., a log)	<b>sǎp</b> chop (a big thing) into many pieces	<b>sùsǎp</b> chop (a big thing) into small pieces many times
<b>fièék</b> slice (a small thing, e.g., a banana)	<b>sék</b> slice (a small thing) into many pieces	<b>sìsék</b> slice up (a small thing) into many tiny pieces (many times)
<b>tókò</b> pour a little	<b>gwòók</b> pour a lot	<b>gwùgwóók</b> pour a lot (many times)
<b>mònò</b> take one thing	<b>chiááŋ/kpùlú</b> gather/take many things	<b>chìchiááŋ/kpùkpùlú</b> gather many things, many times
<b>nàŋâ</b> depart (1 person)	<b>ì-yǎt</b> depart (a multitude)	<b>ì-yìyát</b> depart many times (multitude)

(49) **áyì** **î-kpùk** **íyé**  
 Ayi 3s-chop firewood  
 Ayi chopped a (piece of) firewood.

**áyì** **î-sǎp**      **íyé**  
 Ayi 3s-chopDS    firewood  
 Ayi chopped many (pieces of) firewood.

áyì ì-kpókpô í-sùsóp íyé  
 Ayi 3s-just NSP-chopIT firewood  
 Ayi just chopped all the firewood.

Extensive iterative plurals are formed by triplicating the iterative base without the reduplicated syllable, and adding the triplicate forms along with the iterative form. For verb roots that remain invariant between singular, distributive, and iterative, the entire root still undergoes triplication. This means that, possibly, all verbs alternate, at least partially, for extensive iterative plural.

In the whole of §3, the different types of plural marking on the verbs have been described in detail. Verb stems alternate in three ways to encode plural actions. The first, distributive plurality, encodes transitive actions carried out on multiple patients, and intransitive actions carried out by multiple agents. The second, iterative plurality, encodes multiple repetitions of the same action on one or more patients, and by one or more intransitive agents. The third, extensive iterative plurality, encodes multiple repetitions of the same action for an extended period of time on one or more patients, or by one or more intransitive agents.

In each of these forms, there were instances where verb roots remained invariant from one form to another. The same forms were used for both singular and distributive plural, or distributive forms were used for both distributive and iterative plurals. There were also verbs that remained invariant all through except in the extensive iterative form. In this form, even when the verb root did not alternate, it was triplicated, and the triplicate forms carried the HLH characteristic tone pattern of the extensive iterative form.

Among other things, there may be two reasons why certain verb roots remained invariant from one form to another. One reason may be that all the verbs do not alternate, whether for distributivity or iterativity. The study of which verbs alternate and which ones do not alternate, and why this is so, is beyond the scope of this article. The second reason may be language change and the fact that the phenomenon is dying out in the language. Some of the factors involved in this are discussed in §4.

#### 4. LANGUAGE CHANGE AND VERBAL PLURALITY IN OBOLO

As Arlotto (1972:6) points out, given enough time, a language will change. Accordingly, as time went by, the wholeness of the complex verbal plural patterns in Obolo began to break down resulting in semantic shifts, and loss of forms. This section deals with these results, first semantic shifts, then loss of forms with emphasis on the order and possible causes of loss of forms.

##### 4.1 SEMANTIC SHIFTS

One of the results of language change on the verbal number phenomenon in the language is that some plural forms have (or seem to have) lost the semantic connection with (or do not seem to have the same semantic focus as) their singular counterparts. Now what looks like perfect plural forms of some singular verbs are actually new verbs with a new meaning. Here is an example of lexicalization (Anttila 1972:151; Heine et al. 1991:95) where new lexical items are formed from grammatical operations. The meanings of the new words may or may not belong in the same semantic domain with the parent words from which they were formed.

For instance, (50) contains some singular verbs and their possible plural forms predicted by the morphosyntactic rules given above. At the moment, some of these predicted forms exist as distinct new verbs with different meanings. Asterisks mark forms that are now non-existent.

(50) SINGULAR		PREDICTED DISTRIB PL	PREDICTED ITERATIVE PL
1. g̀̀b̀̀b̀̀	hang on	g̀̀d̀̀oŋ	g̀̀ù̀g̀̀d̀̀oŋ
2. t̀̀ì̀k	praise	t̀̀ì̀k	t̀̀ì̀t̀̀ì̀k
3. f̀̀ì̀t	be dark	f̀̀ì̀k	f̀̀ì̀f̀̀ì̀k
4. ẁ̀à̀k̀̀à̀	pull out	ẁ̀à̀aŋ	ẁ̀ù̀ẁ̀à̀k̀̀à̀
5. nỳ̀à̀ŋ̀̀à̀	save	*nỳ̀à̀aŋ	nỳ̀ì̀nỳ̀à̀ŋ̀̀à̀
6. t̀̀ò̀b̀̀b̀̀	tie	*t̀̀ò̀oŋ	t̀̀ù̀t̀̀ò̀b̀̀b̀̀
7. ẁ̀è̀l̀̀è̀	spread out	*ẁ̀è̀eŋ	ẁ̀ù̀ẁ̀è̀l̀̀è̀

In (51), each of these singular verbs is displayed along with the new verb formed from its plural form. The (a) forms are the singular verb forms while the (b) forms are the new verb forms.

(51) SINGULAR	DISTRIBUTIVE PLURAL	ITERATIVE PLURAL	
1a) g̀̀b̀̀b̀̀	g̀̀b̀̀b̀̀	g̀̀ù̀g̀̀d̀̀b̀̀b̀̀	hang on
b) g̀̀d̀̀oŋ	g̀̀d̀̀oŋ	g̀̀ù̀g̀̀d̀̀oŋ	be sticky
2a) t̀̀ì̀k	t̀̀ì̀k	t̀̀ì̀k	praise
b) t̀̀ì̀k	t̀̀ì̀k	t̀̀ì̀t̀̀ì̀k	abuse
3a) f̀̀ì̀t	f̀̀ì̀t	f̀̀ì̀f̀̀ì̀t	be dark
b) f̀̀ì̀k	f̀̀ì̀k	f̀̀ì̀f̀̀ì̀k	pinch
4a) ẁ̀à̀k̀̀à̀	ẁ̀à̀aŋ	ẁ̀à̀aŋ	pull out
b) ẁ̀ù̀ẁ̀à̀k̀̀à̀	ẁ̀ù̀ẁ̀à̀k̀̀à̀	ẁ̀ù̀ẁ̀à̀k̀̀à̀	make do
5a) nỳ̀à̀ŋ̀̀à̀	nỳ̀à̀ŋ̀̀à̀	nỳ̀à̀ŋ̀̀à̀	save, help
b) nỳ̀ì̀nỳ̀à̀ŋ̀̀à̀	nỳ̀ì̀nỳ̀à̀ŋ̀̀à̀	nỳ̀ì̀nỳ̀à̀ŋ̀̀à̀	struggle for
6a) t̀̀ò̀b̀̀b̀̀	t̀̀ò̀b̀̀b̀̀	t̀̀ù̀t̀̀ò̀b̀̀b̀̀	tie
b) t̀̀ù̀t̀̀ò̀b̀̀b̀̀	t̀̀ù̀t̀̀ò̀b̀̀b̀̀	t̀̀ù̀t̀̀ò̀b̀̀b̀̀	going from place to place
7a) ẁ̀è̀l̀̀è̀	ẁ̀è̀l̀̀è̀	ẁ̀è̀l̀̀è̀	spread out
b) ẁ̀ù̀ẁ̀è̀l̀̀è̀	ẁ̀ù̀ẁ̀è̀l̀̀è̀	ẁ̀ù̀ẁ̀è̀l̀̀è̀	be foolish

#### 4.2 LOSS OF FORMS

As a result of diachronic semantic shifts like those discussed in §4.1 (and no doubt due to other reasons as well), many verb forms, singular or plural, have been lost. The result of this is skewed morphology, with suppletive trisyllabic singular verb roots and monosyllabic iterative verb roots which are abnormal in the verbal phonology of the language.

Apart from the morphological and phonological abnormalities, loss of forms also present some semantic difficulties. In my data of 364 verbs, 241 (66%) had the same form for both singular and distributive plural, while 27 (8%) employed the iterative form for everything, i.e., singular, distributive, and iterative plural forms. Out of the 241 that remained invariant in singular and plural forms, 45 (12%) used the singular form for everything. Of the remaining 96 (26%), 2 remained invariant in distributive and iterative forms. Only 94 (25%) of the 364 verbs studied had the complete set of alternations. This means that, out of context, only 94 of the 364 verbs in my data can be used without any difficulties in decoding.

When the same forms are used to encode both singular and plural categories, it is impossible to know which meaning is meant without a given context. Some of these invariant forms are illustrated in (52), and the multiple meanings that each form can encode out of context are exemplified in (53) to (57).

(52) SINGULAR	DISTRIBUTIVE PLURAL	ITERATIVE PLURAL	
n̂	n̂	n̂	hear
ŝ	ŝ	ŝ	use

<b>fit</b>	<b>fit</b>	<b>fit</b>	play
<b>bóp</b>	<b>bóp</b>	<b>bóp</b>	build
<b>băak</b>	<b>băak</b>	<b>băak</b>	quarrel
<b>chiëek</b>	<b>chiëek</b>	<b>chiëek</b>	agree
<b>fákà</b>	<b>fákà</b>	<b>fákà</b>	redeem
<b>kèmê</b>	<b>kèmê</b>	<b>kèmê</b>	press
<b>kwùkwùlù</b>	<b>kwùkwùlù</b>	<b>kwùkwùlù</b>	suffer
<b>jiákà</b>	<b>jiákà</b>	<b>jiákà</b>	destroy

(53) **i-nò**      **ókpùt**

3s-heard    noise

He heard a noise. / He heard many noises. / He heard noise(s) several times.

(54) **i-bóp**      **úwù**

3s-build    house

He built a house. / He built many houses. / He built house(s) many times.

(55) **n-chiëek**    **íkô**      **kwùŋ**

1s-agree    word    2sPOSS

I agreed with your word. / I agreed with your words / I agreed with your word(s) many times.

(56) **ó-kèmê**    **ógá mé**      **inyoy**    **úwù**

2s-press    mat    PREP    top    house

You pressed a mat on the roof of the house. / You pressed many mats on the roof of the house. / You pressed (a) mat(s) many times on the roof of the house.

(57) **éfèt**      **i-jiákà**      **úkó**

wind    3s-destroyed    farm

The wind destroyed a farm. / The wind destroyed many farms. / The wind destroyed farm(s) many times.

#### 4.3 GENERAL OBSERVATIONS

Plurality in verbs may have been a widespread and consistent phenomenon in Obolo some time ago. Now only very few verbs retain a complete set of these distinctive plural forms, and these distinctive verb forms are observed mostly in the speech of older people.

In the data I worked with, only three distributive forms and two iterative forms were found in the 14 texts collected from children of 15 years and under. But my impression is that children of this age group know more of these forms than that, especially some common suppletive iterative forms such as **jiákà** 'destroy, waste', **gbùgbô** 'pull down', **jùjókò** 'crooked', **kpùkpúkù** 'crush', etc. In the texts collected from young people of 15 to 25 years, there were 118 distributive and 59 iterative forms, of which 25 were suppletive. The main speaker who supplied about 90% of the forms that were not found in my corpus of data was 44 years old. Our oldest informants were between 60 and 80 years of age, and they utilized all the available forms. Therefore, today, older people utilize it more than younger people because the forms were more productive when they were young than they are today.

#### 4.4 ORDER OF LOSS OF FORMS

Statistically, the rarest form among the younger generation was the iterative. As mentioned above, only two of these were found in the texts collected from children under 15, and 59 from recorded speech of teenagers and young adults from 15 to 25 years. Although these youngsters are capable of using more of these verb forms than

the statistics show, the conclusion that today, older people utilize it more than young people still holds. From the sparse usage among the younger generation, it seems obvious that this was the first form to disappear. Many times, young people employ the distributive forms to encode iterativity. For instance a young man in his early twenties, reporting an incident where some kids beat up a goat, employed the distributive form to index iterativity as illustrated in (58), whereas a man in his forties scolding his oldest son for beating up the younger children 'properly' utilized the iterative form as illustrated in (59).

(58) *é-kpókpô í-kí-sùt ébot yà í-kàná*  
 Cp-keep<sup>on</sup> NSP-IMPF-beatDS goat DEMs NSP-around  
 They kept on flogging the goat (as they chased it) around.

(59) *ò-kpókpò ì-kí-sùsùt òsàbón í-kàná mé úwù*  
 2s-keep<sup>on</sup> NSP-IMPF-beatingIT children NSP-around PREP house  
 You keep on beating up the children (all around) in the house.

The second form to disappear is of course the distributive form. Only three of these were found in the texts from children under 15, and only 118 in those from teenagers and young adults between 15 and 25 years of age. As mentioned concerning the iterative, these young people are also capable of utilizing more distributive forms than were found in their texts. Many young people employ singular forms to encode distributivity even when the distributive forms of such verbs are still in existence. Examples to illustrate this are given in (60) and (61). Example (60) was spoken by a 14-year-old boy while giving an account of a fight between himself and his elder brother. The fight went on for a long time without anybody separating the disputants. Example (61) is a proverb spoken by a man in his thirties. The boy who spoke (60) employed the singular form of the verb in the same environment where the man who spoke (61) 'properly' employed the distributive form.

(60) *kpùnù ògwu ò-tê-tèt èjì àbàyáagè*  
 no DET 3sFOC-REDUP-hold<sup>s</sup> 1p until  
 Nobody held (separated) us until...

(61) *érè éné íbà é-kí-tím ètím ògwú ò-sò*  
 place people two 3p-IMPF-fighting fight DET 3sFOC-making

*íta ó-kí-téek*

three 3sFOC-IMPF-holdDS

Where two people are fighting, it is a third person who holds (separates them).

Singular forms do not disappear. Rather, other forms, especially the iterative, develop semantically into new verbs. These are the synchronic iterative forms that do not have corresponding singular and distributive forms.

From these facts, it seems plausible to propose that the order of loss of forms is, first the iterative, then the distributive.

#### 4.5 POSSIBLE CAUSES OF LOSS OF FORMS

It is not the main thrust of this article to discuss language change. However, from casual observation, four possible highly interrelated causes of the disappearance of the complete structure of verbal plurality can be advanced. These are: educational problems related to bilingualism (Weinreich 1970), dialect interference, foreign interference, and normal transmission (Thomason and Kaufman 1988).

**Educational problems related to bilingualism.** In view of the correlation between the increased utilization of the different forms with speakers' ages, it is possible that this is one of the major causes of change. According to Weinreich (1970) when children re-

ceive instruction at school in a language other than their mother-tongue, not only is their education retarded, but their knowledge of their own language suffers, and its cultivation is neglected. This is true especially for an arcane aspect of the language that is no longer an obligatory category. The fact that school-age people are the most impoverished in the use of the forms shows that the forms are not learned before school age. The school system, which uses English as medium of instruction, does not help them to learn it. The situation is worse with children who study away from the language area.

Even those who have their education within the area, when they go out to get jobs elsewhere, lose so much of the knowledge of their language that it is quite an effort for them to speak it. There is little or no motivation to try to improve on their use of the language because their relatives, peers, and friends at home understand them however they speak. Besides, there are no economic benefits in mastering the language.

**Dialect interference.** The six dialects of Obolo can be placed on a continuum ranging from those that utilize these forms most of all to those that scarcely utilize them. Generally, in varying degrees, the eastern dialects use them most of all, while the western dialects scarcely use them. Of the eastern dialects, the one with the lowest level of education is the one that utilizes these forms most of all. Aspects of the language such as jokes, proverbs, riddles, and puns, in which these forms occur most, are used mostly in this one eastern dialect. In this way most of the complete structure of the verbal number category is preserved in this dialect. On the other hand, except for the suppletive iterative forms, the most north-westerly dialect, a very highly educated and prosperous dialect, rarely utilizes the iterative forms.

According to Arlotto (1972:204), "people will tend to adopt linguistic habits different from their own only when they feel that in some way these other habits are 'better'. As with most human institutions, what constitutes a better item is defined by higher social prestige of the individuals who use that item. Thus, the prestige factor might be looked upon primarily as a cause or reason for linguistic borrowing, whether across language or across dialect boundaries."

Accordingly, Aaron (1984) stated that the general direction of change in the eastern dialects of Obolo is toward the Ngo dialect, one of the prestigious western dialects in which the plural forms are least used, and that the change was caused mostly by contact. As speakers of these different dialects interact, which they do now on a large scale, the tendency is to settle for the simpler and more prestigious language form, which is a western dialect.

**Foreign interference.** Besides English, the other languages that Obolo interacts most with, and is influenced by, are Igbo, a Kwa language, and Ibibio, a Benue-Congo language. Kay Williamson (personal communication) has suggested that verbal plurality is a common phenomenon in other Benue-Congo languages, and that in these languages, it is also dying out. Benue-Congo and Kwa are both subfamilies of the Niger-Congo group, and may therefore share some characteristics in common. From personal knowledge of these three genetically and areally related languages, Obolo seems to have more plural verbs than the other two.

Obolo is influenced by Igbo and Ibibio through trade, and by English through the school system and the government. These languages have more economic advantages than Obolo. Since they don't have as much (or any) morphosyntactic verbal number category, Obolo people, who are almost all bilingual, don't seem to see the value of learning such a difficult and relatively 'unnecessary' aspect of their language any more (Arlotto 1972:204).

**Normal transmission.** The inevitable cumulative consequence of all of the above is that because parents don't know this category well, they cannot pass it on efficiently to their children. According to Thomason and Kaufman (1988:9,10), "a language is passed on from parent generation to child generation and/or via peer group from im-

mediately older to immediately younger, with relatively small degrees of change over the short run, given a reasonably stable sociolinguistic context." In Obolo today, the child generation, within which is the peer group, also doesn't know enough of the verbal number system. This therefore sets the stage for further loss of forms in the future.

## 5. CONCLUSIONS

In this article, I have presented a detailed and systematic description of the verbal number category in Obolo. I have shown that the complete structure of this category comprises the singular form and three morphosyntactically alternating plural forms, namely the distributive form which indexes plurality of patients in transitive sentences and of agents in intransitive sentences; the iterative form which indexes iterativity of same action; and the extensive iterative form which indexes an extensive iterativity of same event.

As the language changed with time, this phenomenon was also affected. There were semantic shifts and loss of forms in the category. Beside meaning ambiguities, these also resulted in morphological abnormalities in which suppletive iterative verb forms lexicalized into distinct new singular forms, and phonological abnormalities like singular verb roots with unusual syllable patterns. Another aspect of these abnormalities is the use of one verb form to encode both singular and plural forms.

In terms of use, statistical evidence showed that older people use the forms more than young people today. If my data of 364 verbs is a synchronic representative sample of the language, the fact that only 94 (25%) have the complete set of forms now may be an indication that the phenomenon is dying out in the language.

Among other possible causes, four factors were considered here to also contribute to the disappearance of the phenomenon in Obolo. These factors are educational problems related to bilingualism, dialect interference i.e., influence of other dialects of Obolo, foreign interference i.e., influence of other languages on Obolo, and normal transmission i.e., inefficient transmission of the forms from generation to generation due to the incompetence of the transmitters.

The category of verbal number in Obolo is further evidence that number marking is not an exclusive reserve of nominals as has been traditionally believed. With so little or no morphological number marking on nouns in the language, verbal number marking is indeed a necessary complement.

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### APPENDIX A

The distributive is formed by lengthening the vowel of the singular, and the iterative by reduplication of the distributive.

SINGULAR	DISTRIBUTIVE	ITERATIVE	
bāk	bāák	bùbāák	cut up
bén	bééŋ	bùbééŋ	carry
bǒn	bòóŋ	bùbòóŋ	beget
chép	chiééŋ	chìchiééŋ	be lost
chím	chííŋ	chìchííŋ	sew
chán	chiaáŋ	chìchiaáŋ	sweep (with broom)
fiák	fiáák	fìfiáák	to pain
gěŋ	gèéŋ	gìgèéŋ	sink
gǒn	gòóŋ	gùgòóŋ	to nail
gǔt	gùóŋ	gùgùóŋ	snore
gbâ	gbáaŋ	gbùgbáaŋ	call at
gwén	gwééŋ	gwùgwééŋ	call
jīt	jíík	jìjíík	refuse
jǒp	jòóŋ	jìjòóŋ	dance
ják	jáák/ŋ	jìjáák/ŋ	march on
kǒm	kòóŋ	kùkòóŋ	(turn) around/over
kóp	kóóŋ	kùkóóŋ	to paddle
kép	kééŋ	kìkééŋ	cut
kpāt	kpàák	kpùkpàák	pin together
kwát	kwáak	kwùkwáak	scrape/descale (fish)
kwún	kwúúŋ	kwùkwúúŋ	tie (wrapper)
kwǔk	kwùóŋ	kwùkwùóŋ	sweep
lět	lèék	lìlèék	hide
lép	lééŋ	lìlééŋ	buy
lóm	lóóŋ	lùlóóŋ	to bite
měŋ	mèéŋ	mùmèéŋ	swallow
tét	tééŋ	tùtééŋ	catch
tǎp	tàák	tùtàák	put
těm	tèéŋ	tùtééŋ	cook
tóp	tóóŋ	tùtóóŋ	throw
wǔt	wùúŋ	wùwùúŋ	blow
yét	yéék	yìyéék	marry

### APPENDIX B

The distributive is formed by lengthening the vowel of the singular, and the iterative by reduplication of the distributive.

SINGULAR	DISTRIBUTIVE	ITERATIVE	
bāák	bāák	bùbāák	quarrel
bǔkǔ	bǔkǔ	bùbǔkǔ	receive
bólò	bólò	bùbólò	open (eye after sleep)
bǔóŋ	bǔóŋ	bùbǔóŋ	be rich
bét	bét	bùbét	resemble

bóók	bóók	bùbóók	go stealthily
bóók	bóók	bùbóók	open wide
chít	chít	chìchít	cover
chíli	chíli	chìchíli	open
chák	chák	chìchák	laugh
chăk	chăk	chìchăk	touch
chiááŋ	chiááŋ	chìchiááŋ	gather
chíśók	chíśók	chìchíśók	rub in
chók	chók	chùchók	rub off
chā	chā	chìchā	hate
dō	dō	dùdō	ask/marry wife
dā	dā	dídā	push down
dūt	dūt	dùdút	pull along
dūk	dūk	dùdúk	smoke (fish)
dùlú	dùlú	dùdulù	be tough
dìmî	dìmî	dídímî	shake (of town)
dùŋú	dùŋú	dùdùŋù	smell
dèkê	dèkê	dídékê	calm down
fūk	fūk	fùfúk	count
fùúŋ	fùúŋ	fùfúŋ	bury
fèlè	fèlè	fùfèlè	reduce/divide/share
fólò	fólò	fùfólò	clean (fish)
fùkú	fùkú	fùfúkú	stir
fiăt	fiăt	fìfiăt	spoil
fiéek	fiéek	fìfiéek	be bad
fiàlà	fiàlà	fìfiàlà	dodge
fít	fít	fìfít	be black
fiáaŋ	fiáaŋ	fìfiáaŋ	deceive
gòók	gòók	gùgòók	follow/pursue
găk	găk	gìgák	overcome
găt	găt	gìgăt	live (life)
gèlè	gèlè	gìgèlè	lower
gòbò	gòbò	gùgòbò	hook/hang on
gê	gê	gìgê	write
gòóŋ	gòóŋ	gùgòóŋ	be sticky
gbăn	gbăn	gbùgbán	fence off
gbăŋ	gbăŋ	gbùgbăŋ	listen/taste
gbò	gbò	gbùgbò	vomit
gbô	gbô	gbùgbô	cut grass/bush
gbô	gbô	gbùgbô	curse
gbàkâ	gbàkâ	gbùgbàkâ	spread/cover cloth
gbàlà	gbàlà	gbùgbàlà	gather fish in trap
gbóók	gbóók	gbùgbóók	flow en mass
gwèéŋ	gwèéŋ	gwùgwèéŋ	be soft (e.g.,yam)
gwăk	gwăk	gwùgwăk	swim
gwók	gwók	gwùgwók	wash
gwú	gwú	gwùgwú	slaughter ritually
gwáŋ	gwáŋ	gwùgwáŋ	entangle/to wind
gwâ	gwâ	gwùgwâ	heal/sacrifice
gwóók	gwóók	gwùgwóók	pour

gwɔ̄	gwɔ̄	gwùgwɔ̄	scoop with hand
gwát	gwát	gwùgwát	write
gwát	gwát	gwùgwát	hasten
jót	jót	jùjót	be full
jět	jět	jìjět	melt/bring to
jééŋ	jééŋ	jìjééŋ	show/teach
j̀̀k̀̀	j̀̀k̀̀	j̀̀j̀̀k̀̀	be crooked
ját	ját	jìját	be bitter
j̄	j̄	j̀̀j̄	rot
j̄ŋ	j̄ŋ	j̀̀j̄ŋ	dip
káaŋ	káaŋ	kikáaŋ	have
kěm	kěm	kikém	be sufficient
kékè	kékè	kikékè	stand
kā	kā	kikā	return
kā	kā	kikā	open wide (mouth)
kát	kát	kikát	hug
kàná	kàná	kikánà	turn/go round
kók	kók	k̀̀k̀̀k̀̀	grind
kéek	kéek	kikéek	remember/think
kén	kén	kikén	bathe
kámà	kámà	kikámà	pry open
k̀̀l̀̀	k̀̀l̀̀	k̀̀k̀̀l̀̀	cough
k̀̀ŋ	k̀̀ŋ	k̀̀k̀̀ŋ	tilt
k̀̀m̀̀	k̀̀m̀̀	k̀̀k̀̀m̀̀	take from fire
kpàkà	kpàkà	kp̀̀kp̀̀k̀̀k̀̀	disobey
kp̄	kp̄	kp̀̀kp̄	look
kpā	kpaā	kp̀̀kpā	discuss/broadcast
kpé	kpé	kp̀̀kpé	pay
kpók	kpók	kp̀̀kpók	untie
kpót	kpót	kp̀̀kpót	roll
kwéek	kwéek	kẁ̀kwéek	sit/stay
kwák	kwák	kẁ̀kwák	to drum
kwěk	kwěk	kẁ̀kwěk	obstruct
kwúuŋ	kwúuŋ	kẁ̀kwúuŋ	bend down
kwā	kwā	kẁ̀kwā	scratch
kẁ̀k̀̀	kẁ̀k̀̀	kẁ̀kẁ̀k̀̀	smoothen
kwééŋ	kwééŋ	kẁ̀kwééŋ	learn
lũk	lũk	l̀̀l̀̀l̀̀k	live in a place
l̀̀ók	l̀̀ók	l̀̀l̀̀l̀̀ók	send/give message
l̄	l̄	l̀̀l̄	miss
l̄k	l̄k	l̀̀l̄k	weave
lómò	lómò	l̀̀l̀̀l̀̀m̀̀	(fire to) burn
lũt	lũt	l̀̀l̀̀l̀̀t	leak
làák	làák	l̀̀l̀̀l̀̀ák	rinse
màáŋ	màáŋ	m̀̀m̀̀m̀̀áŋ	lay
mā	mā	m̀̀m̀̀m̀̀ā	like
mē	mē	m̀̀m̀̀m̀̀ē	endure
n̄ŋ	n̄ŋ	ǹ̀ǹ̀ǹ̀ŋ	quench
náaŋ	náaŋ	ǹ̀ǹ̀ǹ̀áŋ/ǹ̀ǹ̀ŋ	to pain
námà	námà	ǹ̀ǹ̀ǹ̀m̀̀	build

nèmê	nèmê	nùnémê	please
náŋà	náŋà	nìnáŋà	finish/remove
nwènê	nwènê	nwùnwééŋ	change
nwô	nwô	nwùnwô	drink
nwón	nwón	nwùnwón	be good
nwòóŋ	nwòóŋ	nwùnwòóŋ	rejoice
nwê	nwê	nwùnwê	open (eye/anus)
nwáaŋ	nwáaŋ	nwùnwáaŋ	fit into
nyì	nyì	nyìnyì	give
nyê	nyê	nyìnyê	be strong
nyâ	nyâ	nyìnyâ	run amock
nyâ	nyâ	nyìnyâ	pass gas
nyóóŋ	nyóóŋ	nyìnyóóŋ	heat up (food)
nyóóŋ	nyóóŋ	nyìnyóóŋ	crawl
nyáŋà	nyáŋà	nyìnyáŋà	struggle for something
rê	rê	rìrê	reach
rióóŋ	rióóŋ	rìrióóŋ	know
riè	riè	rìriè	eat
ríkì	ríkì	rìrìkì	shudder
rô	rô	rùrô	do
riàák	riàák	rìriàák	pray/plead
riáák	riáák	rìriáák	be near
riák	riák	rìriák	to boil
ràkâ	ràkâ	rìràkâ	pass
rièéŋ	rièéŋ	rìrièéŋ	drive away
riâ	riâ	rìriâ	send
riáaŋ	riáaŋ	rìriáaŋ	be silent
riäk	riäk	rìriák	entertain
róm	róm	rùróm	create
róóŋ	róóŋ	rùróóŋ	measure/attempt
rëp	rëp	rìrëp	to rain
ràáŋ	ràáŋ	rìràáŋ	turn (eyes)
sô	sô	sùsô	be enough (number)
sâ	sâ	sisâ	struggle
sũŋ	sũŋ	sùsũŋ	keep
săk	săk	sisăk	own/take
sák	sák	sisák	be dirty
sóok	sóok/ŋ	sùsóok	shoot
sòók	sòók	sùsòók	urinate
söp	söp	sùsöp	chop
sébè	sébè	sisébè	make dirty
sìk	sìk	sisìk	shake
sikí	sikí	sisikí	bring low
sók	sók	sùsók	kindle (fire)
sòóŋ	sòóŋ	sùsòóŋ	to catch up with
tìbì	tìbì	tùtìbì	grow (of plants)/pass through
tùmú	tùmú	tùtùmú	speak
tàáŋ	tàáŋ	tùtàáŋ	to sound
tô	tô	tùtô	cry/put down
tìkì	tìkì	tùtìkì	to chorus

tàbà	tàbà	tùtábà	pull in
tùkù	tùkù	tùtúkù	wipe
tóbò	tóbò	tùtóbò	tie
tòón	tòón	tùtòón	shine/place on top
tót	tót	tùtót	plant
tím	tím	tùtím	fight
túŋ	túŋ	tùtúŋ	pound
tš	tš	tùtš	test/measure
tšók	tšók	tùtšók	be cold
tík	tík	tùtík	abuse
tíŋ	tíŋ	tùtíŋ	assemble
tót	tót	tùtót	plan
tóp	tóp	tùtóp	be delicious
tánà	tánà	tùtánà	be clean
tát	tát	tùtát	be correct
tùúŋ	tùúŋ	tùtùúŋ	gather (leaves)
tâ	tâ	tùtâ	finish
tê	tê	tùtê	float
tákà	tákà	tùtákà	chew/make face
típ	típ	tùtíp	contribute
tšŋ	tšŋ	tùtšŋ	praise
wâ	wâ	wùwâ	be many
wélè	wélè	wùwélè	spread
wóok	wóok	wùwóok	wade
wš	wš	wùwš	be weak/subside
wólò	wólò	wùwólò	mix
wèkè	wèkè	wùwèkè	pull apart
wŭm	wŭm	wùwŭm	to fan
wúkù	wúkù	wùwúkù	swell
wút	wút	wùwút	fold
wùúk	wùúk	wùwùúk	forget
yík	yík	yìyík	to place
yákà	yákà	yìyákà	twist/be rough wound
yák	yák	yìyák	spin round

## APPENDIX C

The distributive is formed from the singular by syllable or vowel reduction, and the iterative by reduplication of the distributive.

SINGULAR	DISTRIBUTIVE	ITERATIVE	
bénè	bééŋ	bùbééŋ	lift up
bòŋš	bòšŋ	bùbòšŋ	call loudly
chibî	chím	chìchím	scoop
fáŋà	fáaŋ	fùfáaŋ	break
gàmâ	gàaŋ	gìgàaŋ	scold/insult
gwàkâ	gwăk	gwùgwăk	tear
jîbî	jîm	jîjîm	uproot
kpókò	kpóŋ	kpùkpóŋ	break off
libî	lîŋ/lîm	lîlîŋ/lîlîm	run
lákà	láaŋ	lîláaŋ/lîlákà	lick
lóbò	lóŋ	lùlóŋ	be heavy

nèṅê	nèéṅ	nìnééṅ	repair
rámà	rááṅ	rìrááṅ	shout at
sìbì	sím	sìsím	go out
sábà	sááṅ	sìsááṅ	cross over
sùlú	sút	sùsút	beat/hit
sòkò	sók	sùsók/sùsókò	add to/join
tákà	tááṅ	títááṅ	chew
tóbò	tóṅ	tùtóṅ	throw (stone)
tókò	tóṅ	tùtóṅ	pour out drink
tóṅò	tóṅ	tùtóṅ	untie
wèlê	wèéṅ	wùwèéṅ	to dawn
wákà	wááṅ	wùwááṅ	remove sharp object
wùlú	wùúṅ	wùwùúṅ	jump
fòk	fón	fùfón	borrow
fíṅ	fín	fífín	throw away
wòsók	wón	wùwón	remove dress
chìṅ	chím	chìchím	steal

## APPENDIX D

The iterative is formed by vowel or syllable reduction.

SINGULAR	DISTRIBUTIVE	ITERATIVE	
dùúk	dùúk	dùdúk	massage
gwúuṅ	gwúuṅ	gwùṅgwuk	pin down
jàáṅ	jàáṅ	jìján	be beautiful
jèéṅ	jèéṅ	jìjén	hang
jùúk	jùúk	jùjúk	move
jóṅò	jóṅò	jùjóṅ	grow tall

## APPENDIX E

The iterative is formed by syllable expansion from the singular.

SINGULAR	DISTRIBUTIVE	ITERATIVE	
bák	bák	bùbákà	walk with difficulty through a forest
chík	chík	chìchíkì	squeeze in
láp	làák	lìlábà	drive away
jê	jê	jìjéṅè	walk
măn	màáṅ	mùmánà	give birth
nwăn	nwááṅ	nwùnwanà	squeeze
téṅ	tééṅ	títéṅè	gather small objects
wèék	wèék	wùwélè	search for
yăt	yàák	yìyálà	scatter

## APPENDIX F

The singular is used for both the distributive and the iterative without change of form.

SINGULAR	DISTRIBUTIVE	ITERATIVE	
bê	bê	bê	say
băn	băn	băn	watch for
bêm	bêm	bêm	look after

bóp	bóp	bóp	tie/build
bèlê	bèlê	bèlê	be pleased
bát	bát	bát	marry/make dirty
bǒŋ	bǒŋ	bǒŋ	shout/hit on ground
bèkê	bèkê	bèkê	belch
békè	békè	békè	bend/pull out
bàlâ	bàlâ	bàlâ	decorate
bóm	bóm	bóm	to fish
bèmê	bèmê	bèmê	carry
biâ	biâ	biâ	be stuck
chièék	chièék	chièék	agree
dásí	dásí	dásí	be first
fít	fít	fít	play
fùúk	fùúk	fùúk	breathe
fákà	fákà	fákà	redeem
gbět	gbět	gbět	be near
gbê	gbê	gbê	fit
gbìdíím	gbìdíím	gbìdíím	be short
gwùkú	gwùkú	gwùkú	open
kǒt	kǒt	kǒt	be able
kót	kót	kót	sing
kòbò	kòbò	kòbò	become
kèmê	kèmê	kèmê	press down
kóbò	kóbò	kóbò	scoop paste
kpùlú	kpùlú	kpùlú	gather
kwűk	kwűk	kwűk	scrub
nô	nô	nô	hear
néné	néné	néné	climb
nyáŋà	nyáŋà	nyáŋà	help/save
rê	rê	rê	be
sǎ	sǎ	sǎ	use/take along
sík	sík	sík	remain/leave over
sókò	sókò	sókò	pull out of shell
sáŋà	sáŋà	sáŋà	take away
télé	télé	télé	allow
tík	tík	tík	praise
tùk	tùk	tùk	shrink
tűŋ	tűŋ	tűŋ	to mud
yők	yők	yők	be hot
yót	yót	yót	be difficult

## APPENDIX G

The distributive is used for the iterative without change of form.

SINGULAR	DISTRIBUTIVE	ITERATIVE	
mĩn	mĩŋ	mĩŋ	be big

## APPENDIX H

The iterative is used for singular, distributive, and iterative without change of form.

SINGULAR	DISTRIBUTIVE	ITERATIVE	
bùbè	bùbè	bùbè	wander foolishly
chìchínì	chìchínì	chìchínì	meet from opposite direction
gwùgwákà	gwùgwákà	gwùgwákà	make roughly
ìjít	ìjít	ìjít	waste
ìjákà	ìjákà	ìjákà	destroy
kùkóbò	kùkóbò	kùkóbò	delay
kùkónò	kùkónò	kùkónò	to wind around
kìkánà	kìkánà	kìkánà	crooked (speech)
kìkét	kìkét	kìkét	linger/hesitate
kpùkpúkù	kpùkpúkù	kpùkpúkù	crush
kpìkpínì	kpìkpínì	kpìkpínì	squeeze (face)
kpùkpúnù	kpùkpúnù	kpùkpúnù	be rough (surface)
kwùkwúlù	kwùkwúlù	kwùkwúlù	suffer
kwùkwékè	kwùkwékè	kwùkwékè	behave weakly
sisáak	sisáak	sisáak	disturb
tùtù	tùtù	tùtù	re-open wound
tùtéek	tùtéek	tùtéek	wander helplessly
tùtómò	tùtómò	tùtómò	to heap up
tùtóbò	tùtóbò	tùtóbò	wander long distance
wùwélé	wùwélé	wùwélé	be foolish

## APPENDIX I

The iterative form is used for both singular and distributive, and a new iterative is formed.

SINGULAR	DISTRIBUTIVE	ITERATIVE	
gùgólò	gùgólò	gùgóṅ	mild quarrel
gìgákà	gìgákà	gìgáṅ	struggle to achieve
gbùgbò	gbùgbò	gbùgbòṅ	demolish
kwùkwók	kwùkwók	kwùkwókò	cope with little
kwùkwók	kwùkwók	kwùkwóṅ	sound like chicken

## APPENDIX J

The iterative is formed from the singular rather than from the distributive.

SINGULAR	DISTRIBUTIVE	ITERATIVE	
chík	chìík	chìchík	press person into water
dà	dáaṅ	dìdà	push aside
gěṅ	gèéṅ	gìgěṅ	shake out
gàná	gàáṅ	gìgàná	shout at
gòbò	góp	gùgòbò	sort out
gwút	gwùúk	gwùgwúk	shut
gwót	gwóók	gwùgwót/n	pass through small space
jikí	jíík	ìjìkì	shake person up
kónò	kóṅ	kùkónò	bend
kpáṅ	kpáaṅ	kpùkpáṅ	kill
kwàlá	kwàák	kwùkwàlá	slip down

níŋ	níŋ	nìníŋ	enter
nyám	nyáaŋ	nyìnyám	sell
nyǎn	nyàáŋ	nyìnyán	scatter
ròkò	ròóŋ	rùròkò	dig out
rák	ráaŋ	rìrák	run aground
ràk	ràáŋ	rìrák	support
rán	ráaŋ	rìrán	shiver
sìk	sìk	sìsìk	jerk
sèmê	sěm	sìsèmê	scold
síp	sìk	sìsíp/m	be small
típ	tìk	tìtíp	set trap

## APPENDIX K

The distributive is formed from the singular by syllable expansion.

SINGULAR	DISTRIBUTIVE	ITERATIVE	
róŋ	ròŋò	rùròŋò	fall

## APPENDIX L

The formation of the distributive and iterative involves a change of vowel or consonant from the singular.

SINGULAR	DISTRIBUTIVE	ITERATIVE	
chê	chǒn	chùchón	share
fā	fǎn	fùfán	hold tight/tie hard
fò	fǒn	fùfón	return
gbúk	gbóòk	gbùgbóòk	flow forcefully
kúp	kwéek	kwùkwéek	stay
kwú	kwáaŋ	kwùkwáaŋ	die
láak	lám	lìlám	sleep
múŋ	mòóŋ	mùnòóŋ	see
nǎ	nú	nùnú	come
sì	sáaŋ	sìsám	go

## APPENDIX M

A different word is used for the distributive, and the iterative is formed normally from the distributive by reduplication.

SINGULAR	DISTRIBUTIVE	ITERATIVE	
kpúk	sǎp	sùsǎp	cut/slice
mònnò	chíáaŋ	chìchíáaŋ	take/pack up
nàŋá	yǎt	yìyát	depart