The numerical system of Koring: An analysis

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Abstract

Two categories of numerals have been identified:

(i) basic numerals which include the numerals 'one' to 'ten', 'twenty' and 'forty'.

(ii) derivatives formed from basic numerals through either addition or multiplication or through a combination of both processes.

The glosses of the examples indicate the derivational history of (ii) above. These examples are here classified as secondary numerals.

(iii) The basic numerals also function in two other capacities: as both distributive numerals and ordinal numbers.

1. Introduction

Essentially the numerical system of Koring can be classified into two types;

(i) Basic numerals. They include 'one' to 'ten', 'twenty' and 'forty'. While one to ten are basic in several languages including English, 'twenty' and 'forty' are also considered as fundamental in Koring because they form the bases for the formation of other higher numerals of the language as shown in 2.1, 2.2 and 2.3 below.

(ii) Secondary numerals are derived from the basic ones through addition, multiplication and through a combination of both processes

1.1 Basic numerals[1]

Twelve numerals have been classified as basic in Koring. They are

guń[2]	'1'	bùrephā	'7'
ephā	'2'	bùàsà	'8'
ekiàr	'3'	rèphèji	'9'
èna	'4'	zǫ̀bǫ́	'10'
kòbúò	'5'	lòlúbò	'20'
buranē	'6'	ògekī	'40'

Apart from the above, no numeral in the language occurs independently. In fact others are derived through permutations involving additions, or multiplications of the basic numbers or by a combination of both processes. It is for this reason that we set up a separate category described as secondary for non-basic numerals.

1.2 Secondary numerals

Membership of this category is potentially uncountable since it could run into millions and billions which the numerical system, as it is now, may not be able to handle easily.

Three types of secondary numerals are identifiable as suggested above

(a) Those that are derived by addition of basic numerals
(b) Those that are derived by multiplication
c) Those that are derived through both processes

2.1 Numerals derived through addition

The base for deriving a secondary numeral is either zọ̀bọ́ (10) lòlúbò (20) ogekī (40). The added numerals are usually any or a combination of the basic numerals.

Examples;

(1)	zọ̀bọ́	e	guṅ			
	10	+	1	=	11	
(2)	zọ̀bọ́	e	ephā			
	10	+	2	=	12	
(3)	zọ̀bọ́	e	ekiàr			
	10	+	3	=	13	
(4)	zọ̀bọ́	e	èna			
	10	+	4	=	14	
(5)	zọ̀bọ́	e	kòbùò			
	10	+	5	=	15	
(6)	zọ̀bọ́	e	buranē			
	10	+	6	=	16	
(7)	zọ̀bọ́	e	bùrephā			
	10	+	7	=	17	
(8)	zọ̀bọ́	e	bùàsà			
	10	+	8	=	18	
(9)	zọ̀bọ́	e	rèphèji			
	10	+	9	=	19	
(10)	lòlúbò	e	zọ̀bọ́			
	20	+	10	=	30	

Ògekī (40) is the highest basic numeral in Koring. From 'ogekī' the morpheme indicating addition changes from /e/ to /ẹe/.

Examples

(11)	ogekī	ḅe	guń		
	'40'	+	1	=	41
(12)	ogekī	ḅe	ephā		
	40	+	2	=	42
(13)	ogekī	ḅe	ekià		
	40	+	3	=	43
(14)	ogekī	ḅe	èna		
	40	+	4	=	44
(15)	ogekī	e	kòbúò		
	40	+	5	=	45
(16)	zǫ̀ḅǫ́	ḅe	buranē		
	40	+	6	=	46
(17)	ogekī	ḅe	bùrephā		
	40	+	7	=	47
(18)	ogekī	ḅe	bùàsà		
	40	+	8	=	48
(19)	ogekī	ḅe	rèphèji		
	40	+	9	=	49
(20)	ogekī	ḅe	zǫ̀ḅǫ́		
	40	+	10	=	50

2.2 Numerals derived through multiplication

From the numeral 'sixty' upwards, the computational technique changes. Multiplication becomes an obligatory feature in the derivation of secondary numerals. It is noteworthy that unlike the addition process where a morpheme /e/ or /ḅe/denotes addition, a zero morpheme marks multiplication.

Examples:

(21)	lòlùbò ekià		
	20 x 3	=	60
(22)	ogekī ephā		
	40 x 2	=	80
(23)	lòlùbò kòbùò		
	20 x 5	=	100
(24)	lòlùbò buranē		
	20 x 6	=	120
(25)	lòlúbò bùrephā		
	20 x 7	=	140

The multiplicand sometimes remains constant while the multiplier increases in value in numerals leading up to high numbers as in (23) and (25) above and in the examples below:

(26) ogekī ena
40 x 4 = 160
(27) ogeki kòbúò
40 x 5 = 200
(28) ogeki bùrephā
40 x 7 = 280
(29) ogekī zǫ̀bǫ́
40 x 10 = 400
(30) ogekī lòlùbò
40 x 20 = 800

2.3 Numerals derived through multiplication and addition

Numerals belonging to the above category tend to be very polymorphemous, varying from four to even thirteen morphemes or more. Below an example of a numeral involving one addition and one multiplication is shown to have four morphemes while another involving four additions and two multipliers has a total of thirteen morphemes.

(31) ogekī zǫ̀be ephā ḅe guń
40 x 2 +1 = 81
(32) ogeki ephā ḅe lòlúbe ogeki ephā zǫ̀be guń
40 x 10 + 2 + 20 + [40x2] + 10 + 1 = 513.

Mathematical rules dictate that the multiplication should be effected before addition, the so called 'do me first' principle to arrive at the figure 513.

3. Distributive numerals[3]

The process involves full or partial reduplication of the basic numerals.

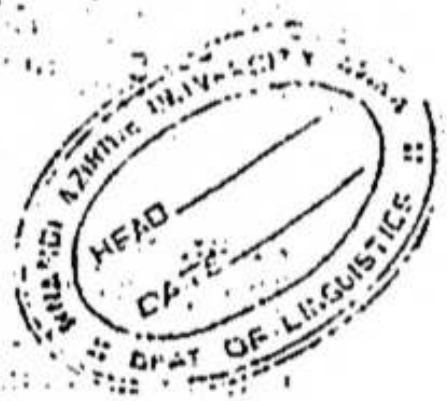
Examples:

(33) gùagùń 'one each'
(34) epha epha 'two, two', 'in twos'
(35) èkiàr èkiàr 'three, three', 'in threes'
(36) zǫ̀be bĕ kògbùò 'fifteen each', 'in fifteen'
(37) ogekí – ogekí 'forty-forty', 'in forties'
(38) ogekí zǫ̀bǫ́ ogekí zǫ̀bǫ́ 'four hundred', 'in groups of four hundred'

4. Ordinal Numbers

These are made up of compound nouns each: first noun represents 'person who' while the second is a basic numeral. Examples:

(39)	ọlẹ̀ gun	'first person'
	ọgbā ephā	'second person'
	ọgbā èkiàr	'third person'
	ọgbā èna	'fourth person'
	ọgbā zọ̀bọ	'tenth person'
	ọgbā lọ̀lùbọ̀	'twentieth'
	ọgbā ogeki zọbọ	'400th'



5. Other Terms of Quantity

kedu	'abundant'
pẹẹ	'small'
oduḅaṅ	'big'

Such terms perform adjectival functions as shown in the following.

(40) Anyọr èyàà ogbilā kedu
we have food abundant 'We have abundant food.'

(41) Ogbilā anyọr ude pee
food our is small 'Our food is small in quantity.'

6. Conclusion

There are problems associated with the above counting system, chief of which is that often, especially when quoting numerals involving multiplications and additions errors arise from mathematical miscalculations in the process of enumeration. However, the above method is purely traditional. It is hoped that with modernization, the language as well as the numeral system would undergo changes such as decimalization which could render the system less cumbersome.

Endnotes

1. This analysis is based on data contained in Enemuo Cecilia et al 2006. 'The Numerical System of Koring Language (A Case Study of One to One Thousand in Okpoto Dialect)'.Department of Linguistics B.A Project. Nnamdi Azikiwe University, Awka.
2. Tonal convention: The high tone is left unmarked throughout, while low tone is marked with / ` / and the downstep is marked with / ꜜ /.
3. Based on oral information from my informant, Mr. Goddy Okoro, of ESBS Abakaliki.