

Computation of Numerals in Nupe Gbagyi, Egbira: Evidence from the Morphological Structure

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Abstract

In an important agenda setting study in 1976, Bendor-Samuel investigated the numeral system of twelve Nigerian languages. In the process, he established some sort of template by which the numeral systems of other languages may be studied. Almost four decades after this landmark study, the Linguistic Association of Nigeria (LAN) revisited this issue on the sidelines of its conference in 2013. The importance of these studies as noted in Oyeade (2013, 2014, 2016) ranges from the clue they could provide about genetic and contact history of languages, to insight into the cognitive process of numbers computation in the minds of ancient Africans. This paper explores the numeral systems of three genetically related and geographically coterminous languages- Nupe, Gbagyi and Egbira- to investigate their computation system through the analysis of their morphological structure. A most obvious finding is that, while Nupe and Egbira exploit quinary (base 5) and vigesimal (base 20) systems, Gbagyi uses a decimal (base 10) system. The three Nupoid languages exploit the arithmetical operations of addition, subtraction and multiplication in varying degrees. We suggest, based on our findings, that Nupe retained the closest similarity to the Proto numeral system of Nupoid, while Gbagyi has veered furthest from the Proto form. Furthermore, we conclude that the traditional Nupoid numeral system is severely endangered, as is the case with most of the languages in Nigeria. This underscores the imperative to urgently describe and document this aspect of our communication system.

Keywords: *Quinary, ternary, decimal, vigesimal, Nupoid, numeral system*

Introduction

In an important agenda setting article in 1976, John Bendor-Samuel explored the numeral systems of twenty-two Nigerian languages with the aim of "... developing a method of describing [numeral systems] which will state the essential elements of the numeral systems and describe the ways in which these elements are used within the system." Almost four decades later, the Linguistic Association of Nigeria (LAN), on the sidelines of its 23rd Annual Conference, organized a workshop on the numeral systems of Nigerian languages as a response to the documenting and archiving of numeral systems of the world's languages by Eugene S. L. Chan in collaboration with Bernard Comrie. As Ndimele observes, on the archival website less than 100 languages, out of the over 450 languages spoken in Nigeria, have their representational numerals reflected.

As pointed out by many participants at the LAN workshop, the traditional counting systems of Nigerian languages are severely endangered: the system of Nk̄or̄or̄ (an Eastern Ijoid language) is endangered because "... a modern system in which counting is done in base ten is being taught in schools" (Obikudo, 2013:27). The Òkò (West Benue-Congo) system is threatened because "... the act of counting in Òkò has been left to older members

of the community, while the younger generation prefers to express numerals in the English language...” (Atoyebi, 2013:41). Fulfulde numeral system is endangered as “... children within the age-bracket of 7-12 years could only count up to 20” (Mohammed, 2013). Fulfulde numeral system is threatened by Hausa as the above named demography augment their counting deficit with Hausa numerals.

Even Yoruba, which has a relatively stable numeral system, is under pressure to review and ‘modernize’ its traditional numeral system; as noted by Olubode-Sawe (2013:200), “... Nolu Emenanjo wondered why the decimalization of the Yoruba number system has lagged so far behind that of Igbo, considering that the decimalization proposals for both were mooted in the 1970s.”

Almost every language in Nigeria has this story to tell: the traditional numeral system is severely endangered. It is our opinion, therefore, that a systematic programme for documenting and describing the numeral systems of our languages is an urgent task that we must undertake before we lose finally, the essence of the traditional numeral system of our languages.

This paper sets out to analyze the numeral systems of the three major languages of the Nupoid group: Nupe, Gbagyi and Ebira with the aim of presenting their essential characteristics. Interesting comparisons would be made, in an effort to discover the proto form of the Nupoid numeral system. Data for this research were obtained from secondary sources on the internet and from books. The data were cross-checked from primary sources and modified accordingly, where necessary. Data for Gbagyi were sourced entirely from informants. Analysis of the computation system was carried out through the aid of morphological analysis of the numeral forms in these languages.

The next section provides some details and analysis of the numeral system of Nupe, while the third section does the same for Gbagyi. The fourth section presents an analysis of the numeral system of Ebira. All of these prepare the ground for the fifth section which carries out a comparison of the numeral systems of the three languages. The final section concludes the paper with remarks on the salient findings of the research.

Nupe

Nupe (Iso 639-3 nup) is a Benue-Congo language of the Nupoid phylum. With an estimated 800,000 speakers in 1990 and about 200,000 L2 speakers by 1999, Nupe is considered to be one of the minor languages in Nigeria (next in rank to the three major languages of Hausa, Yoruba and Igbo) (Okon Essien personal communication, 1988). Nupe is spoken in Niger State, Kwara (North), Kogi State and the Federal Capital Territory (FCT).

Nupe Numeral System

Jason Kandybowicz observed, in 2008, that Nupe traditional numeral system “... is largely being superseded by Hausa and/or English numerals above 100 (and even 20, N. V. Smith, 1967)”. This observation can be verified with evidence from the numeral system which we intend to show presently. Kandybowicz’s (2008) observation underscores the imperative to describe and document the Nupe traditional numeral system before it becomes extinct.

The traditional Nupe numeral system can be presented in table 1 below:

Table 1: Nupe Numerals

	1 Nìní	2 gubà	3 guta	4 gunni	5 gutsun	6 (5+1) gutswany i	7 (5+2) gutswabà	8 (5+3) gutòtá ¹	9 (5+4) gutwani i
10 guw ò	11) guwo bè nìní 10 + 1	12) guwo bè gubà 10 + 2	13) gwegi dín gubà 15 - 2	14) gwegi dín gunni 15 - 1	15) gwegi	16) gwegi bè nìní 15 + 1	17) gwegi bè gubà 15 + 2	18) eshi dín gubà 20 - 2	19) eshi dín nìní 20 - 1
20 eshi	21) eshi bè nìní 20 + 1	22) eshi bè gubà 20 + 2	23) eshi bè guta 20 + 3	24) eshi bè gunni 20 + 4	25) eshi bè gutsun 20 + 5	26) eshi bè gutswany i 20 + (5+1)	27) eshi bè gutswabà 20 +(5+2)	28) gbanwò dín gubà 30 - 2	29) gbanwò dín nìní 30 - 1
30 gba nwò	31) gbanwò bè nìní 30 + 1	32) gbanwò bè gubà 30 + 2	33) rudin dín gubà 35 - 2	34) rudí dín nìní 35 - 1	35) rudin	36) rudin bè gutswany i 35 + 1	37) rudin bè gubà 35 + 2	38) shibà dín gubà (20x2)-2	39) shibà dín nìní (20 x 2)-1
40 shib à 20 x 2	41) shibà bè nìní (20x2) +1	42) shibà bè gubà (20x2) +2	43) shibà bè guta (20x2) +3	44) shibà bè gunni (20x2) +4	45) shibà bè gutsun ì (20x2) + 5	46) shibà bègutswa nyi (20x2)+ (5+1)	47) shibà bè gutswabà (20x2)+ (5+2)	48) aràta dín gubà (20x3- 10)-2	49) aràta dín nìní (20x3- 10)-1
50 arát a 20x 3-10	51) aràta bè nìní (20x3- 10)+1	52) aràta bè gubà (20x3- 10)+2	53) aràta bè guta (20x3- 10) +3	54) aràta bè gunni (20x3- 10) +4	55) aràta bè gutsun ì (20x3- 10)+5	56) aràta bè gutswany i (20x3- 10)+(5+1)	57) aràta bè gutsabà (20x3- 10)+(5+2)	58) shita dín gubà (20x3)- 2	59) shita dín nìní (20x3)- 1
60 Shit a 20x 3	61) shita bè nìní 20 x 3+1	62) shita bè gubà è 20 x 3+2	63) shita bè guta 20 x 3+3	64) shita bè gunni 20 x 3+4	65) shita bè gutsun ì 20 x 3+5	66) shita bè gutwanyi (20 x 3)+ 5+1	67) shita bè gutswabà (20 x 3)+ (5+2)	68) adwani dín gubà (20x4- 10)-2	69) adwani dín nìní (20x4- 10)-1
70 adw ani 20x 4-10	71) adwani bè nìní (20x4- 10)+1	72) adwani bè gubà (20x4- 10)+2	73) adwani bè guta è (20x4- 10)+3	74) adwani bè gunni (20x4- 10)+4	75) adwani bè gutsun ì (20x4- 10)+5	76) adwani bè gutwanyi (20x4- 10)+(5+1)	77) adwani bè gutswabà è (20x4- 10)+(5+2)	78) shini dín gubà 20x4-2	79) shini bè gutwani 20x4-1
80) shin i 20 x 4	81) shini bè nìní (20x4) +1	82) shini bè gubà è (20x4) +2	83) shini bè guta è (20x4)+ 3	84) shini bè gunni (20x4) +4	85) shini bè gutsun ì (20x4) +5	86) shini bè gutswany i (20x4)+(5+1)	87) shini bè gutswabà è (20x4)+(5+2)	88) shini bè gutòta è (20x4)+ (5+3)	89) shini bè gutwani (20x4)+ (5+4)

90 shin i bè guw ò 20x 4 +10	91) shini bè guwò è tú nìní (20x4) +10+1	92) shini bè guwò è tú gubà (20x4) +10+2	93) shini bè guwò è tú guta (20x4) +10+3	94) shini bè guwò è tú gunni (20x4) +10+4	95) shini bè guwò è tú gutsun (20x4) +10+5	96) shini bè guwò è tú gutswanyi (20x4)+10 +(5+1)	97) shini bè è tú gutwabà (20x4)+10 +(5+2)	98) shitsun dín gubà (20x5)- 2	99) shitsun dín nìní (20x5)- 1
100 shits un 20x 5	101) shitsun bè nìní (20x5) +1	102) shitsun bè gubà è (20x5) +2	103) shitsun bè guta è (20x5) +3	104) shitsun bè gunni (20x5) +4	105) shitsun bè gutsun ì (20x5) +5	106) shitsun bè gutswany i (20x5)+(5+1)	107) shitsun bè gutswabà (20x5)+(5+2)	108) shitsun bè gutòta è (20x6)+(5+3)	109) shitsun bè gutwani (20x5)+(5+4)

Some interesting facts can be observed from the data in Table 1, which we take up in the next section.

Nupe Base System and Numeral Composition

Nupe seems to adopt a quinary (base 5) system. Evidence for this can be gleaned from the fact that the units 1- 5 are primary numbers while 6- 9 are composite numbers of 5 plus the relevant unit number. Thus, 6 is 5 + 1, 7 is 5 + 2, 8 is 5 + 3 and 9 is 5 + 4. This base 5 can be seen to operate almost consistently from the unit number up to 35. This fact is shown in 5, 10, 15, 20, 30, 35 as primary non-composite numbers; furthermore, they form the base for subsequent numbers (cf. 15 ‘gwegi’, 16 ‘gwegi bè nìní’, 35 ‘rudin’, 37 ‘rudin bè gubà’, etc). This quinary system ceases to operate after the number 40.

A second base system is the ternary one (base 3). This base system can be observed first of all, as fused into the quinary system, and begins to operate from after the decimal. Thus, 11 and 12 are units added to 10 while 13 and 14 are units subtracted from 15. The same pattern holds for 16-17, 18-19; however, from 21-27, we see that the pattern has virtually disappeared as these numerals evince unit numbers added to the vigesimal (base 20). The disappearance of this pattern is also observed in 41-47; 51-57; 61-67; 71-77; 91-97. Vestiges of this system show up in 31-32, 33-34; 36-37, 38-39 which retain the consistency of the original pattern but subsequently, we observe the ternary pattern only in 48-49; 58-59; 68-69; 78-79; and 98-99. It is our opinion that this is evidence of the gradual disappearance of the ternary sub-system in the numerals of Nupe.

Nupe also provides evidence for a vigesimal base system (base 20). The numbers 40, 60, 80 and 100 are derived by multiplying the vigesimal by the appropriate unit number. The only point at which the decimal (base 10) is used actively is 81-90 and 101-110. This, we argue, is not original to the traditional system but may be a gradual modification induced by pressure from Hausa and English numerals (both of which are basically decimal).

Nupe Arithmetical Operations

Nupe numeral system carries out the following arithmetical operations:

- a) **Addition:** This operation first shows up after the unit 5 and is used to derive the numbers 6, 7, 8 and 9. We encounter this operation again in the decimal intervals sometimes within the ternary group of the decimal interval (as seen in 11, 12; 16, 17; 31, 32; 36,

37) but, in most cases, from the first unit of the decimal to the seventh unit. This is most pronounced within the vigesimal group where 21-27 is derived by addition; the same applies to 41-47, 61-67; but also in the interval decimal 51-57 and 71-77, the vigesimal 80 and 100 extend the operation of addition to cover all of its units: 81-89; 101-109. Interestingly, while the operation of addition is achieved merely by compounding in the unit numerals, the decimal numerals introduce an addition morpheme 'bè' to achieve this operation.

b) **Subtraction:** This operation is applied, first to the ternary group within the quinary (cf. 13, 14; 18, 19; 33, 34; 38, 39), but its most consistent operation is on the last two numbers before a decimal juncture (for instance, 48, 49; 58, 59; 68, 69; 78, 79; 98, 99). This operation is evinced by a subtraction morpheme 'dín'. It would seem that this operation applies to the decimal juncture between vigesimals also (although the subtraction morpheme is unclear; cf. 50 which seems to be '60 less 10'; 70 could be '80 less 10').

c) **Multiplication:** This operation is achieved through compounding and is evident at vigesimal junctures. Thus, 40 is 20 x 2, 60 is 20 x 3, 80 is 20 x 4 and 100 is 20 x 5.

Evident from this analysis, we would suggest that the root forms of the basic quinary unit numbers are: 1=nìní²/anyi, 2=abà, 3=òtá, 4=ani and 5=tsun.

Gbagyi

Gbagyi (Iso 639-3 gbr/gby) is a Benue-Congo language of the Nupoid phylum. It is spoken in Niger State, Nasarawa State and the Federal Capital Territory (FCT) of Nigeria. It is estimated by 2006 survey of the national population commission to have 4.8 million native speakers.

Gbagyi Numeral System

The Gbagyi numeral system shows clear signs of loss of some patterns. Largely manifesting a decimal system, Gbagyi nevertheless, displays a residual quinary system, which has largely been eroded as a systematic pattern. The basic Gbagyi numeral system is presented in Table 2 below:

Table 2: Gbagyi Numerals

	1) ñnú	2) mbà	3) òta	4) ñnyi	5) ñtnu	6) tnányi 5+1	7) tná`bà 5+2	8) nyimwány imwá` 4+4(?)	9) chéwágb manyí` 10-1
10 àwo/ ñwo	11) àwóchég bmanyí` 10+1	12) àwóch ábà 10+2	13) àwóch àta 10+3	14) àwóch ànyi 10+4	15) àwóch àtnu 10+5	16) àwóche tnányi 10+5+1	17) àwóche tná`bà 10+5+2	18) àwóchenyi mwányimw á` 10+8	19) àwóch echéwágb bmanyí` 10+(10- 1)
20 shibà 10x2	21) shibàché gbmanyí` 10x2+1	22) shibàc hàbà 10x2+ 2	23) shibàc hàta 10x2+ 3	24) shibàc hànyi 10x2+ 4	25) shibàc hàtnu 10x2+ 5	26) shibàch etnányi 10x2+5 +1	27) shibàch etná`bà 10x2+5 +2	28) shibàchén yimwányi mwá` 10x2+8	29) shibàchec héwágbm anyí` 10x2+(10 -1)

30 shìta 10x3	31) shìtáché gbmanyí 10x3+1	32) shìtác hàbà 10x3+2	33) shìtác hàta 10x3+3	34) shìtách ànyì 10x3+4	35) shìtách àtnu 10x3+5	36) shìtách étnányì 10x3+5+1	37) shìtách etnà`bà 10x3+5+2	38) shìtáché nyimwány imwá 10x3+8	39) shìtáchéc hěwágbm anyí 10x3+(10-1)
40 shìny i 10x4	41) shìnyich égbman yí 20x4+1	42) shìnyì chàbà 20x4+2	43) shìnyì chàta 20x4+3	44) shìnyic hànyì 20x4+4	45) shìnyic hàtnu 20x4+5	46) shìnyic hétnány ì 20x4+5+1	47) shìnyic hétnà`b à 20x4+5+2	48) shìtáchény imwányim wá 20x4+8	49) shìtáchéc hěwágbm anyí 20x4+(10-1)
50 Shìtn u 10x5	51) shìtnúch égbman yí 10x5+1	52) shìtnú chàbà 10x5+2	53) shìtnú chàta 10x5+3	54) shìtnúc hànyì 10x5+4	55) shìtnúc hàtnu 10x5+5	56) shìtnúc hétnány ì 10x5+5+1	57) shìtnúc hétnà`b à 10x5+5+2	58) shìtnúchen yimwányi mwá 10x5+8	59) shìtnúche chěwágb manyí 10x5+(10-1)
60 shìtn ányì 10x(5+1)	61) shìtnány ichégbm anyí 10x(5+1)+1	62) shìtná nyichà bà 10x(5+1)+2	63) shìtná nyichà ta 10x(5+1)+3	64) shìtnán yichàn yì 10x(5+1)+4	65) shìtnán yichàtnu 10x(5+1)+5	66) shìtnán yichetn ányì 10x(5+1)+5+1	67) shìtnán yichetn á`bà 10x(5+1)+5+2	68) shìtnányic hényimwá nyimwá 10x(5+1)+8	69) shìtnányì chechěwá gbmanyí 10x(5+1)+ (10-1)
70 shìtn á`bà 10x(5+2)	71) shìtná`b à chégbma nyí 10x(5+2)+1	72) shìtná` bàchà bà 10x(5+2)+2	73) shìtná` bàchàtnu a 10x(5+2)+3	74) shìtná` bàchàn yì 10x(5+2)+4	75) shìtná` bàchàtnu 10x(5+2)+5	76) shìtná`b àchétná nyì 10x(5+2)+5+1	77) shìtná`b àchetnà `ba 10x(5+2)+5+2	78) shìtná`bàc hényimwá nyimwá 10x(5+2)+8	79) shìtná`bà chechěwá gbmanyí 10x(5+2)+ (10-1)
80 shíny imwá nyim wá 10x8	81) shínyim wányim wáchégb manyí 10x8+1	82) shínyì mwán yimwá chàbà 10x8+2	83) shínyì mwán yimwá chàta 10x8+3	84) shínyì mwán yimwá chànyì 10x8+4	85) shínyì mwán yimwá chàtnu 10x8+5	86) shínyim wányim wáchét nányì 10x8+(5+1)	87) shínyim wányim wàchet nà`ba 10x8+(5+2)	88) shínyimwá nyimwách ényimwán yimwá 10x8+8	89) shínyimw ányimwá chěwágb manyí 10x8+(10-1)
90 shich éwág bman yí 10x9	91) chěwágb manyích égbman yí 10x9+1	92) chěwá gbman yíchàb à 10x9+2	93) chěwá gbman yíchàtnu a 10x9+3	94) chěwá gbman yichàn yì 10x9+4	95) chěwá gbman yichàtnu 10x9+5	96) chěwág bmanyí chetnán yì 10x9+(5+1)	97) chěwág bmanyí chetnà` ba 10x9+(5+2)	98) chěwágbm anyíchény mwányim wá 10x9+8	99) chěwágb manyíche chěwágb manyí 10x9+(10-1)
100 tàgyì	101) tàgyíché gbmanyí 100+1	102) tàgyíc hàbà 100+2	103) tàgyíc hàta 100+3	104) tàgyíc hànyì 100+4	105) tàgyíc hàtnu 100+5	106) tàgyích etnányì 100+(5+1)	107) tàgyích etnà`ba 100+(5+2)	108) tàgyíchény imwányim wá 100+8	109) tàgyíche chěwágb manyí 100+(10-1)

Gbagyi Base System

At the unit level, Gbagyi operates the following basic numerals: 1, 2, 3, 4, 5; the numbers 6 and 7 are a composite of 5 + 1 and 5 + 2 respectively. The number 8 seems to be a reduplication of the number 4. We reach this conclusion because of the similarity in form of the first part of the numeral [nyimwa...] with the number 4 (n-nyi). The number 9 is literally “10 remaining 1”, which means ten less one.

Interestingly, this manner of composing the number 8 is also reported by Bendor-Samuel (1976) for Daba, a Chadic language spoken in Adamawa state of Nigeria as well as the northern part of Cameroon.

Gbagyi Numeral Composition

Gbagyi operates a largely decimal numeral system. 10 is a junction; 11 to 19 require the addition, with the aid of the addition morpheme ‘che’³, of unit number to the decimal junction. 20 seems to use a variant of 10, in the form of ‘shi’ multiplied by unit number 2; 21-29 adds the relevant unit number to 20. The numbers 30, 40, 50, 60, 70, 80, 90 all require a multiplication of 10 by the relevant unit number. The next junction with unique number is 100.

It is interesting to note that the variant form of 10 in composition shares distinct similarity with that of 20 in Nupe. We suggest that Gbagyi numerals have been massively simplified from a quinary-vigesimal system to a decimal one. Traditional vigesimal forms have been pressed to duty to perform decimal function (cf. Nupe ‘shibà’ = 40 and Gbagyi ‘shibà’ = 20; Nupe ‘shita’ =60 and Gbagyi ‘shita’ = 30, etc.).

Gbagyi Arithmetical Operations

Gbagyi exploits only two arithmetical operations actively: addition and multiplication. Addition is applied to numbers between decimal junctions while multiplication comes into play to derive decimal multiples. Subtraction is not seen as an active operation in the language; only a vestige of it is seen in the number 9.

Ebira

Ebira (Iso 639-3 Igb) is a Niger-Congo, Nupoid language spoken in Kogi, Nasarawa and Edo states by 1000,000 (900,000 monolingual) speakers.

Table 3: Ebira Numerals

	1	2	3	4	5	6	7	8	9
	ònyí	èèva	èètà	èèná	èèhí	(i)hínónyí 5+1	(ii)hímbá 5+2	(i)híntá 5+3	(i)hínnà 5+4
10 èèwú	11 èwúró nyá (10+1)	12 èwúrèè va (10+2)	13 èwúrèè tà (10+3)	14 èwúrèè hà (10+4)	15 èwúríè èhí (10+5)	16) èwúríhín ònyí 10+(5+1)	17 èwúrí hímbá 10+(5+2)	18 èwúrí híntá 10+(5+3)	19 èwúrí hínnà 10+(5+4)
20 òòhu	21 òòhuró nyá 20+1	22 òòhurèè èva 20+2	23 òòhurèè ètà 20+3	24 òòhurèè èná 20+4	25 òòhurèè èhí 20+5	26 òòhuríhí nònyí 20+(5+1)	27 òòhurí hímbá 20+(5+2)	28 òòhuríhí ntá 20+(5+3)	29 òòhuríhí nnà 20+(5+4)
30	31	32	33	34	35	36	37	38	39

ike hínón yí	ike hínóny írónyá 5x(5+1))+1	ike hínóny írèèva 5x(5+1))+2	ike hínóny írèètá 5x(5+1))+3	ike hínóny írèènà 5x(5+1))+4	Ikehím bá 5x(5+2)	ikehímbá rónyá 5x(5+2)+ 1	ikehímbá rèèva 5x(5+1)+ 2	ikehímbá rèètá 5x(5+1)+ 3	Ikehímbá ríhínnà 5x(5+1)+ 4
40 èbèè va 20x2	41 èbèèva rónyá (20x2) +1	42 èbèèva rèèva (20x2) +2	43 èbèèva rèètá (20x2) +3	44 èbèèva rèènà (20x2) +4	45 èbèèva rèèhí (20x2) +5	46 èbèèva ríhínònyí (20x2)+(5+1)	47 èbèèva ríhímbá (20x2)+(5+2)	48 èbèèva ríhíntá (20x2)+(5+3)	49 èbèèva ríhínnà (20x2)+(5+4)
50 èvarè wu (20x2)+1 0	51 èvarèw u rónyá (20x2) +10+1	52 èvarèw u rèèva (20x2) +10+2	53 èvarèw u rèètá (20x2) +10+3	54 èvarèw u rèènà (20x2) +10+4	55 èvarèw u rèèhí (20x2) +10+5	56 èvarèwu ríhínònyí (20x2)+1 0+(5+1)	57 èvarèwu ríhímbá (20x2)+1 0+(5+2)	58 èvarèwu ríhíntá (20x2)+1 0+(5+3)	59 èvarèwu ríhínnà (20x2)+1 0+(5+4)
60 èbèè á 20x3	61 èbèètà rónyá (20x3) +1	62 èbèètà rèèva (20x3) +2	63 èbèètà rèètá (20x3) +3	64 èbèètà rèènà (20x3) +4	65 èbèètà rèèhí (20x3) +5	66 èbèètà ríhínònyí (20x3)+(5+1)	67 èbèètà ríhímbá (20x3)+(5+2)	68 èbèètà ríhíntá (20x3)+(5+3)	69 èbèètà ríhínnà (20x3)+(5+4)
70 ètárè wu (20x3)+1 0	71 ètárèw u rónyá (20x3) 10+1	72 ètárèw u rèèva (20x3) 10+2	73 ètárèw u rèètá (20x3) 10+3	74 ètárèw u rèènà (20x3) 10+4	75 ètárèw u rèèhí (20x3) 10+5	76 ètárèwu ríhínònyí (20x3)10 +(5+1)	77 ètárèwu ríhímbá (20x3)10 +(5+2)	78 ètárèwu ríhíntá (20x3)10 +(5+3)	79 ètárèwu ríhínnà (20x3)10 +(5+4)
80 èbèè nà 20x4	81 èbèènà rónyá 20x4+ 1	82 èbèènà rèèva 20x4+ 2	83 èbèènà rèètá 20x4+ 3	84 èbèènà rèènà 20x4+ 4	85 èbèènà rèèhí 20x4+ 5	86 èbèènà ríhínònyí (20x4)+(5+1)	87 èbèènà ríhímbá (20x4)+(5+2)	88 èbèènà ríhíntá (20x4)+(5+3)	89 èbèènà ríhínnà (20x4)+(5+4)
90 ènàrè wú 20x4 +10	91 ènàrèw ú rónyá (20x4) +10+1	92 ènàrèw ú rèèva (20x4) +10+2	93 ènàrèw ú rèètá (20x4) +10+3	94 ènàrèw ú rèènà (20x4) +10+4	95 ènàrèw ú rèèhí (20x4) +10+5	96 ènàrèwú ríhínònyí (20x4)+1 0+(5+1)	97 ènàrèwú ríhímbá (20x4)+1 0+(5+2)	98 ènàrèwú ríhíntá (20x4)+1 0+(5+3)	99 ènàrèwú ríhínnà (20x4)+1 0+(5+4)
100 èchec hí	101 èchec hí rónyá 100+1	102 èchec hí rèèva 100+2	103 èchec hí rèètá 100+3	104 èchec hí rèènà 100+4	105 èchec hí rèèhí 100+5	106 èchec hí ríhínònyí 100+(5+1)	107 èchec hí ríhímbá 100+(5+2)	108 èchec hí ríhíntá 100+(5+3)	109 èchec hí ríhínnà 100+(5+4)

Base Form and Combination

Ebira operates a base 5 (quinary) as well as a base 20 (vigesimal) system. The numerals 1 to 5 are basic forms while 6 to 9 are a composition of 5 and the required unit number. 10 is a basic number while 11 to 15 are composed of 10 and the relevant unit number. 15 to 19 combine the decimal (10) with the quinary (5) and the required unit number. 20 is a basic numeral. 21 to 25 is a combination of the vigesimal (20) and the required unit number while 26 to 29, have a pattern similar with 10 except that in this case, the vigesimal is

substituted for the decimal. 30 is an interesting number: it seems, from its morphological form, that it is composed as “five in six places”. This number becomes a ‘basic’ form in combination of numerals from 31 to 35. The number 36 is “five in seven places”, and continues the pattern of 31-35 for 37 to 39. 40 begins to manifest the vigesimal as a basic unit for composition of new numbers as 40 seems to be “repeat 20 twice”; subsequently, all multiples of 20 follow this pattern: 60 is “repeat 20 three times”, 80 is “repeat 20 four times” but 100 seems to be another basic number.

It is important to note that Ebira expresses decimal juncture in a truncated form of a preceding vigesimal with an addition of 10. For instance, 40 is ‘ebeeve’, while 50 is ‘evarewu’, 60 is ‘*èbèḗtá*’ and 70 is ‘*ètarewu*’. Another interesting juncture is 100; although the number seems to be a unique one, the form looks like a reduplication of something. If it is a reduplication, could it be understood as “heaped in 50 twice”? This interpretation receives more weight when we consider the fact that an older and more traditional form of 50 is ‘igyiokyí’ which is a unique number and not a composite as the modern one presents.

In summary then, base 5 has junctures at 5, 10, 20, 30, 35, 40; the vigesimal operates from 40 and applies to multiples of 20.

Arithmetical Operation in Ebira Numerals

Ebira numerals apply addition and multiplication. In addition, from the morphological forms, it would seem to bring in the concept of bracket. Thus, for example, 32 ‘ikehínnyí-ri-èḗba’ could best be explained as ‘ $5 \times (5 + 1) + 2$ ’ where the bracketed form is added first, then multiplied by 5 and to the product is added the unit 2.

A fascinating pattern emerges in the computation of the numerals: before every base 5 juncture, we observe the sequence: 1, 2, 3, 4, JUNCTURE. The juncture is usually marked by a unique form different from the preceding pattern. This is clearly seen in 1 to 5; 6 to 10; 31 to 35; 36 to 39. Surprisingly, 11 to 19 and 21 to 29 operate as if it is a decimal system; whether this is a traditional pattern or the influence of a base 10 (decimal) beginning to intrude into the traditional pattern is not very clear⁴.

Another interesting pattern of computation shows up from 30 where we observe in parenthesis ... $(5 + 1)$; the next parenthetical pattern is ... $(5 + 2)$ and this shows up in the number 35. With such a system, we expect ... $(5 + 3)$ at 40, but the vigesimal takes over at that juncture to truncate that pattern.

In summary, Ebira computation of numerals operates addition, multiplication and bracketing.

Comparison and Implication for Proto-Nupoid Numeral System

The three major Nupoid languages share similarities but also manifest clear differences. We shall demonstrate these in this section.

The most obvious similarity among these Nupoid languages is the quinary (base 5) system. This system is residual in Gbagyi but it operates in a relatively fuller form in Nupe and Ebira. The quinary pattern systematically manifests in Nupe in 1 – 5, 6 – 10, 11 – 15, 15 – 20; then it breaks down in 20 – 25, but picks up again in 25 – 30, 30 – 35 and 35 – 40. In Ebira, the quinary pattern systematically operates in 1 – 5, 6 – 10; then it shows up as a multiplier in 30 – 35, 36 – 39.

Nupe and Ebira also operate a vigesimal (base 20) system which shows up most obviously in multiples of 20 (that is, 40, 60, 80...). Gbagyi seems to have lost this feature.

In terms of their arithmetical operations, all three languages operate addition; Nupe and Ebira supplement this with multiplication while Nupe alone introduces subtraction. Nupe and Ebira operate the interesting mathematical feature of bracketing. Gbagyi operates the bracketing system, minimally and the multiplication operation at decimal junctures.

In terms of differences, Nupe, alone, introduces a ternary system within the quinary one. This is observed in the pattern of "... + 1, ... + 2, ... - 1, ... - 2, JUNCTURE" that we find in 10- 12, 13 - 15; 16 - 17, 18 - 20; 26 - 27, 28 - 30; 31 - 32, 33 - 35; 36 - 37, 38 - 40. After the juncture 40, we observe this pattern only in the last four numerals before a decimal juncture.

Ebira, on the other hand, operates alone a system of counting in bundles of 5, such that '30' is '5 in 6 places', '35' is '5 in 7 places' this only operates in the decimal between the vigesimal (20) and its next multiple (40). Gbagyi, alone, operates a full decimal system with only addition and (restricted) multiplication arithmetical operation.

Conclusion

We have attempted a comparison of the numeral systems of the Nupoid languages of Nupe, Gbagyi and Ebira. The findings show that proto-Nupoid probably operated a quinary and vigesimal system. Furthermore, on the basis of the evidence, proto-Nupoid operated a ternary system within the quinary one. It is suggested that the proto numeral system exploited the arithmetical operations of addition, subtraction and multiplication. If our hypothesis is correct, then Nupe must be the most conservative of the three languages with Gbagyi being the most innovative in the sense of simplifying the system by restricting the multiplication to decimal junctures and losing the subtraction operation while converting to a decimal system. This innovation, we surmise, must have been under pressure from Hausa language, which operates a decimal system.

It is clear that the traditional Nupoid numeral system is under threat of extinction. This conclusion is aided by the observation of the gradual loss of the ternary pattern. This pattern, in Nupe, is restricted only to the first decimal levels and is not found in the other languages. The erosion of the quinary system, clearly seen in Ebira 21-29, which is being replaced by a decimal system, as well as the simplification, by Gbagyi, of the complex arithmetical system all point in that direction.

In view of all of these observations, it becomes imperative to document and analyze these traditional patterns before they succumb to the global pressure to decimalize.

Notes

1. It would seem that the alveolar affricate [ts] has been simplified to an alveolar stop in 'gutota', 'gutwani' which, we suspect, stem from /gutsota/ and /gutswani/ respectively.
2. Could this be the source for the Yoruba 'ṣíní' for 'farthing', which was the smallest unit of monetary value in the colonial period?
3. This lexical item is actually ambiguous; it is used in context to indicate subtraction or addition.
4. Although, we are inclined to believe the latter in view of the fact that our informant gave us optional forms for the number 35 as "ikehṣonyi-rì-ṣḣhi" or "ikehṣimba", that is "repeat 5 in 6 places then add 5" or "repeat 5 in 7 places". If the former (decimal) was continued as a pattern, it would align with a decimal system.

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APPENDIX A: NUPE NUMERAL SYSTEM

	1 Niní	2 gubà	3 guta	4 gunni	5 gutsun	6 (5+1) gutswanyi	7 (5+2) gutswabà	8 (5+3) gutòtá ¹	9 (5+4) gutwani ₁
10 guw ò	11) guwo bè niní 10 + 1	12) guwo bè gubà 10 + 2	13) gwegi dín gubà 15 - 2	14) gwegi dín gunni 15 - 1	15) gwegi	16) gwegi bè niní 15 + 1	17) gwegi bè gubà 15 + 2	18) eshi dín gubà 20 - 2	19) eshi dín niní 20 - 1
20 eshi	21) eshi bè niní 20 + 1	22) eshi bè gubà 20 + 2	23) eshi bè guta 20 + 3	24) eshi bè gunni 20 + 4	25) eshi bè gutsun 20 + 5	26) eshi bè gutswanyi 20 + (5+1)	27) eshi bè gutswabà 20 +(5+2)	28) gbanwò dín gubà 30 - 2	29) gbanwò dín niní 30 - 1
30 gba nwò	31) gbanw ò bè niní 30 + 1	32) gbanw ò bè gubà 30 + 2	33) rudin dín gubà 35 - 2	34) rudi dín niní 35 - 1	35) rudin	36) rudin bè gutswanyi 35 + 1	37) rudin bè gubà 35 + 2	38) shibà dín gubà (20x2)- 2	39) shibà dín niní (20 x 2)-1

40 shib à 20 x 2	41) shibà bè nìní (20x2) +1	42) shibà bè gubà (20x2) +2	43) shibà bè guta (20x2) +3	44) shibà bè gunni (20x2) +4	45) shibà bè gutsun ì (20x2) + 5	46) shibà bègutswa nyi (20x2)+ (5+1)	47) shibà bè gutswabà (20x2)+ (5+2)	48) aràta dín gubà (20x3- 10)-2	49) aràta dín nìní (20x3- 10)-1
50 arát a 20x 3-10	51) aràta bè nìní (20x3- 10)+1	52) aràta bè gubà (20x3- 10)+2	53) aràta bè guta (20x3- 10) +3	54) aràta bè gunni (20x3- 10) +4	55) aràta bè gutsun ì (20x3- 10)+5	56) aràta bè gutswany (20x3- 10)+(5+1)	57) aràta bè gutsabà (20x3- 10)+(5+2)	58) shita dín gubà (20x3)- 2	59) shita dín nìní (20x3)- 1
60 Shit a 20x 3	61) shita bè nìní 20 x 3+1	62) shita bè gubà è 20 x 3+2	63) shita bè guta 20 x 3+3	64) shita bè gunni 20 x 3+4	65) shita bè gutsun ì 20 x 3+5	66) shita bè gutwany (20 x 3)+ 5+1	67) shita bè gutswabà (20 x 3)+ (5+2)	68) adwani dín gubà (20x4- 10)-2	69) adwani dín nìní (20x4- 10)-1
70 adw ani 20x 4-10	71) adwani bè nìní (20x4- 10)+1	72) adwani bè gubà (20x4- 10)+2	73) adwani bè guta è (20x4- 10)+3	74) adwani bè gunni (20x4- 10)+4	75) adwani bè gutsun ì (20x4- 10)+5	76) adwani bè gutwany (20x4- 10)+(5+1)	77) adwani bè gutswabà è (20x4- 10)+(5+2)	78) shini dín gubà 20x4-2	79) shini bè gutwani 20x4-1
80) shin i 20 x 4	81) shini bè nìní (20x4) +1	82) shini bè gubà è (20x4) +2	83) shini bè guta è (20x4) +3	84) shini bè gunni (20x4) +4	85) shini bè gutsun ì (20x4) +5	86) shini bè gutswany (20x4)+(5 +1)	87) shini bè gutswabà è (20x4)+(5 +2)	88) shini bè gutòta è (20x4)+ (5+3)	89) shini bè gutwani (20x4)+ (5+4)
90 shin i bè guw ò 20x 4 +10	91) shini bè guwò è tú nìní (20x4) +10+1	92) shini bè guwò è tú gubà (20x4) +10+2	93) shini bè guwò è tú guta (20x4) +10+3	94) shini bè guwò è tú gunni (20x4) +10+4	95) shini bè guwò è tú gutsun (20x4) +10+5	96) shini bè guwò è tú gutswany (20x4)+1 0+(5+1)	97) shini bè è tú gutwabà (20x4)+1 0+(5+2)	98) shitsun dín gubà (20x5)- 2	99) shitsun dín nìní (20x5)- 1
100 shits un 20x 5	101) shitsun bè nìní (20x5) +1	102) shitsun bè gubà è (20x5) +2	103) shitsun bè guta è (20x5) +3	104) shitsun bè gunni (20x5) +4	105) shitsun bè gutsun ì (20x5) +5	106) shitsun bè gutswany (20x5)+(5 +1)	107) shitsun bè gutswabà (20x5)+(5 +2)	108) shitsun bè gutòta è (20x6)+ (5+3)	109) shitsun bè gutwani (20x5)+ (5+4)

APPENDIX B: GBAGYI NUMERAL SYSTEM

	1) ònńú	2) m̀bà	3) òta	4) ònyi	5) òntnu	6) tǹányì 5+1	7) tǹá`bà 5+2	8) nyimẁán yimẁá` 4+4(?)	9) ch̀éẁágb manỳí` 10-1
10 àwo/ ńwo	11) àwóché	12) àwóc h̀àbà	13) àwóc h̀àta	14) àwóch ànyi	15) àwóch àntnu	16) àwóch etǹányì	17) àwóch etǹá`bà	18) àwócheny	19)àwóc hech̀éẁá

	gbmany ĩ 10+1	10+2	10+3	10+4	10+5	10+5+ 1	10+5+ 2	imwǎnyi mwǎ̀ 10+8	gbmanyĩ ` 10+(10- 1)
20 shìb à 10x2	21) shìbàch égbman yĩ 10x2+1	22) shìbàc hàbà 10x2+ 2	23) shìbà chàta 10x2 +3	24) shìbàc hànyi 10x2+ 4	25) shìbàc hàtnu 10x2+ 5	26) shìbàc hetnán yi 10x2+ 5+1	27) shìbàc hetná` bà 10x2+ 5+2	28) shìbàchén yimwǎnyi mwǎ̀ 10x2+8	29) shìbàche chěwǎgb manyĩ 10x2+(1 0-1)
30 shìta 10x3	31) shìtáché gbmany ĩ 10x3+1	32) shìtác hàbà 10x3+ 2	33) shìtác hàta 10x3 +3	34) shìtác hànyi 10x3+ 4	35) shìtác hàtnu 10x3+ 5	36) shìtách étnányi 10x3+ 5+1	37) shìtách etná`bà 10x3+ 5+2	38) shìtáché nyimwǎn yimwǎ̀ 10x3+8	39) shìtáché chěwǎgb manyĩ 10x3+(1 0-1)
40 shìn yi 10x4	41) shìnyic hégbma nyĩ 20x4+1	42) shìnyi chàbà 20x4+ 2	43) shìnyi chàta 20x4 +3	44) shìnyi chàny i 20x4+ 4	45) shìnyi chàtn u 20x4+ 5	46) shìnyic hétnán yì 20x4+ 5+1	47) shìnyic hétná` bà 20x4+ 5+2	48) shìtáchén yimwǎnyi mwǎ̀ 20x4+8	49) shìtáché chěwǎgb manyĩ 20x4+(1 0-1)
50 Shìt nu 10x5	51) shìtnúc hégbma nyĩ 10x5+1	52) shìtnú châbà 10x5+ 2	53) shìtnú châta 10x5 +3	54) shìtnú châny i 10x5+ 4	55) shìtnú châtn u 10x5+ 5	56) shìtnúc hétnán yì 10x5+ 5+1	57) shìtnúc hétná` bà 10x5+ 5+2	58) shìtnúche nyimwǎn yimwǎ̀ 10x5+8	59) shìtnúch echěwǎg bmanyĩ 10x5+(1 0-1)
60 shìtn ǎnyi 10x(5+1)	61) shìtnán yìchégb manyĩ 10x(5+ 1)+1	62) shìtnǎ nyìch àbà 10x(5 +1)+2	63) shìtnǎ nyìch àta 10x(5 +1)+3	64) shìtnǎ nyìch ànyi 10x(5 +1)+4	65) shìtnǎ nyìch àtnu 10x(5 +1)+5	66) shìtnán yìchetn ǎnyi 10x(5+ 1)+5+1	67) shìtnán yìchetn ǎ`bà 10x(5+ 1)+5+2	68) shìtnǎnyi chényim wǎnyimw ǎ̀ 10x(5+1) +8	69) shìtnǎny ìcheché wǎgbma nyĩ 10x(5+1) (10-1)
70 shìtn ǎ`bà 10x(5+2)	71) shìtnǎ`b à chégbm anyĩ 10x(5+ 2)+1	72) shìtnǎ `bàch àbà 10x(5 +2)+2	73) shìtnǎ `bàch àta 10x(5 +2)+3	74) shìtnǎ `bàch ànyi 10x(5 +2)+4	75) shìtnǎ `bàch àtnu 10x(5 +2)+5	76) shìtnǎ` bàchétn nányi 10x(5+ 2)+5+1	77) shìtnǎ` bàchet nǎ`ba 10x(5+ 2)+5+2	78) shìtnǎ`bà chényim wǎnyimw ǎ̀ 10x(5+2) +8	79) shìtnǎ`b àcheché wǎgbma nyĩ 10x(5+2) (10-1)
80 shín yim wǎn	81) shínyim wǎnyim wǎchég	82) shínyi mwǎn yimw	83) shínyi mwǎn yimw	84) shínyi mwǎn yimw	85) shínyi mwǎn yimw	86) shínyi mwǎny imwǎc	87) shínyi mwǎny imwǎc	88) shínyimw ǎnyimwǎ chényim	89) shínyim wǎnyim wǎchéw

yim wá` 10x8	bmanyí` 10x8+1	áčhàb` à 10x8+2	áčhàt` a 10x8+3	áčhàn` yi 10x8+4	áčhàtn` u 10x8+5	hétnán` yì 10x8+(5+1)	hetná` ba 10x8+(5+2)	wányimw` á` 10x8+8	ágbman` yí` 10x8+(10-1)
90 shic hěw` ăgb man` yí` 10x9	91) chěwág` bmanyí` chégbm` anyí` 10x9+1	92) chěwá` gbma` nyích` àbà` 10x9+2	93) chěw` ăgbm` anyíc` hàta` 10x9+3	94) chěwá` gbma` nyích` ànyi` 10x9+4	95) chěwá` gbma` nyích` àtnu` 10x9+5	96) chěwá` gbman` yíchetn` ányì` 10x9+(5+1)	97) chěwá` gbman` yíchetn` á`ba` 10x9+(5+2)	98) chěwág` manyíché` nyimwán` yimwá` 10x9+8	99) chěwág` manyíche` e` chěwág` manyí` 10x9+(10-1)
100 tàgyi`	101) tàgyích` égbman` yí` 100+1	102) tàgyíc` hàbà` 100+2	103) tàgyíc` hàta` 100+3	104) tàgyíc` hànyi` 100+4	105) tàgyíc` hàtnu` 100+5	106) tàgyích` etnányi` 100+(5+1)	107) tàgyích` etnán`ba` 100+(5+2)	108) tàgyíchén` yimwányi` mwá` 100+8	109) tàgyíche` chěwág` manyí` 100+(10-1)

APPENDIX C: EBIRA NUMERAL SYSTEM

	1 ònyì	2 èèva	3 èètà	4 èènà	5 èèhí	6 (i)hínóny` í 5+1	7 (ii)hímbá` 5+2	8 (i)híntá` 5+3	9 (i)hínnà` 5+4
10 èèwú	11 èwúró` nyá` (10+1)	12 èwúrè` va` (10+2)	13 èwúrè` tá` (10+3)	14 èwúrè` hà` (10+4)	15 èwúrí` èhí` (10+5)	16) èwúríhín` ònyí` 10+(5+1)	17 èwúrí` hímbá` 10+(5+2)	18 èwúrí` híntá` 10+(5+3)	19 èwúrí` hínnà` 10+(5+4)
20 òòhu	21 òòhuró` nyá` 20+1	22 òòhurè` èva` 20+2	23 òòhurè` ètà` 20+3	24 òòhurè` ènà` 20+4	25 òòhurè` èhí` 20+5	26 òòhuríhín` ònyí` 20+(5+1)	27 òòhurí` hímbá` 20+(5+2)	28 òòhuríhín` tá` 20+(5+3)	29 òòhuríhí` nnà` 20+(5+4)
30 ike hínón` yí	31 ike hínóny` írónyá` 5x(5+1)+1	32 ike hínóny` írèèva` 5x(5+1)+2	33 ike hínóny` írèètà` 5x(5+1)+3	34 ike hínóny` írèènà` 5x(5+1)+4	35 Ikehím` bá` 5x(5+2)	36 ikehímbá` rónyá` 5x(5+2)+1	37 ikehímbá` rèèva` 5x(5+1)+2	38 ikehímbá` rèètà` 5x(5+1)+3	39 Ikehím` árhínnà` 5x(5+1)+4
40 èbèèva` a` 20x2	41 èbèèva` rónyá` (20x2)+1	42 èbèèva` rèèva` (20x2)+2	43 èbèèva` rèètà` (20x2)+3	44 èbèèva` rèènà` (20x2)+4	45 èbèèva` rèèhí` (20x2)+5	46 èbèèva` ríhínònyí` (20x2)+(5+1)	47 èbèèva` ríhímbá` (20x2)+(5+2)	48 èbèèva` ríhíntá` (20x2)+(5+3)	49 èbèèva` ríhínnà` (20x2)+(5+4)
50 èvarè` wu` (20x2)+10	51 èvarèw` u` rónyá` (20x2)+10+1	52 èvarèw` u` rèèva` (20x2)+10+2	53 èvarèw` u` rèètà` (20x2)+10+3	54 èvarèw` u` rèènà` (20x2)+10+4	55 èvarèw` u` rèèhí` (20x2)+10+5	56 èvarèwu` ríhínònyí` (20x2)+10+(5+1)	57 èvarèwu` ríhímbá` (20x2)+10+(5+2)	58 èvarèwu` ríhíntá` (20x2)+10+(5+3)	59 èvarèwu` ríhínnà` (20x2)+10+(5+4)
60	61	62	63	64	65	66	67	68	69

ẹ̀bẹ̀ẹ̀t á 20x3	ẹ̀bẹ̀ẹ̀tá rọ̀nyá (20x3) +1	ẹ̀bẹ̀ẹ̀tá rẹ̀ẹ̀va (20x3) +2	ẹ̀bẹ̀ẹ̀tá rẹ̀ẹ̀tá (20x3) +3	ẹ̀bẹ̀ẹ̀tá rẹ̀ẹ̀nà (20x3) +4	ẹ̀bẹ̀ẹ̀tá rẹ̀ẹ̀hí (20x3) +5	ẹ̀bẹ̀ẹ̀tá ríhínònyí (20x3)+ (5+1)	ẹ̀bẹ̀ẹ̀tá ríhímbá (20x3)+ (5+2)	ẹ̀bẹ̀ẹ̀tá ríhíntá (20x3)+ (5+3)	ẹ̀bẹ̀ẹ̀tá ríhínnà (20x3)+ (5+4)
70 ẹ̀tárẹ̀ wu (20x3))+10	71 ẹ̀tárẹ̀w u rọ̀nyá (20x3) 10+1	72 ẹ̀tárẹ̀w u rẹ̀ẹ̀va (20x3) 10+2	73 ẹ̀tárẹ̀w u rẹ̀ẹ̀tá (20x3) 10+3	74 ẹ̀tárẹ̀w u rẹ̀ẹ̀nà (20x3) 10+4	75 ẹ̀tárẹ̀w u rẹ̀ẹ̀hí (20x3) 10+5	76 ẹ̀tárẹ̀wu ríhínònyí (20x3)10 +(5+1)	77 ẹ̀tárẹ̀wu ríhímbá (20x3)10 +(5+2)	78 ẹ̀tárẹ̀wu ríhíntá (20x3)10 +(5+3)	79 ẹ̀tárẹ̀wu ríhínnà (20x3)1 0+(5+4)
80 ẹ̀bẹ̀ẹ̀n à 20x4	81 ẹ̀bẹ̀ẹ̀nà rọ̀nyá 20x4+ 1	82 ẹ̀bẹ̀ẹ̀nà rẹ̀ẹ̀va 20x4+ 2	83 ẹ̀bẹ̀ẹ̀nà rẹ̀ẹ̀tá 20x4+ 3	84 ẹ̀bẹ̀ẹ̀nà rẹ̀ẹ̀nà 20x4+ 4	85 ẹ̀bẹ̀ẹ̀nà rẹ̀ẹ̀hí 20x4+ 5	86 ẹ̀bẹ̀ẹ̀nà ríhínònyí (20x4)+ (5+1)	87 ẹ̀bẹ̀ẹ̀nà ríhímbá (20x4)+ (5+2)	88 ẹ̀bẹ̀ẹ̀nà ríhíntá (20x4)+ (5+3)	89 ẹ̀bẹ̀ẹ̀nà ríhínnà (20x4)+ (5+4)
90 ẹ̀nàrẹ̀ wú 20x4 +10	91 ẹ̀nàrẹ̀w ú rọ̀nyá (20x4) +10+1	92 ẹ̀nàrẹ̀w ú rẹ̀ẹ̀va (20x4) +10+2	93 ẹ̀nàrẹ̀w ú rẹ̀ẹ̀tá (20x4) +10+3	94 ẹ̀nàrẹ̀w ú rẹ̀ẹ̀nà (20x4) +10+4	95 ẹ̀nàrẹ̀w ú rẹ̀ẹ̀hí (20x4) +10+5	96 ẹ̀nàrẹ̀wú ríhínònyí (20x4)+1 0+(5+1)	97 ẹ̀nàrẹ̀wú ríhímbá (20x4)+1 0+(5+2)	98 ẹ̀nàrẹ̀wú ríhíntá (20x4)+1 0+(5+3)	99 ẹ̀nàrẹ̀wú ríhínnà (20x4)+ 10+ (5+4)
100 ẹ̀chech hí	101 ẹ̀chech í rọ̀nyá 100+1	102 ẹ̀chech í rẹ̀ẹ̀va 100+2	103 ẹ̀chech í rẹ̀ẹ̀tá 100+3	104 ẹ̀chech í rẹ̀ẹ̀nà 100+4	105 ẹ̀chech í rẹ̀ẹ̀hí 100+5	106 ẹ̀chechí ríhínònyí 100+(5+ 1)	107 ẹ̀chechí ríhímbá 100+(5+ 2)	108 ẹ̀chechí ríhíntá 100+(5+ 3)	109 ẹ̀chechí ríhínnà 100+ (5+4)