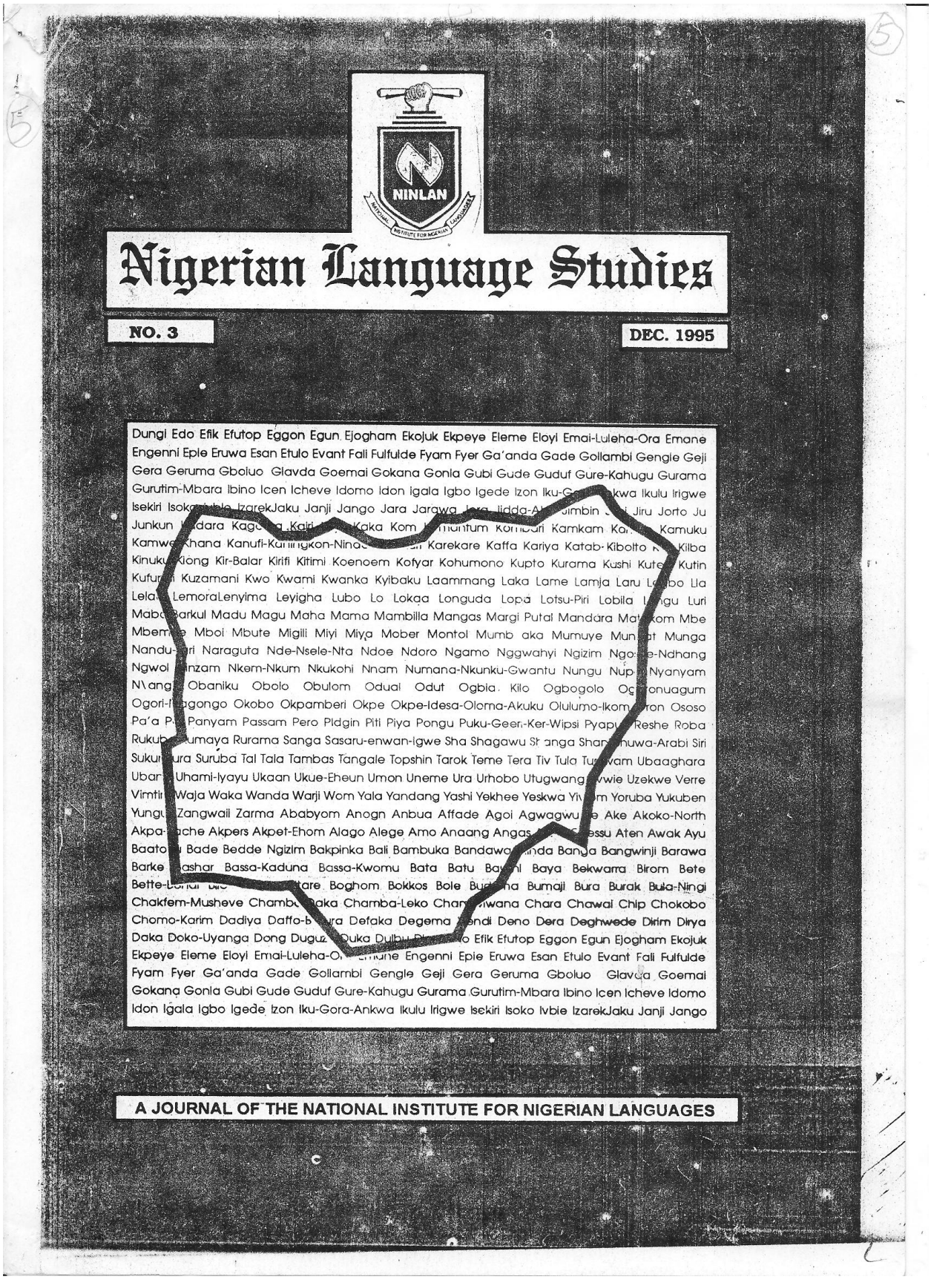

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Dungi Edo Efik Efutop Eggon Egun Ejogham Ekojuk Ekpeye Eleme Eloyi Emai-Luleha-Ora Emane Engenni Epie Eruwa Esan Etulo Evant Fali Fulfulde Fyam Fyer Ga'anda Gade Goliambi Gengle Geji Gera Geruma Gboluo Glavda Goemai Gokana Gonia Gubi Gude Guduf Gure-Kahugu Gurama Gurutim-Mbara Ibino Icen Icheve Idomo Idon Igala Igbo Igede Izon Iku-Gora-Ankwa Ikulu Irigwe Isekiri Isoko Ivbie IzarekJaku Janji Jango Jara Jarawa Jera Jidda-Abu Jimbin Jiru Jorto Ju Junkun Kadara Kagoma Kairi Kaka Kom Kamantum Kombori Kamkam Kamuku Kamwe Kana Kanufi-Karringkon-Ninda Karekare Kaffa Kariya Katab-Kibolto Kilba Kinuku Kiong Kir-Balar Kirifi Kitimi Koenoem Kofyar Kohumono Kupto Kurama Kushi Kute Kutin Kufuri Kuzamani Kwo Kwami Kwanka Kyibaku Laammang Laka Lame Lamja Laru Lebo Lia Lela LemoraLenyima Leyigha Lubo Lo Lokaa Longuda Lopa Lotsu-Piri Lobila Lungu Luri Maba Markul Madu Magu Maha Mama Mambilla Mangas Margi Putai Mandara Mat Kom Mbe Mbem Mboi Mbute Migili Miyi Miya Mober Montol Mumb aka Mumuye Mun At Munga Nandu ri Naraguta Nde-Nsele-Nta Ndoe Ndoro Ngamo Nggwahyi Ngizim Ngo e-Ndhang Ngwol nzam Nkem-Nkum Nkukohi Nnam Numana-Nkunku-Gwantu Nungu Nup Nyanyam N\ang Obaniku Obolo Obulom Odual Odut Ogbia Kilo Ogbogolo Og onuagum Ogori-M agongo Okobo Okpamberi Okpe Okpe-Idesa-Oloma-Akuku Olulumo-Ikom ron Ososo Pa'a P Panyam Passam Pero Pidgin Piti Piya Pongu Puku-Geer-Ker-Wipsi Pyapu Reshe Roba Rukub umaya Rurama Sanga Sasaru-enwan-Igwe Sha Shagawu Sh anga Shan huwa-Arabi Siri Sukur ura Suruba Tal Tala Tambas Tangale Topshin Tarok Teme Tera Tiv Tula Tu wam Ubaaghara Ubar Uhami-Iyayu Ukaan Ukue-Eheun Umon Uneme Ura Urhobo Utugwang vwie Uzekwe Verre Vimtim Waja Waka Wanda Warji Wom Yala Yandang Yashi Yekhee Yeskwa Yi m Yoruba Yukuben Yungu Zangwali Zarma Ababyom Anogn Anbua Affade Agoi Agwagwu e Ake Akoko-North Akpa- ache Akpers Akpet-Ehom Alago Alege Amo Anaang Angas essu Aten Awak Ayu Baato Bade Bedde Ngizim Bakpinka Bali Bambuka Bandawa inda Banga Bangwinji Barawa Barke ashar Bassa-Kaduna Bassa-Kwomu Bata Batu Ba i Baya Bekwarra Birom Bete Bette-Dorai Bi tare Boghom Bokkos Bole Bu ha Bumaji Bura Burak Bula-Ningi Chakfem-Musheve Chamb aka Chamba-Leko Cha iwana Chara Chawai Chip Chokobo Chomo-Karim Dadiya Daffo-B ura Defaka Degema endi Deno Dera Deghwede Dirim Dirya Daka Doko-Uyanga Dong Duguz Duka Dulbu o Efik Efutop Eggon Egun Ejogham Ekojuk Ekpeye Eleme Eloyi Emai-Luleha-O Emane Engenni Epie Eruwa Esan Etulo Evant Fali Fulfulde Fyam Fyer Ga'anda Gade Goliambi Gengle Geji Gera Geruma Gboluo Glavda Goemai Gokana Gonia Gubi Gude Guduf Gure-Kahugu Gurama Gurutim-Mbara Ibino Icen Icheve Idomo Idon Igala Igbo Igede Izon Iku-Gora-Ankwa Ikulu Irigwe Isekiri Isoko Ivbie IzarekJaku Janji Jango

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Counting in Base Five: The Derivation of Numerals in Bàtònū

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The fact that every speech community has its own number words that are used for counting, attests the claim that language permeates every aspect of human activities. The purpose of his paper is to examine the traditional system of counting in Bàtònū. Using the arithmetical phenomenon of base five or a multiple of five manifested in Bàtònū, the paper discusses the phonological processes of consonant deletion and vowel elision that characterize the derivation of numerals (cardinal and ordinal) in the language. The simplicity of the number base is considered an advantage, in learning the traditional system of counting in Bàtònū.

1. Introduction

Bàtònū is popularly known among the non-native speakers as Bàñbá or Bàrùbá. It is a language of the Gur (Voltaic) subgroup of the Niger-Congo family (cf. Welmers (1952, 1973) and Sanusi (1983)).

The language is spoken as a first language or mother-tongue in two adjacent countries: Nigeria and the Republic of Benin. Specifically, Bàtònū is spoken as a first language in the former Western Borgu Districts of Kwara State, which now constitute the newly created Baruteen Local Government Area of Kwara State, with its headquarters at Kósùbósù, Nigeria.

The traditional system of counting, in any given speech community, constitutes one of the sociolinguistic factors that make up the distinctness and individuality of that speech community as against other speech communities.

It is in recognition of this fact that this paper focuses on the characteristic way of counting in 'base five'; as well as the phonological processes of consonant deletion and vowel elision that are involved in the derivation of compound numerals in Bàtònū.

1.1 History of Numerals

In his treatment of the history of numerals, Spencer (1976:4) reports that,

> "Primitive tribes were able to keep count of sheep and other items by using sticks, stones, fingers, notches in wood, and knots in a string:.

Each language has words that are used for counting. Such number words can be written down in the same way as other words in a language. In his discussion of the history of numerals, Girling (1958:69-70) makes the assumption that, "Counting is nearly as old as speech and numerals are as old as writing".

The fact that every speech community has its own number words, in which numerals are written, is confirmed by Mitchell (1976:31) when he presents examples from six European languages to illustrate how numerals are written in number words. The examples are repeated here as (A):

A)

	ENGLISH	FRENCH	ITALIAN	GERMAN	DUTCH	SPANISH
1.	One	Un	Uno	Ein	Een	Uno
2.	Two	Deux	Due	Zwei	Twee	Dos
3.	Three	Trois	Tre	Drei	Drie	Tres
4.	Four	Quatre	Quattro	Vier	Vier	Cuatro
5.	Five	Cinq	Cinque	Funf	Vijf	Cinco
6.	Six	Six	Sei	Sechs	Zes	Seis
7.	Seven	Sept	Sette	Sieben	Zeven	Siete
8.	Eight	Huit	Otte	Acht	Acht	Ocho
9.	Nine	Neuf	Nove	Neun	Negen	Nueve
10.	Ten	Dix	Dieci	Zehn	Tien	Diez

It is not only in the European languages that number words are used; they are also found in all other human languages, as we can find in (B) below:

B)

	HAUSA	IGBO[1]	YORUBA
1.	ɗaya	ọtu (ɔ̀fu)	méní (ení)
2.	biyu	àbụ̄ā	méjì (èjì)
3.	ukù	àtọ (itọ; ẹtọ)	méta (ẹ̀ta)
4.	hudu	ànọ̀ (inọ; ẹ̀nọ)	mẹ́rin (ẹ̀rin)
5.	bĭyar	ĭse (iso)	márùn-ún(àrún)
6.	shidà	isĭ	mẹ́fà (ẹ̀fà)
7.	bakwàii	asaà(isaà; ẹ̀saà)	méje (èje)
8.	takwàs	àsatọ(isatọ; ẹ̀satọ̄)	mẹ́jọ (ẹ̀jọ)
9.	tarà	iteghete(itenaāni; itoolū)	mẹ́sàn-án(ẹ̀sán)
10.	gomà	ĭri (ĭli)	mẹ́wàá (ẹ̀wá)

1.2 On the Concept of Number Base

The Oxford English Dictionary (O.E.D.), Vol. VII, (1933:102) defines a 'radix' or 'base' as, "a number or symbol which is made the basis of a scale of numeration", or "an original word or form from which other words are derived".

In the early stages of development, according to Spencer (1976), the counting process became systematized when it was necessary to make more extensive counts. This was done by arranging the numbers into convenient basic groups. Thus the introduction of number bases.

Spencer (1976: 42) further claims that

> "Today some South American tribes count by hands, base 5. The base 12 was used in prehistoric times, chiefly in relation to measurements. The American Indian and Mayan tribes used a base 20 number system. The ancient Babylonians used a number system based on 60. This system is still used when measuring time and angles in minutes and seconds. A base, then, is the number of distinct digits required by a system of numeric notation".

Among the popular types of number bases, Girling (1958:70) recognizes the following:

1) (i) the binary (base two)
   (ii) the quaternary (base four)
   (iii) the quinary (base five)
   (iv) the denary (base ten)
   (v) the vigesimal (base twenty)

The decimal system of Arabic numerals (i.e. base 10) that we are most familiar with, was said to have been introduced into Europe by Adelard of Bath in about 110 AD, and by 1600 AD was in almost universal use (See Mitchell (1976:31)).

1.3 The Traditional System of Counting in Bàtɔ̀nū

Unlike in the popular decimal system of Arabic numerals, Bàtɔ̀nū uses base five (i.e. the quinary) or a multiple of five as the basis upon which both cardinal and ordinal numerals are derived. For instance, the numerals 'six' through 'nine' are derived based on five plus one through four, while 'ten' is regarded as a new unit (i.e. a multiple of five). In other words, the traditional system of counting in Bàtɔ̀nū requires that base five or a multiple of five serves as the basis through which all other numerals are derived.

The traditional system of counting in the language, as it affects both cardinal and ordinal numerals, can be exemplified as in (2) and (3) respectively:

(2) **Cardinal Numerals**

1. One = tía[2]
2. Two = ĭrū
3. Three = ĭtā
4. Four = ɲnɛ̄
5. Five = nɔ̄ɔ̄bù
6. /nɔ̄ɔ̄bù # kà # tía/ -----> [nɔ̄ɔ̄bātía]

five and one six
7. /nɔ̃ɔ̃bù # kà # ǐrū/ -----> [nɔ̃ɔ̃baǐrū]
five and two seven
8. /nɔ̃ɔ̃bù # kà # ǐtā/ -----> [nɔ̃ɔ̃baǐtā]
five and three eight
9. /nɔ̃ɔ̃bù # kà # ǹnē/ -----> [nɔ̃ɔ̃bāǹnē]
five and four nine
10. Ten = [ɔ̄kūrū][3]
11. /ɔ̄kūrū # kà # tía/ -----> [ɔ̄kūrātía]
ten and one eleven
12 /ɔ̄kūrū # kà # ǐrū/ -----> [ɔ̄kūraǐrū]
ten and two twelve
13. /ɔ̄kūrū # kà # ǐtā/ -----> [ɔ̄kūraǐtā]
ten and three thirteen
14. /ɔ̄kūrū # kà # ǹnē/ -----> [ɔ̄kūrāǹnē]
ten and four fourteen
15. Fifteen = [ɔ̄kūrānɔ̃ɔ̃bù]
16. /ɔ̄kūrū # kà # nɔ̃ɔ̃bù # kà # tia/ -----> [ɔ̄kūrānɔ̃ɔ̃bātía]
ten and five and one sixteen
17. /ɔ̄kūrū # kà # nɔ̃ɔ̃bù # kà # ǐrū/ -----> [ɔ̄kūrānɔ̃ɔ̃baǐrū]
ten and five and two seventeen
18. /ɔ̄kūrū # kà # nɔ̃ɔ̃bù # kà # ǐta/ -----> [ɔ̄kūrānɔ̃ɔ̃baǐtā]
ten and five and three eighteen
19. /ɔ̄kūrū # kà # nɔ̃ɔ̃bù # kà # ǹnē/ -----> [ɔ̄kūrānɔ̃ɔ̃bāǹnē]
ten and six and four nineteen
20. Twenty = [Yēñdū]
21. /Yēñdū # kà # tía/ -----> [Yēñdātía]
twenty and one twenty-one
22. /Yēñdū # kà # ǐrū/ -----> [Yēñdaǐrū]
twenty and two twenty-two
23. /Yēñdū # kà # ǐtā/ -----> [Yēñdaǐtā]
twenty and three twenty-three
24. /Yēñdū # kà # ǹnē/ -----> [Yēñdāǹnē]
twenty and four twenty-four
25. Twenty-five = [Yēñdānɔ̃ɔ̃bù]
26. /Yēñdū # kà # nɔ̃ɔ̃bù # kà # tía/ -----> [Yēñdānɔ̃ɔ̃bātía]
twenty and five and one twenty-six
27. /Yēñdū # kà # nɔ̃ɔ̃bù # kà # ǐrū/ -----> [Yēñdānɔ̃ɔ̃baǐrū]
twenty and five and two twenty-seven
28. /Yēñdū # kà # nɔ̃ɔ̃bù # kà # ǐtā/ -----> [Yēndānɔ̃ɔ̃baǐtā]
twenty and five and three twenty-eight
29. /Yēñdū # kà # nɔ̃ɔ̃bù # kà # ǹnē/ -----> [Yēndānɔ̃ɔ̃bāǹnē]
twenty and five and four twenty-nine
30. Thirty = [tènā]
35. Thirty-five = [tènānɔ̃ɔ̃bù]
40. Forty = [wèčrū]
45. Forty-five = [wèčrānɔ̃ɔ̃bù]
50. Fifty = [wèčrāɔ̄kūrū/wèčrākūrū]
55. Fifty-five = [wèčrākūrū kà nɔ̃ɔ̃bù]
60. Sixty = [wàtā]
65. Sixty-five = [wàtānɔ̃ɔ̃bū]
70. Seventy = [wàtāɔ̀kūrū/wàtākūrū]
75. Seventy-five = [wàtākūrū kà nɔ̃ɔ̃bù]
80. Eighty = [wènē]
85. Eighty-five = [wènānɔ̃ɔ̃bū]
90. Ninety = [wènāɔ̄kūrū/wènākūrū]
95. Ninety-five = [wènàkūrū kà nɔ̃ɔ̃bù]
100. One hundred = [wùnɔ̃bù]

(3) **Ordinal Numerals**

(i)	(i)	gbĩ̀kĩ̀rū		'First'
	(ii)	/yĩ̀rū + sèé/	----> [yĩ̀rūsèé]	'Second'
	(iii)	/ítā + sèé/	----> [ítāsèé]	'Third'
	(iv)	/ɲnɛ̄ + sèé/	----> [ɲnɛ̄sèé]	'Fourth'
	(v)	/nɔ̄ɔ̄bù + sèé/	----> [nɔ̄ɔ̄bùsèé]	'Fifth'
	(vi)	/nɔɔbaĩ̀a + sèé/	----> [nɔ̄ɔ̄bāĩ̀ásèé]	'Sixth'
	(vii)	/nɔ̄ɔ̄bāĩ̀rū + sèé/	----> [nɔ̄ɔ̄bāĩ̀rūsèé]	'Seventh'
	(viii)	/nɔɔbaita + sèé/	----> [nɔ̄ɔ̄bāĩ̀ásèé]	'Eighth'
	(ix)	/nɔɔbannɛ + sèé/	----> [nɔ̄ɔ̄bānnɛ̄sèé]	'Ninth'
	(x)	/ɔ̄kūrū + sèé/	----> [ɔ̄kūrūsèé]	'Tenth'

As we see from (3 i-x) above, apart from the first ordinal number **gbĩ̀kĩ̀rū**, other ordinal numerals in Bàtɔ̀nū are formed by adding the positional suffix morpheme **sèé**, which represents the English equivalent of '-nd', as in 2nd, '-rd' as in 3rd, and '-th' as in 4th, to each of the cardinal numerals in (2) above.

2. The Phonological Processes Involved in the Derivation of Numerals in Bàtɔ̀nū

As has been rightly described by Chumbow (1982) and Togun (1982), the derivation of both cardinal and ordinal numerals in Bàtɔ̀nū, as evident in (2) and (3) respectively, involves two phonological processes of consonant deletion and vowel elision.

The language uses five or a multiple of five as a base to which simple numerals are added to derive a compound numeral. In this process, an addition marker **kà** meaning 'and' in Bàtɔ̀nū is used as an arithmetic operator to add any number to the number base.

The two phonological processes must apply before a correct output of a compound numeral is derived in the language.

In the case of consonant deletion, it is the initial consonant of the addition marker **kà** (i.e. 'k') that is always deleted; while the case of vowel elision involves the last vowel of the 'number word' for five or any multiple of five that is involved in the derivation.

Chumbow (1982:2-4) formulates two phonological rules to account for the two phonological processes. The two rules (R_1) and (R_2) are repeated here as (4) and (5) respectively:

Consonant Deletion

(4) R_1 $\begin{bmatrix} +\text{cons.} \\ -\text{nas.} \end{bmatrix}$ ----- > Ø / $\begin{bmatrix} +\text{syll.} \\ -\text{cons.} \end{bmatrix}$ # -----

Prose statement: A word initial (non nasal) consonant is deleted when preceded by a vowel.[4]

In order to derive the correct output of a compound numeral, a rule of vowel elision (R_2) applies to the output of (R_1).

Vowel Elision

A rule of vowel elision applies to the last vowel of a number base adjacent to the vowel of the addition marker kà whose initial consonant 'k' has already been deleted by (R1). The required vowel elision rule, as formulated by Chumbow (1982), is stated in (5) below:

(5) R_2 V -----> Ø / ----- # V.

Prose statement: The last vowel of a preceding word (i.e. a number base) is elided as the word boundary when it is contiguous with the vowel of the following word.

As evident in (2) and (3), a sample derivation can be used to illustrate the application of the two rules as in (6):

(6)

	Five and two.	Ten and three
	nɔ̃ɔ̃bù # kà # ìrū.	ɔ̃kūrū # kà # ítā.
Consonant Deletion (R_1):	nɔ̃ɔ̃bù # à # ìrū.	ɔ̃kūrū # à # ítā.
Vowel Elision (R_2):	nɔ̃ɔ̃b # à # ìrū.	ɔkur # à # ìtā.
Output:	[nɔ̃ɔ̃bāirū]	[ɔ̃kūraîtā]

3. The Use of Numerals as Qualifiers in Bàtɔ̀nū

Syntactically, nouns in Bàtɔ̀nū exhibit a post-modification in their occurrence with numeral qualifiers (see Sanusi (1983)). The use of cardinal and ordinal numerals as qualifiers in Bàtɔ̀nū could be exemplified as in (7) and (8) respectively:

(7)	(i)	nāā tía	'One/ a cow'.
	(ii)	nɛ̄ɛ̄ ìrū	'Two cows'.
	(iii)	nɛ̄ɛ̄ ìtā	'Three cows'.
	(iv)	nɛ̄ɛ̄ ɲnɛ̄	'Four cows'.
	(v)	nɛ̄ɛ̄ nɔ̃ɔ̃bù	'Five cows', etc.

The cardinal numerals in (7) are used to indicate the exact quantity or number of nouns they co-occur with. Ordinal numerals are used to indicate the exact position where something occurs in a series. The examples in (8) illustrate the use of ordinal numerals as qualifiers in Bàtɔ̀nū.

(8)	(i)	bɔ̄ɔ̄ gbɪ̃ká (o)	The first goat'.
	(ii)	bɔ̄ɔ̄ ìrūsɛ̀ɛ́	'The second goat'.
	(iii)	bɔ̄ɔ̄ ìtasɛ̀ɛ́	'The third goat'.
	(iv)	bɔ̄ɔ̄ ɲnɛ̄sɛ̀ɛ́	'The fourth goat'.
	(v)	bɔ̄ɔ̄ nɔ̃ɔ̃bùsɛ̀ɛ́	'The fifth goat'. etc.

4. On the Simplicity of Derivation of Numerals in Bàtɔ̀nū

If simplicity of structure, rather than complexity, could be assumed to aid any form of learning, we consider the simple number base as well as the simple method of deriving compound numerals in Bàtɔ̀nū an advantage for learners.

A comparison between the traditional systems of counting in a neighbouring language like Yorùbá and Bàtɔ̀nū will reveal the simplicity and the ease with which numerals are derived in Bàtɔ̀nū. For instance, in his discussion of the numerals in Yorùbá, Awobuluyi (1994:33) shows the complexity involved in deriving numerals in the language as follows:

> "Most of the numerals in the language are derived, and they are derived in an often very cumbersome and complicated manner involving multiplication, addition, and subtraction. Thus, in traditional Yoruba counting, seventy-one, for instance, is **Ọkanlẹniaadọrin** lit. 'one plus four twenties minus ten', i.e. 1 + [(20 x 4) - 10]".

In other words, while three arithmetic operations- addition, multiplication, and subtraction are involved in the derivation of a number like seventy-one, as rightly observed by Awobuluyi (1994), only a single operation (i.e. addition) is required to derive the same number in Bàtɔ̀nū. The addition marker in Bàtɔ̀nū -- **kà** is used to derive seventy-one as in (9) below.

(9) /wàtā # kà # ɔ̃kūrū # kà # tía/ ----> [wàtāɔ̃kūrū kà tía]
sixty and ten and one seventy and one (i.e. 70 + 1 = 71)

It has been observed that, unlike in Yoruba, Bàtɔ̀nū does not use more than two arithmetic operators in the derivation of a particular number. Even in some cases where the language considers a process of addition to be cumbersome, it uses subtraction as an alternative approach. For instance, instead of deriving 'twenty-six' through the process of addition, as in (10), the language may as well prefer a simpler method in (11), in which 'four' is subtracted from thirty (the next number base).

(10) /Yɛ̃ñdū # kà # nɔ̃ɔ̃bù # kà # tíá/ ----> [Yɛ̃ñdāñɔ̃ɔ̃bātíá].
Twenty and five and one twenty-six

(11) (i) Twenty-six = [tɛ̀nā ɲnɛ̄ sàrí]
thirty four minus (i.e. 30 - 4 = 26)

In a like manner, twenty-seven, twenty-eight, and twenty-nine are derived as follows:

(ii) Twenty-seven = [tɛ̀nā ɪ̀tā sàrí]
thirty three minus (i.e. 30 - 3 = 27)

(iii) Twenty-eight = [tɛ̀nā ɪ̀rū sàrí]
thirty two minus (i.e. 30 - 2 = 28)

(iv) Twenty-nine = [tɛ̀nū tíá sàrí]
thirty one minus (i.e. 30 - 1 = 29)

(v) Thirty = [tɛ̀nā]

In other words, the language considers the process of subtraction in (11) to be much easier than the process of addition in (10). This further confirms the simplicity in the derivation of numerals in Bàtɔ̀nū.

5. Conclusion

The significance of traditional numerals within the linguistic and pedagogical development of a language calls for the need in this paper to briefly discuss the universality of the use of 'number words' as manifested in the counting systems among human languages (both written and unwritten).

Having reviewed the history of numerals, the paper examines the concept of 'number base' and uses its practical application to explain the phenomenon of 'base five' or a multiple of five in the traditional system of counting in Bàtɔ̀nū, as it affects both cardinal and ordinal numerals. The use of both cardinal and ordinal numerals as qualifiers in the language is also exemplified.

With the aid of the two phonological processes of consonant deletion and vowel elision, as described by Chumbow (1982), as well as the use of an addition marker **kà**, the paper illustrates how compound numerals are derived in Bàtɔ̀nū.

Finally, based on the use of simple numeral base (i.e. base five) and the simple way in which compound numerals are derived in Bàtɔ̀nū, we are of the view that potential learners of Bàtɔ̀nū, as a first or second language, will face little or no problem in learning the traditional numerals in the language.

Notes

*The significance of traditional numerals within the linguistic and pedagogical development of a language, as expressed by Awobuluyi (1994:33), sensitized the author into writing this paper. I thank Professor Oladele Awobuluyi for making his paper available for my use. I am solely responsible for any errors and infelicities of style.

1. Source: The Igbo number words are adapted from Emenanjo (1978:54).

   Tone Marking:

Igbo:	High tone:	unmarked.
	Downstep	
	Low tone:	
Hausa:	High tone:	unmarked
	Low tone:	
Yorùbá:	High tone:	
	Mid tone:	unmarked
	Low tone:	

2. It should be noted that Bàtɔ̀nū has not been officially reduced into writing. Published materials in the language are written with the J.P.A. symbols, as in Welmers (1952). Tone marking in the language is as follows:

   High tone:
   Mid tone:
   Low tone:

3. ɔ̄kūrū 'ten' is regarded as a new unit and *not derived*. Thus, a derivation like,

   /nɔ̄ɔ̄bù # kà # nɔ̄ɔ̄bù/ ----> *⌊nɔ̄ɔ̄bānɔ̄ɔ̄bù⌋
   five and five ten

   is not attested in the language.

4. (R_1) is independently motivated in the language whenever the use of addition marker is required to derive a compound numeral. However, an informant hinted that when counting from thirty-five and above, the application of (R_1) becomes optional, hence the addition marker within a derivation could be realized as an autonomous word. For example,

   Thirty-five = ⌊ùɛ̀nā kà nɔ̄ɔ̄bù⌋
   thirty and five
   Forty-five = ⌊wɛ̀ɛ̄rū kà nɔ̄ɔ̄bù⌋
   forty and five etc.

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