



Numerals in Kokborok

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Abstract

This paper will describe the numerals used in the Kokborok language. Kokborok belongs to the Bodo-Garo sub-group of the Tibeto-Burman language family, spoken in the Northeastern state of Tripura, India. According to the 2011 census, the Kokborok speakers' total population is around 8,80,537 (23.97% of the total population). This language happens to be one of the lingua-franca among the tribes. The numerals in Kokborok are of decimal type, i.e., ten base and purely absent of vigesimal, i.e., twenty base. Structurally, Kokborok categorizes into six numerals viz., (i) cardinals, (ii) ordinals, (iii) multiplicative, (iv) fractional, (v) distributive, and (vi) restrictive numerals. The raw numbers from one to ten are the basic numerals used as compounding for forming higher numerals by addition or multiplication. Syntactically, in compound nouns, the numeral always follows the head noun in Kokborok.

I. INTRODUCTION

Kokborok is a Tibeto-Burman language family spoken in the Northeastern state of Tripura, India. The language also does found in the adjoining states of Assam, Mizoram and the neighbouring country Bangladesh. Linguistically, Kokborok belongs to the Bodo-Garo sub-group of the Tibeto-Burman language family (Benedict, 1972). According to Shafer (1966-74), Kokborok comes under the Western Units of the Barish section within the subdivision of the Sino-Tibetan language family. Burling (2003) also came into view with the classification of Kokborok under the Bodo group of languages now under Bodo-Koch. In Tripura Tribal Areas Autonomous District Council (TTAADC), Kokborok, one of the state languages, is used as a lingua-franca among almost all the tribes. Kokborok also got recognition as one of the official languages of the state by the state Government on 19 January 1979. It has written literature with no script of its own. Presently, the language is written mainly in the Roman script, especially in Colleges, Universities, social media and other religious books, i.e., the Bible.

Generally, numerals are means for counting numbers. The basic digits are of a decimal type and are non-derivative and monomorphemic in Kokborok. Apart from basic numerals, all other cardinal numerals derive from basic

numerals. This framework will refer to forming different forms of digits by basic cardinal numerals. The framework will also see that the numeral uses classifiers for denoting differential objects. Syntactically, the parameter of basic word order is subject-object-verb (SOV); in that case, the noun numerals always follow the head nouns in Kokborok.

II. LITERATURE REVIEW

Only a few researchers have worked in detail regarding the numerals in Kokborok. A few researchers who have worked on numerals in the language are listed below.

Pushpa Pai (1994) briefly described the numeral system as decimal type. She also wrote examples of counting with twenty bases as *k^holpe* 'twenty', which is of vigesimal type and purely absent in Kokborok.

According to Francois Jacquesson (2008), numerals cannot form without a classifier, and the group classifier is attached to the digits for counting.

In his English-Kokborok-Bengali dictionary, Binoy Debbarma (2013) wrote a counting method in Kokborok with the gloss in English and Bengali. The purpose of this book remains only for vocabulary reference.

In his Kokborok-English dictionary (2017), Binoy Debbarma wrote again on the counting methods in Kokborok having an English gloss which appears to be only for reference. In all of his dictionary publication series, in the appendix section, Debbarma has included numerals as a vocabulary stock with English gloss.

Samir Debbarma (2014), in his thesis "The Structure of Kokborok," described in detail the numerals in Kokborok. Still, a few classifications of distributive and restrictive numerals do need to be included, which are very much evident in the language.

After a preliminary review, it notices the language many researchers still need to use to classify the numerals linguistically. Therefore, this proposed study may help to discover reports on digits in Kokborok.

III. DATA AND METHODOLOGY

The collection of data is from the on-field and off-field visits. The technique of telephonic conversation was the main instrument used for collecting data for this proposed study from several informants from the experts of Kokborok speakers. The telephonic conversation was also captured and recorded with the help of a voice recorder. The regional varieties like Debbarma, Jamatia, Reang, Kalai, Rupini, Tripura, Murasing, Noatia, and Uchai were the dialectical variations in Kokborok, which makes it difficult to access the data accurately. Among these speakers, the Debbarma dialect is considered the standard variety, comprising its most significant number of speakers among all the tribes, one being Tripura's princely state language. After collecting the data, the language experts cross-checked, discussed and analyzed it. Other than primary sources, secondary sources are also used, usually in the form of books, journals, articles, etc., for the proposed study.

IV. KOKBOROK NUMERALS

4.1 Numerals in Kokborok

The value of numerals appears to be purely decimal type and vigesimal or quinary, which is of twenty bases or five bases that have no correspondence in describing the number of digits in Kokborok. Apart from basic numerals, compound numerals form higher values of integers either by employing addition or multiplication or addition plus multiplication, as was the case in many South Asian languages. Structurally, the Kokborok numerals do classify into six types, namely.

- (i) Cardinal numerals
- (ii) Ordinal numerals
- (iii) Multiplicative numerals

- (iv) Fractional numerals
- (v) Distributive numerals; and
- (vi) Restrictive numerals

4.2 Cardinal numerals

Cardinal numerals are the counting numbers that initiate from the value of one (1) and ultimately go on in sequential order and are not ordinals, fractional, distributive, or restrictive numerals. They can be sub-classified into two types, namely.

- (a) Basic numerals
- (b) Compound numerals

4.2.1 Basic numerals

In Kokborok, the raw numbers from one to ten (1-10) are basic cardinal numerals. These basic natural numbers from one to ten are underived and monomorphemic, as shown in Table 1.

Table 1: Basic numeral roots in Kokborok

Value	Numerals	Gloss
1	<i>sa</i>	'one'
2	<i>nii</i>	'two'
3	<i>t^ham</i>	'three'
4	<i>birii</i>	'four'
5	<i>ba</i>	'five'
6	<i>dok</i>	'six'
7	<i>sini</i>	'seven'
8	<i>car</i>	'eight'
9	<i>cuku</i>	'nine'
10	<i>ci</i>	'ten'

4.1.1 Compound numerals

In addition to basic, cardinal compound numerals can also be formed employing compounding, i.e., a juxtaposition of two free numeral morphemes. Compound numerals are unlimited in number and productive, which can create higher values in Kokborok. These numerals are also sub-classified into three types, namely.

- (a) Compound numerals with the addition
- (b) Compound numerals with multiplication
- (c) Compound numerals with multiplication plus addition

4.1.1.1 Compound numerals with the addition

In this case, the numerals are formed by adding basic digits to the decimal number. So, the compounding numerals in Kokborok form by juxtaposing a single free numeral morpheme to the decimal number. In another sense, the

beginnings of the higher value from eleven to nineteen states by adding the lower value from one to nine. In simple terms, the decimal number ten is added with the basic cardinal numerals to create the higher value from eleven to nineteen, as exemplified below.

- (i) *ci-sa* 'eleven.'
[10+1=11]
- (ii) *ci-nii* 'twelve.'
[10+2=12]
- (iii) *ci-t^ham* 'thirteen.'
[10+3=13]
- (iv) *ci-birii* 'fourteen.'
[10+4=14]
- (v) *ci-ba* 'fifteen.'
[10+5=15]
- (vi) *ci-dok* 'sixteen.'
[10+6=16]
- (vii) *ci-sini* 'seventeen.'
[10+7=17]
- (viii) *ci-car* 'eighteen.'
[10+8=18]
- (ix) *ci-cuku* 'nineteen.'
[10+9=19]

4.1.1.2 Compound numerals with multiplication

Apart from addition, the numerals are also formed by the multiplication of basic numerals onto the decimal number. So, compounding is formed with multiplication by juxtaposing a single morpheme to the decimal number. The numbers twenty, thirty, forty, fifty, sixty, seventy, eighty, and ninety are the multiplicative compound numerals formed with the multiplication of basic digits from two to nine to the value of ten, as seen from the following examples given below in Kokborok.

- (x) *nii-ci* 'twenty.'
[2X10=20]
- (xi) *t^ham-ci* 'thirty.'
[3X10=30]
- (xii) *birii-ci* 'forty.'
[4X10=40]
- (xiii) *ba-ci* 'fifty.'
[5X10=50]
- (xiv) *dok-ci* 'sixty.'
[6X10=60]
- (xv) *sini-ci* 'seventy.'

[7X10=70]

- (xvi) *car-ci* 'eighty.'

[8X10=80]

- (xvii) *cuku-ci* 'ninety.'

[9X10=90]

4.1.1.3 Compound numerals with multiplication plus addition

In Kokborok, the compound numerals are formed by decade ten multiplied and then added with the basic cardinal numerals. The compound numerals from 21-29, 31-39, 41-49, 51-59, 61-69, 71-79, 81-89, and 91-99 are formed by the decimal 10 (ten) multiplied by the numerals from 2-9 numbers and then added with the basic digits from 1-9 respectively. The compound numerals with multiplication and addition are exemplified below in Kokborok.

- (xviii) *nii-ci-sa* 'twenty one.'

[2X10+1=21]

- (xix) *t^ham-ci-nii* 'thirty two.'

[3X10+2=32]

- (xx) *birii-ci-t^ham* 'forty three.'

[4X10+3=43]

- (xxi) *ba-ci-birii* 'fifty four.'

[5X10+4=54]

- (xxii) *dok-ci-ba* 'sixty five.'

[6X10+5=65]

- (xxiii) *sini-ci-dok* 'seventy six.'

[7X10+6=76]

- (xxiv) *car-ci-sini* 'eighty seven.'

[8X10+7=87]

- (xxv) *cuku-ci-ba* 'ninety five.'

[9X10+5=95]

- (xxvi) *cuku-ci-dok* 'ninety six.'

[9X10+6=96]

- (xxvii) *cuku-ci-sini* 'ninety seven.'

[9X10+7=97]

- (xxviii) *cuku-ci-car* 'ninety eight.'

[9X10+8=98]

- (xxix) *cuku-ci-cuku* 'ninety nine.'

[9X10+9=99]

4.2 Ordinal numerals

The usage of ordinal numerals are uncommon in Kokborok, and instead, it uses by taking loan either from

Bengali or English. Only one ordinal numeral do use for counting the value. It is a non-derivative numeral that takes no affixes to form a word. The example of an ordinal numeral is described below, along with Bengali and English loan words.

Table 2: Ordinal numerals in Kokborok

Sl. No.	Kokborok	Bengali	English	Gloss
1	<i>sikanj</i>	<i>prothom</i>	<i>first</i>	‘first’
2	—	<i>ditiyo</i>	<i>second</i>	‘second’
3	—	<i>tritiyo</i>	<i>third</i>	‘third’
4	—	<i>coturtho</i>	<i>fourth</i>	‘fourth’
5	—	<i>poncom</i>	<i>fifth</i>	‘fifth’

4.3 Multiplicative numerals

In Kokborok, the multiplicative numeral means the cardinal digits multiplied by a prefixal morpheme. The morpheme *wai-* ‘number of times’ prefixes the cardinal numerals to form the multiplicative numerals. In other words, the classifier *wai-* can be employed with any number of values, irrespective of higher or lower, to create the value of multiplicative numerals. The examples below show how multiplicative digits form in a language.

- (xxx) *wai-sa* ‘once.’
[CL-1=waisa]
- (xxxi) *wai-nii* ‘twice.’
[CL-2=wainii]
- (xxxii) *wai-t^ham* ‘thrice.’
[CL-3=wait^ham]
- (xxxiii) *wai-birii* ‘four times.’
[CL-4=waibirii]
- (xxxiv) *wai-ba* ‘five times.’
[CL-5=waiba]
- (xxxv) *wai-dok* ‘six times.’
[CL-6=waidok]
- (xxxvi) *wai-sini* ‘seven times.’
[CL-7=waisini]
- (xxxvii) *wai-car* ‘eight times.’
[CL-8=waicar]
- (xxxviii) *wai-cuku* ‘nine times.’
[CL-9=waicuku]
- (xxxix) *wai-ci* ‘ten times.’
[CL-10=waici]
- (xl) *wai-ci-sa* ‘eleven times.’

[CL-10-11=waicisa]

4.4 Fractional numerals

Fractional numerals are rational numbers, not cardinals, ordinals or distributive numerals in Kokborok. Fractional numerals are formed by prefixing the morpheme *k^hak-* to the basic cardinal numerals. Generally, the word *k^hak* means ‘separate/divide.’ So, in fractional numerals, the morpheme *k^hak-* indicates the meaning of ‘half/piece/quarter’ when attached to the cardinal numerals. Consider the following examples as described below.

- (xli) *k^hak-sa* ‘half.’
[CL-1=k^haksa]
- (xlii) *k^hak-nii* ‘two piece.’
[CL-2=k^haknii]
- (xliii) *k^hak-t^ham* ‘three piece.’
[CL-3=k^hakt^ham]
- (xliv) *k^hak-birii* ‘four piece.’
[CL-4=k^hakbirii]
- (xlv) *k^hak-ba* ‘five piece.’
[CL-5=k^hakba]

Sometimes, the classifier morpheme *k^hak-* is reduplicated to get the meaning of ‘quarter.’ It indicates the implication that one portion of the length or breadth does divide twice, which becomes four pieces, as shown in the following examples.

- (xlvi) *k^hak-sa-ni* *k^hak-sa* ‘quarter.’
[CL-1-GEN CL-1=k^hak-sa-ni *k^hak-sa*]

It also does notice in the language that the word *kosa* ‘half’ is used predominantly according to the context of its environment. It is used only while indicating about pathway or some eatable fruits like a banana which is of elongated and curved shape. Consider the following examples as shown below.

- (xlvii) *ko-sa* ‘half.’
[CL-1=kosa]

Some sentential examples are shown below in (xlviii) and (xlix).

- (xlviii) *aŋ* *lama* *ko-sa* *sok-k^ha*
i road CL-1 reach-PST
‘I reached half of the way’
- (xlix) *aŋ* *t^hailik* *ko-sa* *ca-k^ha*
i banana CL-1 eat-PST
‘I ate half of the banana.’

It is also worth mentioning that classifier *ko-* cannot be used with other cardinal numbers from two to a higher value. It is used only with the cardinal number *sa* ‘one.’ It becomes ungrammatical when employed with different numerals, as exemplified below.

- (l) *ko-nii* ‘2 half’[#]
[CL-2=konii]
(li) *aŋ t^hailik ko-nii ca-k^ha[#]*
i banana CL-1 eat-PST
‘I ate two half of the banana.’

4.5 Distributive numerals

In Kokborok, the cardinal numeral appears to be followed by the free morpheme *sik* ‘each’ to the corresponding cardinal numerals. The generic classifier *kai-* cannot be separated from prefixing the cardinal numerals in forming distributive numerals. In other words, the generic classifier *kai-* is obligatorily prefixed to the cardinal digits and then followed by the free morpheme *sik* ‘each’ to the corresponding numerals, as seen from the examples given below.

- (lii) *kai-sa-sik* ‘one each.’
[CL-1-each=kaisa sik]
(liii) *kai-nii-sik* ‘two each.’
[CL-2-each=kainii sik]
(liv) *kai-t^ham-sik* ‘three each.’
[CL-3-each=kait^ham sik]
(lv) *kai-birii-sik* ‘four each.’
[CL-4-each=kaibirii sik]
(lvi) *kai-ba-sik* ‘five each.’
[CL-5-each=kaiba sik]
(lvii) *kai-dok-sik* ‘six each.’
[CL-6-each=kaidok sik]
(lviii) *kai-sini-sik* ‘seven each.’
[CL-7-each=kaisini sik]
(lix) *kai-car-sik* ‘eight each.’
[CL-8-each=kaicar sik]
(lx) *kai-cuku-sik* ‘nine each.’
[CL-9-each=kaicuku sik]
(lxi) *kai-ci-sik* ‘ten each.’
[CL-10-each=kaici sik]

Some of the sentential examples are given below.

- (lxii) *betira kai-sa-sik nahar-di*
comb CL-1-each take-IMP

‘Take one comb each.’

- (lxiii) *betira kai-nii-sik nahar-di*
comb CL-2-each take-IMP

‘Take two combs each.’

- (lxiv) *betira kai-ba-sik nahar-di*
comb CL-5-each take-IMP

‘Take five combs each.’

It also noticed in the language that the multiple numbers of other classifiers are well attested for denoting the value of distributive numerals, as exemplified below.

- (lxv) *borok k^horok -sa sik*
person CL-1 each
‘One person each.’

[denoting human nouns]

- (lxvi) *bup^haŋ p^haŋ -sa sik*
tree CL-1 only

‘One tree each.’

[denoting plants and trees]

- (lxvii) *tok mak-nii sik*
bird CL-2 each

‘Two birds each.’

[denoting birds and animals]

- (lxviii) *mokol kol-sa sik*
eye CL-1 each

‘One eyes each.’

[denoting grains, eyes, seeds, etc.]

- (lxix) *yakuŋ koŋ-sa sik*
leg CL-1 each

‘One leg each.’

[denoting long objects]

- (lxx) *ri kaŋ-sa sik*
cloth CL-1 each

‘One cloth each.’

[denoting flat objects]

- (lxxi) *k^hitiŋ tiŋ-sa sik*
eye CL-1 each

‘One thread each.’

[denoting long, narrow/thin objects]

- (lxxii) *tii t^hop-sa sik*
water CL-1 each

‘One drops of water each.’

[denoting drops of liquids]

4.6 Restrictive numerals

Like distributive numerals, restrictive numerals are also formed by the free morpheme *simi* ‘only,’ followed by the corresponding cardinal numerals. Here also, the generic classifier *kai-* is obligatorily used, which is attached to the cardinal numerals and then the free morpheme *simi* ‘only’ is followed to the cardinal numerals to form the lexeme of restrictive digits. Consider the following examples as described below.

- (lxxiii) *kai-sa-simi* ‘only one.’
[CL-1-only=kaisa simi]
- (lxxiv) *kai-nii-simi* ‘only two.’
[CL-2-only=kainii simi]
- (lxxv) *kai-t^ham-simi* ‘only three.’
[CL-3-only=kait^ham simi]
- (lxxvi) *kai-birii-simi* ‘only four.’
[CL-4-only=kaibirii simi]
- (lxxvii) *kai-ba-simi* ‘only five.’
[CL-5-only=kaiba simi]
- (lxxviii) *kai-dok-simi* ‘only six.’
[CL-6-only=kaidok simi]
- (lxxix) *kai-sini-simi* ‘only seven.’
[CL-7-only=kaisini simi]
- (lxxx) *kai-car-simi* ‘only eight.’
[CL-8-only=kaicar simi]
- (lxxxii) *kai-cuku-simi* ‘only nine’
[CL-9-only=kaicuku simi]
- (lxxxiii) *kai-ci-simi* ‘only ten.’
[CL-10-only=kaici simi]

Apart from generic classifier *kai-*, multiple numbers of other classifiers are also employed to mean for restrictive numerals for denoting any objects that do use in the language, and they are shown below with examples as-

- (lxxxiii) *k^horok-sa-simi* ‘only one person.’
[CL-1-only=k^horoksa simi]
- (lxxxiv) *k^horok-nii-simi* ‘only two people.’
[CL-2-only=k^horoknii simi]
- (lxxxv) *p^haŋ-sa-simi* ‘only one tree.’
[CL-1-only=p^haŋsa simi]
- (lxxxvi) *p^haŋ-nii-simi* ‘only two trees.’
[CL-2-only=p^haŋnii simi]
- (lxxxvii) *mak-nii-simi* ‘only two animals.’
[CL-2-only=maknii simi]

Some of the sentential examples are given below.

- (lxxxviii) *borok k^horok-sa simi*
person CL-1 only
‘Only one person.’
[denoting human nouns]
- (lxxxix) *bup^haŋ p^haŋ-sa simi*
tree CL-1 only
‘Only one tree.’
[denoting plants & trees]
- (xc) *tok mak-nii simi*
bird CL-2 only
‘Only one bird.’
[denoting birds and animals]
- (xci) *mokol kol-sa simi*
eye CL-1 only
‘Only one eye.’
[denoting grains, eyes, seeds, etc.]
- (xcii) *yakuŋ koŋ-sa simi*
leg CL-1 only
‘Only one leg.’
[denoting long objects]
- (xciii) *ri kaŋ-sa simi*
cloth CL-1 only
‘Only one cloth.’
[denoting flat objects]
- (xciv) *k^hitiŋ tiŋ-sa simi*
eye CL-1 only
‘Only one thread.’
[denoting long, narrow/thin objects]
- (xcv) *tii t^hop-sa simi*
water CL-1 only
‘Only one drop of water.’
[denoting drops of liquids]

V. CONCLUSIONS

Kokborok belongs to the Bodo-Garo subgroup of the TB language family, spoken in the Northeastern state of Tripura, India. So, based on the analysis, the numerals in Kokborok can draw the following conclusions.

1. The numerals found are of a decimal type and purely absent of vigesimal.
2. Six types of numerals are found to be used in the language, (i) cardinals, (ii) ordinals, (iii) multiplicative, (iv) fractional, (v) distributive, and (vi) restrictive numerals.
3. The basic numerals are non-derivative and monomorphemic in the language.
4. The digits from one to ten (1-10) are found to be basic cardinal numerals.
5. Compound numerals are formed by juxtaposing one or more free numeral morphemes.
6. The compound cardinal numerals, the numbers from eleven to higher numerals, are derived from the basic cardinal numerals.
7. Syntactically, the numeral always follows the head noun in compound nouns.
8. The finding of ordinal numerals in language usage is only one; instead, the language makes it communicable using Bengali or English.
9. The morpheme *wai-* is found to be affixed with any number of digits irrespective of higher or lower value which is created for the value of multiplicative numerals.
10. Fractional numerals are found to be rational numbers and are formed by prefixing bound morphemes to the basic cardinal numerals. Sometimes the morphemes are also reduplicated to construct their respective meaning.
11. Both distributive and restrictive numerals are formed by following the cardinal numerals, and the cardinal numerals are found to be prefixed with the classifier for denoting different objects.

PST	Past tense marker
TB	Tibeto-Burman
TTAADC	Tripura Tribal Areas Autonomous District Council

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Abbreviations and Symbols

#	Ungrammatical
1	One
2	Two
3	Three
4	Four
5	Five
6	Six
7	Seven
8	Eight
9	Nine
10	Ten
CL	Classifier
GEN	Genitive case marker
IMP	Imperative marker