Research Article

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Numerals in Akebu

https://doi.org/10.1515/opli-2020-0107
received February 26, 2020; accepted April 10, 2020

Abstract: This article presents an overview of the numeral system in Akebu, a Kwa language of Togo. The Akebu numeral system is a decimal one and contains simple numerals from '1' to '9' and decimal bases for '10', '100', and '1,000'. The former have noun class agreement markers, while the latter do not. Only some noun classes are compatible with numerals, but among them there are both plural and singular classes.

Keywords: numerals, noun class, noun phrase, Akebu, Kwa

1 Introduction

This article presents a description of numerals in Akebu. Akebu (Kebu; ISO 639-3 keu) is a Kwa (Niger-Congo) language of the Kebu-Animere group.[1] It is spoken mainly in the prefecture of Akebu of Togo (West Africa) by ca. 70,000 people (Gblem-Poidi and Kantchoa 2012; Eberhard et al. 2019), and there definitely exist different dialect groups, yet the dialects require further research.

The language is underdescribed. At this time, the following literature on Akebu is available. Wolf (1907) published a brief grammar sketch. Some aspects of Akebu phonology and noun class system are briefly described and discussed in a historical perspective by Heine (1968: 70–3, 110, 126, 182–4). Djitovi (2003) made a preliminary description of the phonology. Storch and Koffi (2000) and Amoua (2011) describe the noun systems and noun classes. Adjeoda (2008) describes some elements of the morphosyntax. Koffi wrote a dissertation on the sociolinguistic issues of Akebu (1984) as well as a dictionary (1981) and proposed a description of the pronominal system (2010). M'boma (2012, 2014) developed an original writing system. A different writing system is proposed by Marthe Sossoukpe (2014). Jacques Sossoukpe wrote a dissertation on Akebu ethnolinguistics (2008) and published a paper on phonology (2017). Makeeva described the phonological system (2016) and the system of words expressing qualities (2018). Makeeva and Shluinsky described the noun class system (2018). Muraviev (2015, 2016) addressed some issues of syntax. Shavarina (2018) presented an account of the noun phrase.

The data for this study were collected during a number of field trips to the village of Djon and neighboring villages of Kotora and Djitrame in the prefecture of Akebu of Togo in 2012, 2013, 2016, and 2019. Examples acquired from texts are marked (txt), while the elicited examples are unmarked.

1 The Kebu-Animere group is as a part of a unity referred to as 'Ghana-Togo Mountain languages', or 'Togo Remnant languages'. Still the internal classification of the Kwa family in general, and in particular the genetic status of this unity is largely debatable (cf. Stewart (1989) vs Blench (2009)). That is why we limit ourselves only with the lowest taxon of Kebu-Animere and with the biggest one of Kwa.

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Table 1: Akebu noun classes: markers and examples

Class	Prefix	Suffix	Examples
ŊƱ	ø-	-yə̄	*fūʈí-yə́* 'bird'
PƏ	V̀-	-pə̄	*à-pɔ̄ŋ̄-pə̄* 'oil'
			ò-fūʈí-pə́ 'birds'
ƮƏ	ø-(voicing)	-ɖə̄	*gò-ɖə̄* 'liver'
WƏ	ø-	-wə̄	*náá-wə́* 'fire'
YƏ	V̀-	-yə̄	*à-kpɔ̀-yə̄* 'bag'
			à-náá-yə́ 'fires'
KƏ	ø-(voicing)	-kə̄	*gà-kə̄* 'meat'
	V̀-		*à-kāā-kə̄* 'hand'
	kə̀-		*kə̀-ɖōō-kə̄* 'feather'
KPƏ	wə̀-	-kpə̄	*wə̀-ɖàà-kpə̄* 'market'
			wə̀-ɖōō-kpə̄ 'feathers'
	ø-(voicing)		*gú-kpə́* 'room'

Akebu examples are presented in a phonological transcription; some phonemes have variants and allophones that we do not mark separately. Akebu has a rather typical Kwa phoneme inventory (distinguishing, in particular, ± ATR vowels *i* vs *ɪ* and *u* vs *ʊ*) and a tonal system of three-level tones. A number of prefixes and proclitics contain an underspecified vowel *V* and are subject to a regressive vowel harmony with the following rules: *V* ~ *e*/_*e*, *i*; *V* ~ *o*/_*o*, *u*; *V* ~ *ə*/_ *ə*, *ɨ*; *V* ~ *a*/_*a*, *ɛ*, *ɔ*, *ʊ*, *ɪ*.

Like other Kwa languages, Akebu is a subject–verb–object (SVO) language, and oblique constituents normally follow the direct object noun phrase. In a noun phrase, Akebu has Poss N X order; in other words, all noun phrase modifiers other than the possessor noun phrase follow the head noun, while the possessor noun phrase precedes it.

Akebu has a noun class system. Table 1 (reproduced from Makeeva and Shluinsky 2018: 5) introduces the list of the seven Akebu noun classes labeled by the form of the corresponding object pronouns. Noun classes are marked by prefixes and suffixes at the same time. In a number of classes, the prefix has no segment exponent, but in some of them it triggers voicing of the stem; for example, the stem for the 'liver' is *kò*, but its singular form of the class ƮƏ is *gò-ɖə̄*.

The ŊƱ, ƮƏ, WƏ, and KƏ classes can only refer to single objects, and the PƏ, YƏ, and KPƏ classes can either refer to single objects or contain plural forms corresponding to the singular noun classes. The following noun class number correlations are the most typical (although some other correlations are attested): ŊƱ (sg) ~ PƏ (pl) *fūʈí-yə́* 'bird' ~ *ò-fūʈí-pə́* 'birds', ƮƏ (sg) ~ YƏ (pl) *gò-ɖə̄* 'liver' ~ *ò-kò-yə̄* 'livers', WƏ (sg) ~ YƏ (pl) *náá-wə́* 'fire' ~ *à-náá-yə́* 'fires', KƏ (sg) ~ KPƏ (pl) *à-kāā-kə̄* 'hand' ~ *wə̀-kāā-kpə̄* 'hands', KPƏ (sg) ~ YƏ (pl) *gú-kpə́* 'room' ~ *ò-kú-yə́* 'rooms'.

Numeral systems in the languages of the world, including both numerical structure and morphosyntactic features, have been a subject of a number of cross-linguistic studies, in particular by Greenberg (1978), Corbett (1978), Gvozdanović (1999), and Comrie (2013). Yet, there still remains a great deal of incomplete comparative and descriptive work for the languages of sub-Saharan Africa,[2] and this article contributes to the understanding of the numeral system structure and function in these languages. Moreover, Akebu data fit into the existing cross-linguistic generalizations on numerals.

Simple lists of Akebu numerals are provided by Wolf (1907: 795–6), Amoua (2011: 68–72), Marthe Sossoukpe (2014: 56–7), and Shavarina (2018), but the numeral system has not yet been the subject of a detailed description.

2 Of course, there are exceptions, and one can mention a recent comparative study of Mande numeral systems (Perekhvalskaya and Vydrin 2019) and a comparative study of a number of Bantu numeral systems (Ryabova 2014). Pozdniakov (2018) presents a very detailed historical study of Niger-Congo numerals and a reconstruction of Proto-Niger-Congo numeral stems but does not deal with synchronic morphosyntax of numerals and with complex numerals.

The rest of the article is structured as follows. Section 2 introduces the general features of Akebu numerals. Section 3 presents simple numerals referring to single digits, while Section 4 is devoted to simple decimal bases. Sections 5 and 6 speak of complex numerals built by multiplication and of compound numerals built by addition. Section 7 focuses on ordinal numerals. Section 8 draws the conclusion.

2 General features of Akebu numerals

Akebu numerals are based on the decimal numerical system. There are simple numerals from '1' to '9' and for '10', '100', and '1,000'. Other numerals use the three 10^n numerals as bases for multiplication to numbers expressed by the simple numerals; the latter ones also express numerical values added by addition. Ordinal numerals are derived with a suffix from cardinal numerals; henceforth, we use the term 'numerals' for cardinal numerals.

The primary syntactic function of numerals is to modify a noun phrase. Syntactically, all numerals follow the head noun. In the noun phrase, numerals follow determiners, as shown in (1–2), but precede relative clauses (2):

(1) [*ò-kòsòpíí-pə̄* *ʈé* ***è-yí***] *pà-kè-kpí*
PƏ-lad-PƏ INDF PƏ-two PƏ-PST-exist$_{FCT}$
'There were two lads.' (txt)

(2) [*à-kɔ̀láátíá-mʊ̄ɛ̄ɛ̄ʈì-pə̄*[3] *wé* ***à-tā*** [*nē-ʈī*]]
PƏ-banana-ripe-PƏ DEM PƏ-three ŊU.JNT.PFV-eat
'these three ripe bananas that he has eaten'

Another syntactic function attested for Akebu numerals is one of a copula complement, as shown in (3–4):

(3) *pə̄* *lá* *kpùlò* *wé* *pà-kà-lə̀* *tə̀* *wá* *pà-kà-lə̀* ***à-kʊ̀ʈāŋ̀***
PƏ.O POSS all DEM PƏ-PST-COP$_{FCT}$ ten and PƏ-PST-COP$_{FCT}$ PƏ-six
'All of them – maybe they are ten, maybe they are six.' (txt)

(4) *tù-wə̄* *wə̀-lə̀* ***yí***
thing-WƏ WƏ.COP$_{FCT}$ WƏ.two
'There are two things (lit. The things are two).'

As shown in (1–2) and (3–4), when used both as modifiers of noun phrases and as copula complements, Akebu numerals have a morphological prefixal slot of agreement by noun class controlled by the head noun and by the subject correspondingly.

Numeral stems may be substantivized and get prefixal and suffixal noun class markers in the same way as nouns do, see (5).

(5) *pə̄* *lá* ***à-tā-pə̄*** *wé* *pà-kè-ʈíí* *ò-púétáá-pá*
PƏ.O POSS PƏ-three-PƏ DEM PƏ-PST-COP$_{FCT}$ PƏ-friend-PƏ
'These three were friends.' (txt)

3 In Akebu, stems of the words expressing qualities are incorporated between the stem of the noun and the noun class suffix; see Makeeva (2018) for more details.

3 Simple numerals ‘1’–‘9’

Table 2 presents Akebu simple numerals from ‘1’ to ‘9’. In the structure of the numeral *fàŋ̀cēŋ̄cēŋ̄* ‘9’, one can see the part that has a transparent relation to the numeral *cēŋ̄cēŋ̄* ‘1’.[4] According to Pozdniakov (2018: 120–38, 256–81), only the forms for ‘2’ to ‘5’ (and maybe ‘8’) have parallels throughout Niger-Congo (and can therefore be assumed to be inherited from the macrofamily), and only the forms for ‘1’ to ‘6’ can be reconstructed up to the Kwa (or even to the Ka-Togo) level. Still, syncronically all these simple numerals are underived, since none of them can be analyzed as a result of a regular morphological or morphosyntactic process.

Simple numerals of this group agree with the head noun in noun class and take agreement prefixes, although in many cases the prefixes are zero. Noun class agreement prefixes are presented in Table 3. Table 3 also shows that the numeral *cēŋ̄cēŋ̄* ‘1’, on the one hand, and the numerals from ‘2’ to ‘9’, on the other hand, have different forms of the noun class agreement prefix.

The numeral *cēŋ̄cēŋ̄* ‘1’ is compatible with nouns of any noun class, since all Akebu noun classes refer to singular objects (see Makeeva and Shluinsky 2018: 9–12). In (6a–g), examples of all the agreement forms are presented. With the ƬƏ class, the agreement prefix is nonsegmental, since in the absence of any segmental material it triggers an alternation of a voiceless initial consonant with a corresponding voiced one, as shown in (6c):

(6) a. *píí-yə́* *cēŋ̄cēŋ̄*
child-ŊU ŊU.one
‘one child’

b. *à-pɔ̄ŋ̄-pə̄* *cēŋ̄cēŋ̄*
PƏ-oil-PƏ PƏ.one
‘one (sort of) oil’

c. *záá-ƭə́* *ɟēŋ̄cēŋ̄*
chair-ƬƏ ƬƏ.one
‘one chair’

d. *tù-wə̄* *cēŋ̄cēŋ̄*
thing-WƏ WƏ.one
‘one thing’

e. *à-kpàƭàpàŋ̀-yə̄* *cēŋ̄cēŋ̄*
YƏ-trousers-YƏ YƏ.one
‘one (pair of) trousers’

f. *à-tɛ́ɛ́-ká* *kà-cēŋ̄cēŋ̄*
KƏ-field-KƏ KƏ-one
‘one field’

g. *wə̀-ƭàà-kpə̄* *wə-cēŋ̄cēŋ̄*
WƏ-market-WƏ WƏ-one
‘one market’

Apart from the unique noun class compatibility, the lexeme *cēŋ̄cēŋ̄* ‘1’ has further distinct features in contrast to other simple numerals ‘2’–‘9’.

First, a different lexical entry *ƭēŋ̀* ~ *ƭēyə̀* ‘one’ is used for counting, while with other numerical values the same words are used both as noun phrase numerals and for counting, cf. a naturalistic example (7):

(7) *ā-ɲùŋ̀* *ƭèŋ̀,* *yí,* *tā*
2SG-see one two three
‘This means: one, two, three.’ (txt)

Table 2: Akebu simple numerals from ‘1’ to ‘9’

‘1’	*cēŋ̄cēŋ̄*	‘6’	*kòƭāŋ̀*
‘2’	*yí*	‘7’	*pīƭìmàtā*
‘3’	*tā*	‘8’	*nɛ̀ŋ̀*
‘4’	*nìàà*	‘9’	*fàŋ̀cēŋ̄cēŋ̄*
‘5’	*tōò*		

4 Therefore, the *fàŋ̀* part can be assumed to have a meaning of subtraction. Still no corresponding lexical data are attested so far neither in our data nor in the dictionary (Koffi 1981). As an anonymous reviewer pointed out, Snider (1989) provides data on some lexical entries of Guang languages that can be related to this morpheme, especially *paŋ* ‘lose’ from Chumburung (Snider 1989: 71). But still there is no reliable etymology so far, especially directly based on Akebu data.

Table 3: Noun class agreement prefixes of Akebu simple numerals from '1' to '9'

Noun class	Agreement markers for '1'	Agreement markers for '2'–'9'
ŊÙ	ø-	*
PƏ	ø-	V̀-
ƮƏ	ø-(voicing the initial consonant)	*
WƏ	ø-	ø-
YƏ	ø-	V̀-
KƏ	kə̀-	*
KPƏ	wə̀-	wə̀-

Second, *cēŋcēŋ* '1' has a number of secondary quantifying meanings and related morphosyntactic options.

With the meaning 'the only, unique' *cēŋcēŋ* is incorporated between the noun stem and the noun class suffix; this is a standard process for Akebu adjectives (see example (2) and Makeeva 2018), but it is not possible for other numerals. In (8) a contrast between the numerical meaning '1' when *cēŋcēŋ* follows the head noun (8a, c) and the quantifying meaning 'the only, unique' when it is incorporated (8b, d) is presented. (9) shows a real example of such use:

(8) a. *tù-wə̄* *cēŋcēŋ* b. *tù-cēŋcēŋ-wə̄*
thing-WƏ WƏ.one thing-one-WƏ
'one thing' 'the only thing'
c. *záá-ƭə́* *ɟēŋcēŋ* d. *záá-cēŋcēŋ-ƭə̄*
chair-ƮƏ ƮƏ.one chair-one-ƮƏ
'one chair' 'the only chair'

(9) *wə̀* *nèé* *píí-cēŋcēŋ-yə̄* *pə̀-lə̄-mə̀* *wə̀…*
and ŊÙ.POSS child-one-YƏ PƏ-3.PFV-bear PRT
'And her only child that they have born…' (txt)

With the meaning 'only' *cēŋcēŋ* follows the head noun, similarly as with the meaning 'one' but takes no agreement marking. (10) presents the contrast between the numerical meaning '1' when *cēŋcēŋ* takes the agreement (10a, c) and the quantifying meaning 'only' when it takes no agreement marking (10b, d):

(10) a. *gú-kpə́* *wə̀-cēŋcēŋ* b. *gú-kpə́* *cēŋcēŋ*
room-KPƏ KPƏ.one room-KPƏ one
'one room' 'only the room/household (not all the village)'
c. *zú-ƭə́* *ɟēŋcēŋ* d. *zú-ƭə́* *cēŋcēŋ*
yams-ƮƏ ƮƏ.one chair-ƮƏ one
'one yams' 'only yams'

Finally, *cēŋcēŋ* can be used with personal pronouns with the meaning 'only, alone'. The entire construction functions as a copula complement (11a) or a floating quantifier (11b):

(11) a. *kòɟó* *Ø-lə̄* *ŋʊ̀* *cēŋcēŋ*
Kodjo ŊÙ-COP_{FCT} ŊÙ.INDP one
'Kodjo is alone.'
b. *kòɟó* *lə̄-pə̄* *ŋʊ̀* *cēŋcēŋ*
Kodjo 3.PFV-come ŊÙ.INDP one
'Kodjo has come alone.'

Numerals from ‘2’ to ‘9’ are compatible only with the PƏ, WƏ, YƏ, and KPƏ noun classes; the ungrammatical combinations are marked in Table 3 with an asterisk. Interestingly, this list is not a list of Akebu plural noun classes. WƏ is a singular noun class that only refers to single objects. The KPƏ class is ambinumeral and can refer to both single and plural objects. The PƏ and YƏ classes are mainly plural but also contain nouns referring to noncount entities and names of paired objects. With number correlations in which the singular class is not compatible with numerals from ‘2’ to ‘9’, only the plural class can be used, as in the pairs (12a–b), (12c–d), and (12e–f) with the numeral *yí* ‘two’. If the singular class allows the use of a numeral from ‘2’ to ‘9’, it normally is used like in (12g) and (12i), although our consultants only consider grammatical the examples in which the plural class is used, such as (12h) and (12j). In the real data from texts, only examples with singular classes WƏ and KPƏ are attested, such as (13) where the singular KPƏ class form *ɲūŋ-kpə̄* of the noun stem *ɲūŋ* ‘mouth, ball of fufu’ is used, not the plural YƏ class form *ò-ɲūŋ-yə̄*. In naturalistic examples with nouns that take singular classes Ŋʊ, ƮƏ, or KƏ, the corresponding plural class forms are used, as expected, as in (14) in which the plural class YƏ form *ò-ʈū-yə̄* of the noun stem *ʈū* ‘stone’ is employed, the singular form being *ɖū-ʈə̄*.

(12)	a.	**píí-yə́*	*yí*	b.	*è-píí-pə́*	*è-yí*
		child-Ŋʊ	two		PƏ-child-PƏ	PƏ-two
		exp. ‘two children’			‘two children’	
	c.	**ɖū-ʈə̄*	*yí*	d.	*ò-ʈū-yə̄*	*è-yí*
		stone-ƮƏ	two		YƏ-stone-YƏ	YƏ-two
		exp. ‘two stones’			‘two stones’	
	e.	**gúú-kə́*	*yí*	f.	*wə̀-kúú-kpə́*	*wə̀-yí*
		spoon-KƏ	two		KPƏ-spoon-KPƏ	KPƏ-two
		exp. ‘two spoons’			‘two spoons’	
	g.	*tù-wə̄*	*yí*	h.	OK*ò-tù-yə̄*	*è-yí*
		thing-WƏ	WƏ.two		YƏthing-YƏ	YƏ-two
		‘two things’			‘two things’	
	i.	*wə̀-ʈàà-kpə̄*	*wə̀-yí*	j.	OK*à-ʈàà-yə̄*	*è-yí*
		KPƏ-market-KPƏ	KPƏ-two		YƏ-market-YƏ	YƏ-two
		‘two markets’			‘two markets’	
(13)	*kə́*	*nā-ɲɛ́ɛ̀*	***ɲūŋ-kpə̄***	***wə̀**-yí*,	***wə̀**-tā*	*wé*...
	when	Ŋʊ.JNT.PFV-take_out	mouth-KPƏ	KPƏ-two	KPƏ-three	DEM
	‘When he took two ot three balls (of fufu)...’ (txt)					
(14)	*wə̀*	*pə̀-tɨ́nɨ́*	***ò-ʈū-yə̄***	***è**-yí*		
	and	PƏ-install$_{FCT}$	YƏ-stone-YƏ	YƏ-two		
	‘And they installed two stones.’ (txt)					

In (15), we provide an additional example of the possible noun class forms of another numeral, *kʊ̀ʈāŋ̀* ‘six’.

(15)	a.	*è-píí-pə́*	*à-kʊ̀ʈāŋ̀*	b.	*tù-wə̄*	*kʊ̀ʈāŋ̀*
		PƏ-child-PƏ	PƏ-six		thing-WƏ	WƏ.six
		‘six children’			‘six things’	
	c.	*à-sáá-yə́*	*à-kʊ̀ʈāŋ̀*	d.	*gú-kpə́*	*wə̀-kʊ̀ʈāŋ̀*
		YƏ-chair-YƏ	YƏ-six		room-KPƏ	KPƏ-six
		‘six chairs’			‘six rooms’	

The fact that either the plural form or the singular form of a noun can be used in a language with cardinal numerals is well-known crosslinguistically. Examples of languages in which the choice of number depends on a particular group of numerals are also well attested, see e.g., Corbett (2000: 211–3) for both statements; it is more surprising that the split is driven by particular noun classes. For Niger-Congo noun class systems, it is typical that singular noun classes are used and agree with ‘1’ and plural noun classes

are used and agree with other numerals. In particular, this is the case of almost all other well-documented Ghana-Togo Mountain languages with prominent noun class systems, such as Logba (Dorvlo 2008: 80–5), Avatime (Schuh 1995; van Putten 2014: 38–40), Nyangbo (Essegbey 2009), Lelemi (Allan 1973: 181–6), and Tafi (Bobuafor 2013: 112–6).[5] In this context, the feature of using singular noun class forms with numerals attested in Akebu is different and therefore noteworthy. Still, Akebu is not a unique Niger-Congo language in this respect: for example, a noun class pair in which the singular class is used with numerals starting from '2' and triggers agreement is attested in a Bantoid language Ejagham (Watters 1980).

4 Simple numerals '10', '100', '1,000'

Apart from the simple numerals from '1' to '9', Akebu has three more simple numerals: *tə̀* '10', *tùùʈù* '100', and *làfāā* '1,000'. These three numerals have the same pattern of compatibility with noun classes as the ones from '2' to '9' and are only compatible with noun classes PƏ, WƏ, YƏ, and KPƏ. Again, within the number correlations in which the singular class is not compatible with the numerals, only the plural class can be used, as in pairs (16b, d, f) and (17b, d, f). If the singular class permits the use of a numeral, normally it is used, as in (16g, i) and (17g, i), but our consultants consider grammatical the examples in which the plural class is used, see (16h, j) and (17h, j).

In contrast to simple numerals from '1' to '9', numerals '10', '100', and '1,000' do not take agreement markers, as seen from (16) and (17). With the numeral *tə̀* '10' speakers allow the agreement form with the KPƏ class (see 16f, i), but not with other classes, and only as a grammaticality judgment of a form constructed by the linguist. With the numerals *tùùʈù* '100' and *làfāā* '1,000', even this option is not possible.

(16)
a. **píí-yə́* *tə̀*
child-Ŋʊ ten
exp. 'ten children'

b. *è-píí-pə́* *tə̀*
PƏ-child-PƏ ten
'ten children'

c. **ɖū-ʈə̄* *tə̀*
stone-ƮƏ ten
exp. 'ten stones'

d. *ò-ʈū-yə̄* *tə̀*
YƏ-stone-YƏ ten
'ten stones'

e. **kə̀-fʊ̄ɛ̄ɛ̄-kə̄* *tə̀*
KƏ-paper-KƏ ten
exp. 'ten books'

f. *wə̀-fʊ̄ɛ̄ɛ̄-kpə̄* *tə̀* ~ OK*wə̀-tə̀*
KPƏ-paper-KPƏ ten ~ KPƏ-ten
'ten books'

g. *tù-wə̄* *tə̀*
thing-WƏ ten
'ten things'

h. OK*ò-tù-yə̄* *tə̀*
YƏ-thing-YƏ ten
'ten things'

i. *gú-kpə́* *tə̀* ~ OK*wə̀-tə̀*
room-KPƏ ten ~ KPƏ-ten
'ten rooms'

j. OK*ò-kú-yə̄* *tə̀*
room-YƏ ten
'ten rooms'

(17)
a. **píí-yə́* *tùùʈù*
child-Ŋʊ hundred
exp. 'hundred children'

b. *è-píí-pə́* *tùùʈù*
PƏ-child-PƏ hundred
'hundred children'

c. **ɖū-ʈə̄* *tùùʈù*
stone-ƮƏ hundred
exp. 'hundred stones'

d. *ò-ʈū-yə̄* *tùùʈù*
YƏ-stone-YƏ hundred
'hundred stones'

e. **kə̀-fʊ̄ɛ̄ɛ̄-kə̄* *tùùʈù*
KƏ-paper-KƏ hundred
exp. 'hundred books'

f. *wə̀-fʊ̄ɛ̄ɛ̄-kpə̄* *tùùʈù*
KPƏ-paper-KPƏ hundred
'hundred books'

5 In Sekpele, plural noun classes are used with cardinal numerals starting from '2', as well, but such numerals have no class agreement and only contain 'frozen' noun class markers; see Delalorm (2016: 130–4).

g. *tù-wə* *tùùʈù*
thing-WƏ hundred
'hundred things'

h. [OK]*ò-tù-yə* *tùùʈù*
YƏ-thing-YƏ hundred
'hundred things'

i. *gú-kpə́* *tùùʈù*
room-KPƏ hundred
'hundred rooms'

j. [OK]*ò-kú-yə* *tùùʈù*
YƏ-room-YƏ hundred
'hundred rooms'

5 Complex numerals '20'–'90', '100'–'900', and '1,000'+

Complex numerals are formed by a juxtaposition of a decimal base, namely, *tə̀* '10', *tùùʈù* '100', and *làfāā* '1,000' and a multiplicand, expressed by a simple numeral from '2' to '10', or, for the numerical meanings starting from '20,000', by a complex numeral. The list of complex numerals from '20' to '9,000' and examples of complex numerals for tens of thousands are presented in Table 4. The numeral *tìyí* '20' is a special case, since it is a transparent result of an irregular assimilation of the regular complex numeral structure **tə̀ yí* that can be retraced by modern Akebu speakers but is not used anymore. For meanings '100' and '1,000' complex numerals are optional, since the bases, as shown in 4, may be used on their own; *tùùʈù ~ tùùʈù cēŋcēŋ* '100' and, correspondingly, *làfāā ~ làfāā cēŋcēŋ* '1,000' are free variants, the simple one seeming to be the default option.

The complex numeral *làfāā léé* '1,000,000' is formed by a juxtaposition of the numeral *làfāā* '1,000' with a special marker *léé* for which we have no etymology so far. Numerals for tens of millions and, presumably, higher numerical values can be built by a juxtaposition of the complex base *làfāā léé* '1,000,000' with a multiplicand, for example, *làfāā léé tā* '3,000,000'.

Complex numerals discussed in this section have no agreement markers; see (18) with examples of compatible noun classes:

(18) a. *è-píí-pə́* *tə̀* *tā*
PƏ-child-PƏ ten three
'thirty children'

b. *tù-wə* *tə̀* *tā*
thing-WƏ ten three
'thirty things'

c. *ò-ʈū-yə* *tə̀* *tā*
YƏ-stone-YƏ ten three
'thirty stones'

d. *gú-kpə́* *tə̀* *tā*
room-KPƏ ten three
'thirty rooms'

Table 4: Akebu complex numerals

		'100'	*tùùʈù cēŋcēŋ*	'1,000'	*làfāā cēŋcēŋ*
'20'	*tìyí*	'200'	*tùùʈù yí*	'2,000'	*làfāā yí*
'30'	*tə̀ tā*	'300'	*tùùʈù tā*	'3,000'	*làfāā tā*
'40'	*tə̀ nìə̀ə̀*	'400'	*tùùʈù nìə̀ə̀*	'4,000'	*làfāā nìə̀ə̀*
'50'	*tə̀ tōɔ̀*	'500'	*tùùʈù tōɔ̀*	'5,000'	*làfāā tōɔ̀*
'60'	*tə̀ kɔ̀ʈāŋ̀*	'600'	*tùùʈù kɔ̀ʈāŋ̀*	'6,000'	*làfāā kɔ̀ʈāŋ̀*
'70'	*tə̀ pīʈìmàtā*	'700'	*tùùʈù pīʈìmàtā*	'7,000'	*làfāā pīʈìmàtā*
'80'	*tə̀ nɛ̀ŋ̀*	'800'	*tùùʈù nɛ̀ŋ̀*	'8,000'	*làfāā nɛ̀ŋ̀*
'90'	*tə̀ fàŋ̀cēŋcēŋ*	'900'	*tùùʈù fàŋ̀cēŋcēŋ*	'9,000'	*làfāā fàŋ̀cēŋcēŋ*
				'10,000'	*làfāā tə̀*
				'20,000'	*làfāā tìyí*
				'30,000'	*làfāā tə̀ tā*
				'100,000'	*làfāā tùùʈù*

6 Compound numerals

Compound numerals are formed with the conjunction *mə* 'and' that combines the positions of the decimal numerical system that go in decreasing order.[6] A compound numeral can itself be a multiplicand in a complex numeral. In (19a and b), two examples of such structures are presented; they illustrate the difference between multiplication expressed by plain juxtaposition and addition expressed by *mə*. If a compound numeral lacks one or more position, and the higher position has a filled multiplicand, *mə* is omitted, as in (19c):[7]

(19) a. *làfāā tə̀ tā mə̄ yí*
thousand ten three and two
'thirty two thousand, 32,000'

b. *làfāā mə̄ tə̀ tā mə̄ yí*
thousand and ten three and two
'one thousand thirty two, 1,032'

c. *làfāā tə̀ tā yí*
thousand ten three two
'thirty thousand and two, 30,002'

If a compound numeral contains a single digit that is expressed by a simple numeral from '1' to '9', this simple numeral takes a noun class agreement marker. With simple numerals from '2' to '9', the agreement pattern is the same as in their independent use and directly follows the noun class of the head noun, the agreement markers being the ones presented in Table 3. (20)–(22) contain illustrations of this pattern:

(20) *è-píí-pə́*
PƏ-child-PƏ
tə̀
ten
mə̄
and
***è**-yí*
PƏ-two
'twelve children'

(21) *è-píí-pə́*
PƏ-child-PƏ
tùùʈù
hundred
nìə̀ə̀
four
mə̄
and
tə̀
ten
tā
three
mə̄
and
***à**-tʊ̄ʊ̀*
PƏ-five
'four hundred thirty five children'

(22) *wə̀-fʊ̄ɛ̄ɛ̄-kpə̄*
KPƏ-paper-KPƏ
làfāā
thousand
mə̄
and
tùùʈù
hundred
tʊ̄ʊ̀
five
mə̄
and
tə̀
ten
nìə̀ə̀
four
mə̄
and
***wə̀**-yí*
KPƏ-two
'one thousand five hundred fourty two books'

With the numeral '1' noun class agreement also follows the pattern of the head noun but takes its own agreement markers from Table 3.[8] This means that an overt agreement marker is present only with the KPƏ noun class, as in (23a), but with other noun classes compatible with numerals higher than '1', namely, PƏ, WƏ, and YƏ, there is no overt agreement marker, as in (23b). Neither agreement by the corresponding singular class (24b) nor using the singular noun class with the head nouns (24c) is possible, if the plural class is used with numerals higher than '1' (see 3 for the discussion of the choice of noun class):

(23) a. *gú-kpə́*
room-KPƏ
tìyí
twenty
mə̄
and
***wə̀**-cēŋcēŋ*
KPƏ-one
'twenty one room'

b. *ò-tù-yə̄*
YƏ-thing-YƏ
tìyí
twenty
mə̄
and
cēŋcēŋ
YƏ.one
'twenty one thing'

(24) a. *ò-ʈū-yə̄*
YƏ-stone-YƏ
tìyí
twenty
mə̄
and
cēŋcēŋ
YƏ.one
'twenty one stone'

6 The same conjunction is used as a noun phrase coordination marker; cf. *kòɲó mə̄ kòfí* 'Kodjo and Kofi'.
7 Still, such structures are not widely attested and are even disputable among the speakers themselves.
8 The pattern of numeral '1' in compound numerals may be different; cf. a survey of European languages (Stolz 2002).

b. *ò-ʈū-yə̄ tìyí mə̄ ɟēŋcēŋ
YƏ-stone-YƏ twenty and ƮƏ.one
exp. ‘twenty one stone’
c. *ɖū-ʈə̄ tìyí mə̄ ɟēŋcēŋ
stone-ƮƏ twenty and ƮƏ.one
exp. ‘twenty one stone’

Aside from the general model of compound numerals presented above in this section, an alternative one is attested in our elicited data. The single digit may be expressed not only by a corresponding numeral from ‘1’ to ‘9’ with the corresponding agreement marker (25a) but also by a substantivized ordinal numeral (see 7). In this case, both plural (25b) and singular (25c) noun class forms may be used, cf. the plural form *ò-ʈū-yə̄* ‘stones’ with the singular form *ɖū-ʈə̄* ‘stone’.

(25) a. *ò-ʈū-yə̄ tə̀ mə̄ à-tā
YƏ-stone-YƏ ten and YƏ-three
‘thirteen stones’
b. *ò-ʈū-yə̄ tə̀ mə̄ à-tā-tə́-yə́*
YƏ-stone-YƏ ten and YƏ-three-ORD-YƏ
‘thirteen stones (lit. the stones ten and the third ones)’
c. *ò-ʈū-yə̄ tə̀ mə̄ dā-tə́-ʈə́*
YƏ-stone-YƏ ten and ƮƏ.three-ORD-ƮƏ
‘thirteen stones (lit. the stones ten and the third one)’

7 Ordinal numerals

The ordinal meaning ‘first’ is expressed by a suppletive lexeme *sɨ̄sə̄ŋ* (26) that is a reduplicated deverbal noun of the verb *sə̄ŋ* ‘begin’:

(26) *ə̀-kpə̀ə̀-kə̄ lə́ tɨ̄ŋtə̀ə̀-sɨ̄sə̄ŋ-wə̄*
KƏ-Akebu-KƏ POSS village-first-WƏ
‘the first Akebu village’ (txt)

Other ordinal numerals are formed from the corresponding cardinal numerals by the suffix *-tə́* (27). If a cardinal numeral is complex or compound, the suffix is added to its last part, as in (27c–g):

(27) a. *yí-tə́* b. *tə̀-tə́* c. *tə̀-mə̄-yí-tə́* d. *tìyí-tə́*
two-ORD ten-ORD ten-and-two-ORD twenty-ORD
‘second’ ‘tenth’ ‘twelfth’ ‘twentieth’
e. *tə̀-tā-tə́* f. *tə̀-tā-mə̄-cēŋcēŋ-tə́* g. *tùùʈù-mə̄-tə̀-tə́*
ten-three-ORD ten-three-and-one-ORD hundred-and-ten-ORD
‘thirtieth’ ‘thirty firsrt’ ‘hundred and tenth’

If an ordinal numeral is derived from a compound cardinal numeral that contains a single digit ‘1’, the stem *cēŋcēŋ* is used, not the suppletive stem *sɨ̄sə̄ŋ*. This stem takes an agreement marker, as in (28a), (29a), while with other single digits there is no agreement, see (29c):

(28) a. *gú-tə̀-mə̄-**wə̀**-cēŋcēŋ-tə́-kpə́* b. **gú-tə̀-mə̄-cēŋcēŋ-tə́-kpə́*
room-ten-and-KPƏ-one-ORD-KPƏ room-ten-and-one-ORD-KPƏ
‘eleventh room’

(29) a. *záá-tə̀-mə̄-ɲɛ̄ŋcɛ̄ŋ-tə́-ʈə́*
chair-ten-and-ʈə.one-ORD-ʈə
'eleventh chair'

b. **záá-tə̀-mə̄-cɛ̄ŋcɛ̄ŋ-tə́-ʈə́*
chair-ten-and-one-ORD-ʈə

c. *záá-tə̀-mə̄-tā-tə́-ʈə́*
chair-ten-and-three-ORD-ʈə
'thirteenth chair'

d. **záá-tə̀-mə̄-**dā**-tə́-ʈə́*
chair-ten-and-ʈə.three-ORD-ʈə

Morphosyntactic features of ordinal numerals are close to those of adjectives (see Makeeva 2018 for details). Like Akebu adjectives, in their attributive use Akebu ordinal numerals are incorporated into the morphological structure of the head noun after the nominal stem before the noun class suffix, as in (30) or (28) and (29). Another possible structure of Akebu ordinal numerals are substantivized forms with prefixal and suffixal noun class marking, as in (31), which also follows the adjectival pattern. Still, in contrast to Akebu adjectives, Akebu ordinal numerals cannot be used as copula complements, see ungrammatical structure in (32b):

(30) *pə̄* *lə́* *púétáá-**tā-tə́**-yə́* *wé*
PƏ.O POSS friend-three-ORD-Ŋʊ DEM
'this third friend of theirs' (txt)

(31) *wə́* ***yí-tə́-yə́*** *wə́* *ŋ̀-mənɨ̄* *nàá* *nɛ́ŋ́* *è-píí-pə́*
and two-ORD-Ŋʊ FOC Ŋʊ.JNT-bear$_{FCT}$ Ŋʊ.POSS own PƏ-child-PƏ
'And the second one gave birth to her own children.' (txt)

(32) a. *píí-yí-tə́-yə́*
child-two-ORD-Ŋʊ
'second child'

b. **píí-yə́* *sā* *Ø-lə̀* *yí-tə́*
child-Ŋʊ DEM Ŋʊ-COP$_{FCT}$ two-ORD
exp. 'This child is the second one.'

8 Conclusion

An overview of the Akebu numeral system is presented in this article. Akebu numerals are based on the decimal numerical system and follow the head noun in the linear order of the noun phrase. The numeral '1' is compatible with any noun class, since all Akebu noun classes can refer to single objects. Other numerals are possible only with four noun classes, some of them being singular, some of them being plural; if for a given noun both its singular and plural class can go with numerals, the singular class is normally used.

There are simple numerals from '1' to '9' that have noun class agreement prefixes and simple numerals for '10', '100', and '1,000' that have no inflection. Complex numerals are formed from decimal bases by multiplication, the multiplicand being expressed by a postposed simple numeral. In compound numerals, digits are joined by a conjunction and go in descending order; the single digit from '1' to '9' gets its agreement marking.

Ordinal numerals mostly exhibit an adjective-like syntactic behavior, and, with the exception of the lexeme 'first', are built from cardinal numerals with a special marker.

Abbreviations

Ŋʊ, PƏ, ʈə, WƏ, YƏ, KƏ, KPƏ	noun class or noun class agreement markers of corresponding classes
2SG	2nd person singular
COP	copula
DEM	demonstrative
FCT	factative

FOC	focus marker
INDF	indefinite
INDP	independent pronoun
JNT	conjoint verbal agreement marker
O	object pronoun
ORD	ordinal numeral marker
PFV	perfective
POSS	possessive marker or possessive pronoun
PRT	particle
PST	past

Acknowledgments: The research was conducted in terms of the project supported by the Russian Science Foundation, Grant No. 17-78-20071, fulfilled in the Institute of Linguistics, Russian Academy of Sciences. We express our sincere gratitude to the community of Akebu speakers in the villages of Djon and Kotora for our possibility to conduct a fruitful field research there in 2012, 2013, 2016, and 2019. We are especially grateful to our main consultants, namely, Yao Lolonyo Akossu, Sena-Kwami Sentibili, Kokou Mawuwodo (Honoré) Kokoroko, Yaovi Modeste Tchitche, Mawuli Yawovi (Victor) Ayeto, Kokouvi Kpoliatowou (Martin) Kodjovi, and Achille Djenou. Ablavi Nata (Nathalie) Degblo, Sena-Kwami Sentibili, Kokou Mawuwodo (Honoré) Kokoroko, and Yaovi Modeste Tchitche helped us a lot in organizing our stay and work. Our stays in Togo and trips inside the country became possible due to the great efforts of Svetlana Roubailo-Koudolo. We are grateful to Pasha Koval, Nikita Muraviev, and Dasha Shavarina who participated in our field trips, who collected some of the examples relevant for this paper and with whom we have discussed Akebu a lot. Earlier versions of this article were commented by Dasha Shavarina and by the audience of the conference 'XXX International Congress on historiography and source studies of Asia and Africa' (St. Petersburg, 2019). We also thank Galina Sim for a discussion of Ekoid noun class systems.

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