THE PHONOLOGY AND NOUN MORPHOLOGY OF YI KɪTʊLE, AN ADAMAWA LANGUAGE OF EAST-CENTRAL NIGERIA

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Abstract: The paper describes the phonology and nominal morphology of Kɪtʊlɛ, an Adamawa language of the Tula-Waja group, spoken in East-Central Nigeria. Kɪtʊlɛ has a restricted consonant inventory, marked by a loss of voicing contrast in most consonants. It has a system of ATR vowel harmony, which has begun to erode in many lexical items. There are three level tones plus rising and falling glides. The underlying system of nominal number marking is suffix alternation as with the other languages in the group, but this has undergone numerous alterations, in part due to the addition of prefix alterations, and fossilised suffixes which have been incorporated into the stem. Some of these then appear as infixes, although this is not the underlying system. A note on demonstratives is appended, which shows that these are not directly concordial, but which have a broad semantic logic.

Key words: Kɪtʊlɛ, Adamawa, phonology, nominal morphology

1. Introduction

The Kɪtʊlɛ [Tula] language is spoken in Nigeria, Gombe state, Kaltungo LGA, 30 km east of Billiri. It forms part of the "Tula-Waja group", a subgroup of the Adamawa languages, first identified by Greenberg (1963: 9) who listed it as Group 1 of his proposed "Adamawa Eastern" subgroup of Niger-Congo. Later in the same decade, Jungraithmayr (1968/1969) provided some basic morphological information about some of the languages in this subgroup. These arguments have been reprised in the work of Kleinewillinghöfer (1996a; 1996b). In 2014, Kleinewillinghöfer circulated a comparative wordlist

of the group, which provides evidence for its coherence, and included three dialects of Tula, Kɪtʊlɛ, Baule and Yili. Boyeldieu (1980) had no original field data on Tula, but his study of the nominal affix alternations compared them to Niellim, suggesting that the morphological arguments for an Adamawa branch of Niger-Congo could be supported by similarities in form across its entire geographical range.

The Tula people have been the subject of limited anthropological interest, for example in Huggins (1925), CAPRO Research Office (1995) and Gebauer (1996), but these accounts are very fragmentary. The title of Hall (1944) "From cannibalism to Christ" speaks for itself. The Tula language itself was first described in the grammar sketch by an anonymous missionary, written up by Lukas (1955/1956). This is problematic on vowels and omits tone, but still constitutes a useful base document. Kleinewillinghöfer (2006) is a brief description of the infix system of plural formation in Tula. Finally, Mu'azu & Polo (2015) have published what they claim to be a "Modern Tula Dictionary". As usual with the lead author, this is a problematic piece of work which is best described as vanity publishing; no further reference will be made to it.

Kɪtʊlɛ has long been the subject of a literacy project, and the finalisation of a New Testament is said to be underway. An anonymous draft wordlist was prepared in conjunction with the literacy project for Kɪtʊlɛ, apparently printed out from a draft Bible translation, but with no marking of vowel distinctions and no tones and few plurals. Roger Blench and Musa Tula worked on the list, adding new lexical items, transcriptions and plurals (Blench & Tula 2009). This work was not finalised, but a draft of this dictionary has been in circulation for some time. The present paper is therefore a write-up of this work as it stands; increasing insecurity in the region has not made it possible to check some outstanding items.

The paper attempts to make use of standard linguistic terminology in the descriptions, similar to other accounts of Adamawa languages, for example Kleinewilllinghöfer (1991). It treats the basic phonology paying particular attention to the system of ATR vowels such as

described in Casali (2008). Niger-Congo is well-known for its system of noun-class alternations (Greenberg 1977), most commonly prefixing, but in the case of Gur and Adamawa, consisting of alternating suffixes. The erosion of such systems is widely documented in Adamawa languages with a wide variety of disparate outcomes (Boyd 1989).

2. Kɪtʊlɛ Phonology

2.1. Vowels

2.1.1. Vowel inventory

Kɪtʊlɛ probably has nine phonemic vowels (see Table 1).

Table 1

Vowel system of Kɪtʊlɛ

	Front	**Central**	**Back**
Close High	i	[ʉ]	u
Close high-mid	ɪ		ʊ
Close-Mid	e	ə	
Open-Mid	ɛ	ɔ	
Open		a	

These must originally have been arranged in strict ±ATR vowel harmony sets, as is still the case with some neighbouring languages such as Yebu. A feature of the phonology is the extreme rarity of back vowels; the vast majority of vowels are front or central. The contrast between /ɔ/ and /o/ has disappeared, and indeed /ɔ/ is very rare and [o] has only been recorded in two words. Vowel harmony appears to operate in the stems, principally between the two front vowels i/e and ɪ/ɛ. /ɪ/ is often centralised and is hard to distinguish from /ə/. However, any vowel can pair with the central vowels /ə/ and /a/ and these no

longer form a pairing but can occur in the same word. Unresolved is
the issue of whether a third central vowel is developing. Some words
appear to have [ʉ] in contrast to /ə/ and /a/. It has not yet been
established whether this is phonemic.

2.1.2. Vowel length

Kitulɛ appears to have a restricted set of doubled vowels; only /aa/,
/ee/, /ii/ and /uu/ have been recorded. These are bimoraic sequences
of like vowels, as may be seen from the fact that they often bear two
different tones. It is presumably significant that doubled vowels only
occur with the expanded +ATR vowels and never with the –ATR
vowels. Examples of contrast are as follows.

a ~ aa
kár 'headpad' ~ *kàár* 'pied crow'
kwal 'flute' ~ *kwaal* 'planting'

e ~ ee
ɟe 'pay' ~ *ɟeer* 'to stretch out, expand'

i ~ ii
dì 'to finish' ~ *dǐí* 'sky'
kì 'to cry out, shout' ~ *kîi* 'ladle'

u ~ uu
dùm 'to bite' ~ *dúúm* 'seeds kept for planting'
kù 'to flay, to skin' ~ *kùú* 'farm'

2.1.3. Vowel + approximant sequences

Kɪtʊlɛ has V+y sequences, which only occur as a final syllable in both
singulars and plurals (Table 2, Table 3). The assumption is that these
are former -*I* suffixes which have lost their tone.

Table 2

Kɪtʊlɛ -*Vy* sequences in singulars

sg.	pl.	Gloss
bəŋay	—	'misunderstanding'
kɜ̀kway	*kəkwátí*	'tribal mark'
kɜ̀sway	*kɜ̀swati*	'tailor ant'
kóy	*kóóbí*	'charcoal'

Table 3

Kɪtʊlɛ -*Vy* sequences in plurals

sg.	pl.	Gloss
bwɜ̀mbè	*bwəntɪbwéy*	'antelope'
carkɔ	*cartukɔy*	'okra'
kàlta	*kàltɜ̀tay*	'cat'
kɜ̀nà	*kɜ̀nay*	'scorpion'
kùlè	*kùley*	'boil on skin'
kwəse	*kutay*	'calabash'
luke	*lukey*	'dress'

2.2. Consonants

2.2.1. Inventory

The Kɪtʊlɛ consonant inventory is fairly restricted. Voiceless and voiced stops are in complementary distribution, voiceless word-initially, and free variation between voiceless and voiced intervocalically. This is very rare for Nigerian languages as a whole. Kɪtʊlɛ consonants are as follows (see Table 4).

Voicing contrasts have been effectively lost for some plosives and fricatives, typically [z], [ʤ], [v], [p] and [g], with voiced counterparts only appearing as free variants in intervocalic position. Contrast is maintained for the alveolars [d] and [t]. Thus: *nùke* ~ *nùge* 'grandmother', *bə́ká̐sì* ~ *bə́gə́zì* 'baboon', *dwákà* ~ *dwágà* 'melon'.

Consonant system of Kɪtʊlɛ

	Bilabial	Labiodental	Alveolar		Palatal	Velar	Labial
Plosive	b		t	d		k	
Nasal	m			n	ɲ	ŋ	
Fricative		f	s				
Affricate					ʧ		
Approximant					y		w
Tap				r			
Lateral Approximant				l			

No free variation was noted for some examples where [b] is intervocalic position: *dìbìdù* 'question', *dɪbíl* 'road vehicle'. More testing will be required to establish the exact distribution of free variation.

ʧ ~ ʃ are in free variation in word-initial position. Thus: *ʧìr* ~ *ʃìr* 'come out'.

Deletion of vowels at morpheme boundaries and subsequent assimilation has resulted in occasional geminates or doubled consonants. Examples of all those recorded so far are as follows (see Table 5).

Examples of geminated consoants in Kɪtʊlɛ

C	sg.	pl.	Gloss
bb	*dìr*	*dìbbù*	'fool'
tt	*kɜ̀tàttàkὲ*	*kɜ̀tàttàkὲti*	'shallow part of a pond or lake'
nn	*kòn*	*kúnní*	'mountain'
ŋŋ	*yuŋŋe*	*yuɲi*	'hoe'
ll	*kɜ̀dwàllὲ*	*kɜ̀dwàllὲtɪ*	'kidney'

Such examples are rare but it seems that free variation is less common and it is the voiced counterpart which is realised.

2.2.2. Labialisation

Kɪtʊlɛ permits labialisation of most consonants, although examples are extremely rare for some. The consonants that are labialised are as follows; b, d, f, k, l, m, n, r, s, t, y. The examples below provide evidence for contrasts.

b ~ bw

bà	'to look for, to seek, to search'	~	*bwà*	'death'
bàl	'thick beer made from guinea-corn'	~	*bwàl*	'moulded balls of local maggi'
báŋ	'mountain'	~	*bwàŋ*	'hole'
bàr	'to hide behind a person'	~	*bwàr*	'to be difficult'

d ~ dw

dál	'to fold'	~	*dwɔ̀l*	'to wound'
dààkù	'thief'	~	*dwəku*	'rope'

f ~ fw

fɔ́r	'to put'	~	*fwər*	'to be sour'
fèbu	'all'	~	*fwɛ̀bʊ*	'quickly, rapidly, soon'

k ~ kw

kár	'headpad'	~	*kwár*	'embrace'
kada	'dog'	~	*kwàdà*	'stool, excrement, faeces, dung, manure'
kí	'to break'	~	*kwí*	'describes light-coloured skin'

l ~ lw

lɛ 'sheath' ~ *lwɛ̀* 'enough'

m ~ mw

má 'to do' ~ *mwá* 'to inform'
mɛ́ 'evening' ~ *mwè* 'water'
màr 'muddy place' ~ *mwə̀r* 'bundle'

n ~ nw

nɛ 'mother' ~ *nwè* 'boil'

r ~ rw

rì 'finish' ~ *rwí* 'bee'

s ~ sw

sà 'to get ready' ~ *swà* 'to dig'
sàr 'to clear land for farming' ~ *swar* 'to slough off the skin (snake)'
sè 'shade' ~ *swè* 'sit'

t ~ tw

tì 'thatching' ~ *twì* 'to burn'
tàr 'waist' ~ *twàr* 'to think'
tě 'song' ~ *twě* 'horse'

y ~ yw

yà 'to go' ~ *ywə̀n* 'smoke'

2.2.3. Prenasalisation

Nasals in word-medial position are homorganic with the following consonant. These probably arise from combinations of the root and a suffix, which has now become unproductive and bound to the root. The most common combinations are /mb/ and /nt/. Examples of these are as follows (see Table 6).

Table 6

Examples of prenasalised consonants in Kɩtʊlɛ

sg.	
bwə̀mbè	'antelope'
dìtwəmbɩr	'swearing'
fùmbà	'poor quality crops reserved for later in the season'
kámbí	'rooms'
kə̀mbìr	'money, iron'
pl.	
dàntɩ̌l	'bundle of cornstalks'
bétʊ́kwántì	'small rams'
bíntʊ	'towns'
fə̃́ntì	'places'

The homorganic principle can be seen most clearly with the first person singular pronoun, which is N, i.e. /m/, /n/ and /ŋ/ according to the following consonant. Thus:

— m precedes m, b,
— n precedes t, l, r, c,
— ŋ precedes ŋ, k, w, y.

2.2.4. Syllable and word structure

The major syllable structures are V and C(ʷ)V. Nasal prefixes could be analysed as C, but as they do not bear independent tone, this remains controversial. Table 7 shows the word structures so far recorded.

Table 7

Canonical Kɩtʊlɛ word structures

Structure	Kɩtʊlɛ	Gloss
V	*a*	'on, in, at, on top of'
VCV	*acá*	'purse'
VCVC	*aràm*	'never'

Structure	Kɪtʊlɛ	Gloss
CV	*bà*	'to look for, to seek, to search'
CVC	*bàl*	'thick beer made from guinea-corn'
CVCV	*kwàdà*	'faeces'
CVCCV	*bɜ̀rtʊ̀*	'to tease'
CVCVC	*bɛ̀kán*	'to bring'
CVCVCV	*bákə́sì*	'baboon'

Kɪtʊlɛ has no syllable initial consonant clusters, although CC sequences at morpheme boundaries are common.

2.3. Tones

Kɪtʊlɛ has three level tones, and glide tones that arise from sequences of level tones. The basic conventions are as follows:

— high: ′,
— mid: unmarked,
— low: `,
— rising: �‌˘,
— falling: ˆ.

It is assumed in this paper that the basic tone-bearing unit (TBU) is a single vowel, and that bimoraic sequences of two similar vowels can therefore bear either similar or dissimilar tones.

Some examples of minimal triplets illustrating the three tone-heights:

fúr	'grave'	~ *fur*	'to bury'	~ *fùr*	'stomach'
kúl	'trap'	~ *kul*	'to chase after women'	~ *kùl*	'sword'
kwí	'clear liquid on beer'	~ *kwi*	'to untie, loose'	~ *kwì*	'to vomit'

Contour tones are rare and unpredictable but in all cases the syllable coda is a sonorant. For example: *bwăl* 'to persist', *câm* 'guinea-corn', *fŭl* 'to cheat', *kĕr* 'sound, noise'. They probably arise from compression of VV sequences that are pertained in other words[1]: *fwèé* 'pullet', *kàár* 'pied crow'.

Melodies at the word level are very diverse and only a few observations can be entered here. Tone melodies on disyllabic words exhibit all possible combinations, as shown in Table 8.

Table 8

Diversity of tone melodies on disyllabic word

Melody	Kɪtʋlɛ	Gloss
HH	*délán*	'death' [Baule dial.]
MM	*bwaram*	'tiredness'
LL	*dèlàn*	'praise'
HL	*dɔ́kàn*	'to make peace'
LH	*bwàrán*	'Well done!'
LM	*càbtū*	'food'
HM	*bwésɪn*	'childishness'

Trisyllabic roots, which are predominantly nominals, have a strong tendency to exhibit LLL tone patterns as in Table 9.

Table 9

Kɪtʋlɛ LLL melodies

Kɪtʋlɛ	Gloss
bàbùnè	'orphan'
bèkwàmì	'small ram'
bìyìlìm	'truth'
bwɔ̀ŋbwɔ̀ŋɛ̀	'sorrow'

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[1] One reviewer states: "The data strongly suggests that the Tone Bearing Unit is the mora, and coda sonorants are moraic". The author considers this unlikely and stands by his interpretation.

End of Table 9

Kɪtʊlɛ	Gloss
kàfɔ̀rɛ̀	'agama lizard'
kàfwìnì	'annoyance'
sìkìmì	'to lift down'

This may reflect a historical pattern of Low-Tone prefixes which have the effect of lowering the remainder of the stem.

3. Nominal morphology

3.1. Overview

Kɪtʊlɛ is an Adamawa language and like most members of this family its original noun-class system would have been marked by suffix alternations. Adamawa is in turn a branch of Niger-Congo which exhibits noun-class affix alternation and often concordial agreement processes, although in many cases this has broken down or been re-interpreted. Greenberg (1977) presents clear evidence for the movement between prefix and suffix and it is generally accepted that both Gur and Adamawa are characterised by suffixing. In relation to number-marking, Kɪtʊlɛ noun morphology is extremely complex, driven by the near collapse of a regular series of alternating suffixes. This system appears to have undergone major restructuring and Kɪtʊlɛ is unusual in having prefixes, infixes and suffixes, and often there are two alternations in the same word (see also Kleinewillinghöfer 2006). The result is a highly un-predictable system of nominal plurals. Many of the noun stems incorporated eroded affixes, which have then been subject to affix renewal. While the elements in a particular singular and plural class can usually be identified, multiple combinations are possible. In addition, plurals undergo highly complex tone-changes, making it difficult to assign an underlying tone to an affix. All the hypotheses explored below to explain the patterns of number marking should be regarded as tentative, especially as in many cases only a single example exists.

3.2 Morphemes marking number in Kɪtʊlɛ

3.2.1. Singular affixes

Kɪtʊlɛ singular affixes fall into four categories (Table 10).

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Table 10

Kɪtʊlɛ singular affixes

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Class	Position	Realisations
CV-	prefix	*kə-*, *dI-*
-N	suffix	*-Vŋ*
-R/L	suffix	*-Vr*, *-Vl*
-V	suffix	*-E*, *-I* [?], *-Vy*

The *kə-* affix only appears as a prefix and only in alternation with *tə-*, as shown below:

sg.	pl.	
kə̀báŋ	*tə̀baŋri*	'hill'
kə̀dɩŋ	*tədíŋrì*	'platform raised on mud or blocks'
kədwakʊ	*tədwákə́rì*	'rope'
kə̀kàŋ	*tə̀kàŋrì*	'handle'

Niger-Congo roots typically have a CVCV root with a CV affix. Words such as sg. *kabàn* ~ pl. *kabakù* 'judgment', sg. *carkɔ* ~ pl. *cartukɔy* 'okra' have a *-kV* number marking suffix. It is possible that in words such as sg. *kidike* ~ pl. *kidiketi* 'bat', sg. *kədwakʊ* ~ pl. *tədwákə́rì* 'rope', sg. *kɪfíkʊ* ~ pl. *tìfíkɪrɪ* 'clan' there is an unproductive infixed *-kV* suffix which has now become bound to the stem.

The singular prefix *dI-* alternates with *tI-* in the plural:

sg.	pl.	
dìbə́l	*tɪbəlɪn*	'skin'
dìkə̂l	*tíkə̀lí*	'bow'
díkulan	*tíkùlànì*	'fighting'

Kɪtʊlɛ has a singular nasal suffix *-N*, usually realised as *-Vŋ*, although alternating with a wide variety of plural suffixes:

sg.	pl.	
bɔ̀ràŋ	*bɔ̀rɔ̀n*	'flat cakes made from fermented locust-bean seeds'
bìyàŋ	*bártʊ*	'arrow'
dùwàŋ	*dùy*	'locust bean tree'
fəláŋ	*fəlí*	'hand'
kɪsaŋaŋ	*kɪsaŋɪ*	'euphorbia [cactus]'

Words such as sg. *kɔ̀raŋɛ́* ~ pl. *kɔ̀raŋɛ́tɪ* 'centipede', sg. *dìyakan* ~ pl. *tìyákànì* 'guinea-worm' are then analysed as incorporating frozen *-NV* nasal suffixes in the stem.

Kɪtʊlɛ has a final *-r/l* suffix in singulars which can alternate either with *-bi* or *-tU* in the plural:

sg.	pl.	
bwír	*bwíbí*	'well'
díkír	*tikíbí*	'bush'
dìkwɛl	*tìkwɛ́bɪ*	'anus'
dɔ̀r	*dítu*	'person who shows occasional bursts of madness'
kúl	*kútú*	'trap'

Its probable origin is an eroded *-rV/lV* suffix which is still present as a fossil form in words such as sg. *kɔ̀kùrɛ̀* ~ pl. *kɔ̀kùrɛ̀ti* 'heap, pile', sg. *kɔ̀kwɛrɪ* ~ pl. *kɔ̀kwɛrɪtɪ* 'poor crops that are inedible' where the suffix has been incorporated into the stem. In these examples the *-Ir* suffix has been incorporated and a new plural suffix *-I* has been added in the plural: sg. *dìtwəmbɪr* ~ pl. *tìtwɔ̀mbɪ̀rì* 'swearing' ~ sg. *kɔ̀mbɪ̀r* ~ pl. *kɔ̀mbɪ̀rɪ* 'money, iron'.

Kɪtʊlɛ has at least two singular vowel suffixes, *-E* (e ~ ɛ) and *-I* (i ~ ɪ). These cannot always be reliably distinguished from frozen *-CV* affixes.

Kɪtʊlɛ has a mid-front vowel suffix *-E* which shows harmony with the vowel of the stem:

sg.	pl.	
bàbùnè	*babùmbu*	'orphan'
bɛ̀wùrɛ	*bɛ́tíwúrì*	'finger'
bìnɛ̀	*bìnɪ*	'granary'
fwìyɛ̀	*fʊtɪ*	'soup'

It is conceivable that not all cases of final *-E* have the same origin. For example, the *-rɛ* in 'finger' above might be a former *-rV* affix. Only further examples will clarify this issue.

Evidence for a true *-I* suffix in nominal singulars is less certain. All the cases below might also be uneroded -CV suffixes:

sg.	pl.	
bɛ̀kwàmì	*bɛ́tʊ́kwántì*	'small ram'
bɔ̀lí	*bɔ̀ltɪ*	'tip of pointed object'
kɔ̀bìlɪ	*kɔ̀bɪlɛtɪ*	'fresh cowpeas'

However, other evidence from fossil morphemes provides possible support for such an affix. Long vowels such as in *dìí* (only sg. form) 'sky', sg. *kîì* ~ pl. *kiiní* 'ladle' may be stem plus *-I* suffix. *CwI* sequences, as in sg. *kɔ̀kwi* ~ pl. *kɔ̀kwɔti* 'seed' may represent an orginal stem such as *kɔku* with an *-I* suffix which has beomce assimilated. It is even possible that words such as sg. *kayɛ́* ~ pl. *katɪbu* 'co-wife' contain an original *-I* suffix, assimilated after a vowel and then resuffixed with *-E*: sg. *kɔ́kùmè* ~ pl. *kɔ́kumetí* 'epidemic, plague'.

There is a single example of what may be a *-dU* suffix, although lack of other examples makes this uncertain: sg. *dìbìdù* ~ pl. *tìbìdɔ̀rì* 'question'.

Apart from the *bV-* prefixes described above, Kɪtʊlɛ has bV-diminutive prefix which precedes noun-class affixes and a high-tone which alternates with the plural form. These diminutives are related to the widespread Niger-Congo root *-bi* for 'child, small'. Since it is retained in plurals it cannot be regarded as part of the nominal affix alternation system. However, where the prefix is used, indicating

diminutive, a *-tV-* affix follows it, which suggests a *Ø-/tV-* alternation preprefixed with the diminutive, as in the following examples:

sg.	pl.	Gloss
bèkìtì	*bɛ́tɨ́tɨ́ní*	small stick
bèkwàmì	*bɛ́tʊ́kwántì*	small ram
bɛ̀wʊ̀rɛ	*bɛ́tɨ́wʊ́rì*	finger

3.2.2. Plural affixes

Kɪtʊlɛ plural affixes fall into four categories, CV, -R/L, -N and -V (Table 11).

Table 11

Kɪtʊlɛ plural affixes

Class	Position	Realisations
-CV	suffix	*-tI*, *-rI*, *-nI*, *-bV*, *-yI*
-R/L	suffix	*-Vr*, *-Vl*
-N	suffix	*-Vn*, *-Vm*
	infix	*-ŋ-*, *-m-*
-V	suffix	*-a* [?], *-I*, *-Vy*

CV affixes are followed by an underspecified vowel, either I or U, which usually harmonises with the ATR value of the stem vowels.

The most common Kɪtʊlɛ plural is formed by the addition of *-tI* where I is *i/ɪ*, effectively a *-Ø/-tI* alternation:

sg.	pl.	
acá	*acátí*	'purse'
bɛ	*bɛtɪ*	'young animal'
kàár	*kàárti*	'pied crow'
bwὲ	*bwὲtì*	'something kept aside for a special purpose'
côŋ	*cʊ́ŋtì*	'mosquito'

In some cases, *-tI* can alternate with a -V suffix in the singular: sg. *bɔ̀lí* ~ pl. *bɔ̀ltɪ* 'tip of pointed object'.

A common allomorph of *-tI* is *-tU*, where U is u/ʊ. This occurs where the singular has final *-r*, which is deleted in the plural:

sg.	pl.	
dur	dútú	'head'
fʊ̀r	fútʊ	'place covered in thick grass'
kár	kátʊ	'headpad'

Various types of assimilation can occur: sg. *fwɨ̀yɛ̀* ~ pl. *fʊtɪ* 'soup'. It is possible that *fwɨ̀yɛ̀* is the realization of /fʊ̀-(y)ɛ̀/ with epenthetic [y], which would make the alternation with /fʊ-tɪ/ regular.

Some nouns have singular *dI-/tI-* alternating prefixes:

sg.	pl.	
dìbə́l	tɪbəlɪn	'skin'
dìkâl	tíkə̀lí	'bow'
díkulan	tíkùlànì	'fighting'

Other nouns, however, conserve their *dV-* prefix:

sg.	pl.	
díbwɔ̀l	díbwɔ̀lan	'strolling'
dire	direti	'hedgehog'

In one case, the *ti-* prefix is placed in front of an old *de-* prefix without assimilation: sg. *dèlàn* ~ pl. *tídèlàn* 'praise'.

A small proportion of the numerous nouns with a *kə-* prefix also alternate with *tə-*:

sg.	pl.	
kɔ̀báŋ	tɔ̀baŋri	'hill'
kɔ̀dɪŋ	tədíŋrì	'platform raised on mud or blocks to lie down'
kədwakʊ	tədwákə́rì	'rope'
kəfɛ́ɛ́ku	təfɛ́ɛ́kə́rɪ	'hunting'

At least one noun infixes *-tə-* between the two syllables of the stem. There are two possible interpretations of this. Either the second syllable is composed of frozen suffixes, or else this is an old compound and the apparent infixing is the nominal prefix on the second element. For example, the final *-ta* of the stem in 'cat' was presumably originally a productive *-tV* suffix. Before it became frozen, another affix was added to what was perceived as the true stem. However, *-ta-* was not deleted and another pluralising suffix was added producing a final *-ay*. Alternatively, in a word like *càrkɔ̀* 'okra' there were originally two distinct elements forming a compound, but the *tV-* prefix was applied to the *-kɔ̀-* element before the number marking became fully lexicalised:

sg.	pl.	
bwɔ̀mbɛ̀	bwəntɪbwéy	'antelope'
càrkɔ̀	càrtùkɔ̀y	'okra'
kàlta	kàltətay	'cat'

-rI only occurs as a suffix and only on a relatively small number of words. Where the singular has final *-ŋ*, the *-rI* suffix is added. However, where the final syllable of the singular is *-dU* or *-kU*, the vowel is assimilated, usually to *-ə-*:

sg.	pl.	
báŋ	báŋri	'mountain'
kɔ̀kàŋ	tɔ̀kàŋrì	'handle'
càdù	càdɔ̀rì	'exit of bush-rat hole'
dəkūdu	təkūdɪri	'navel'
dwəku	dwəkəri	'rope'
kəféɛ́ku	təféɛ́kɔ́rɪ	'hunting'

Occasional words appear to have a *-rI* suffix, but this may be an *E~I* alternation happening to follow *r-* rather than an assimilation of the *-rI*: sg. *bɛ̀wʊ̀rɛ* ~ pl. *bétíwúrì* 'finger'.

-*nI* only occurs as a suffix and only on a relatively small number of words. In all cases, this is a -*Ø/-ni* alternation:

sg.	pl.	
bu	buni	'small garden'
bùrà	*bùrànì*	'corner, angle of an object'
fúrà	*furani*	'corner of the house'
kaŋlɔ	*kaŋlɔnɪ*	'deserted settlement'
kè	*keni*	'borrow-pit'

It is cross-linguistically plausible to anayse -*rI* and -*nI* as allomorphs, since they occur with non-intersecting finals.

A -*bI* suffix appears in alternation with either final -*r* or final -*n* in singulars:

sg.	pl.	
bwír	*bwíbí*	'well'
díkír	*tikíbí*	'bush'
dɪn	*dɪmbi*	'name'

A -*bU* suffix is applied only to human nouns:

sg.	pl.	
dìr	*dìbbù*	'fool'
naye	*nàtəbu*	'women'
nĕ	*nèbʊ*	'mother'
sèlè	*sèlə̀bʊ*	'elder'
tĕ	*tèbʊ*	'father'
tùkè	*tʊkebu*	'grandfather'
fàkwàrɛ̀	*fákwàrbú*	'enemy'

This occurs throughout the Tula/Waja group and is related to a widespread third person plural in Niger-Congo languages.

In the following case, the -*bU*- is inserted as an infix, and a final -*m* is also added:

sg. *dààkù* ~ pl. *dààbùkúm* 'thief'.

In this example, either this is an otherwise unparalleled initial reduplication, or else, the *bV-* appears here as a prefix:

sg. *bweshín* ~ pl. *bə̀bweshín* 'younger brother'.

A very few words have a *-yI* suffix:

sg.	pl.	
dəkwal	*tikwaliyi*	'word'
nee	*nuyi*	'eye'

It is assumed that nominal plurals with a final *-y* are assimilated *-I* suffixes rather than an eroded form of *-yI*. An alternation between *wU-* and *yI-* occurs as a prefix alternation on a few nouns:

sg.	pl.	
wʊ̀barɛ	*yìbarɪ*	'wild animals'
wùkəre	*yìkəri*	'old thing or person'
wutire	*yitiri*	'the younger one'

Whether this *yI-* is the same affix as the suffixed *-yI* remains to be seen.

Kıtʊlɛ has suffixed and infixed nasals n and m as noun-class markers. It is not yet clear whether these are distinct from the rare functional suffixes *-nI*, rather than simply eroded forms. Table 12 presents examples of a final *-n* plural suffix as follows.

Table 12

Alternations of nasal suffixes

sg.	pl.	Gloss
bùràŋ	*búr�òn*	'sickness'
cʊ́ŋ	*cʊ́ŋín*	'nose'
dəsır	*tə̀sìràn*	'greeting'
dìbə́l	*tıbəlın*	'skin'
díbwə̀l	*díbwə̀lan*	'strolling'
dʊkúr	*dʊkútʊn*	'smth. wrapped in leaves presented as a gift'

-Ø/-m suffixes are as follows:

sg.	pl.	
bwɛkíná	*bwɛbákɪnam*	'maternal uncle'
bwélè	*bwélem*	'youth'
fúr	*fúrèm*	'burial'

Some alternations present examples of -*N* infixes:

sg.	pl.	
dìdʋ̀n	*tɪdúmʋn*	'knee'
dəsun	*təsumin*	'dancing helmet'
dìsín	*tɪsɪmɪn*	'loan'
cʋ̀ʋ̀n	*cʋŋún*	'hunger'

The bilabial infixes are strongly co-associated with the *dV-/tV-* alternations in the prefix. One possible interpretation is that there was an original -*m* number marking affix, as illustrated above. This became unproductive and was replaced by the -VN suffixes illustrated in Table 12. The form *cʋŋún* 'hunger' is unique in the lexicon but perhaps can be explained by an analogous process.

KiTʋlɛ has the vowel suffixes -*a* and -*I*.

The following -*a* suffixes appear to be exceptional:

sg.	pl.	
dìnʋr	*tɪnúra*	'laughter'
fwal	*fwàlà*	'period when animals are being weaned'

-*I* suffixes may either be added to the singular stem or alternate with an -*E* suffix:

sg.	pl.	
bɛ́n	*bɛ́nɪ*	'tongue'
bìnɛ̀	*bìnɪ*	'granary'
bʋ̀kɛ̀	*bʋkí*	'bead'
bwə̀l	*bwə́lì*	'mouse'
cibe	*cibi*	'clay dish'
cíɲɛ̀	*cíɲí*	'fish'
dɪbíl	*tìbìlì*	'road vehicle'
dìfʋn	*tɪfúnɪ*	'deaf person'

Where -*I* follows a vowel it is assimilated to -*y*:

sg.	**pl.**	
bwàmbè	*bwàntɩbwéy*	'antelope'
carkɔ	*cartʊkɔy*	'okra'
dwɜ̀kà	*dwɜ̀kay*	'net (for carrying produce)'
kàlta	*kàltɜ̀tay*	'cat'
kɜ̀nà	*kɜ̀nay*	'scorpion'
kùlè	*kùley*	'boil on skin'

3.2.3. Synthesis: Kɪtʊlɛ noun-class markers

Table 13 presents a provisional synthesis of the Kɪtʊlɛ singular/plural noun-class affix pairings.

Table 13

Kɪtʊlɛ singular/plural pairings
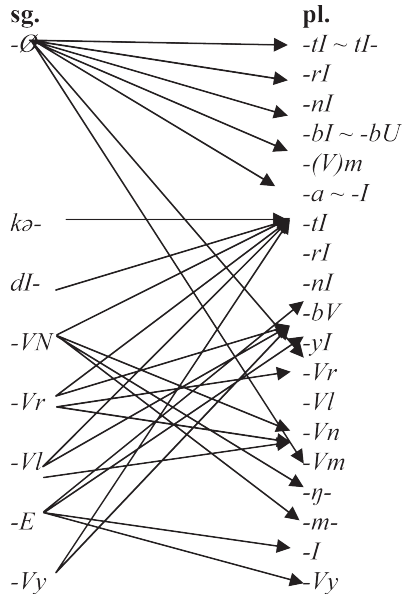
Doubtful affixes and reconstructed affixes are presently excluded, pending further evidence.

3.3. Demonstratives

Demonstratives in Kɪtʊlɛ show agreement but not segmental concord with the nouns they qualify. There is a broad semantic link between the pairings of demonstratives and nouns, but as the examples below show, there are many exceptions. This type of breakdown of concord has been noted for other languages in the group such as Awak (Yebu) (Jungraithmayr 1968/1969). Table 14 shows the principal pairings for the proximal demonstrative.

Table 14
Kɪtʊlɛ demonstratives

'this'	'these'	Class semantics
wù	*bɜ̀bʊ̀*	'human beings'
wù	*yìyʊ̀*	'animals, fish'
dɜ̀dʊ̀	*tɜ́tʊ*	'inanimates'
kɜ̀kʊ̀	*yìyʊ̀*	'plants'

The examples below show some of the nouns and the class into which they fall.

i) Human beings: sg. *bwɛ́* ~ pl. *bwɛ́sún* 'child'. Thus:

bwɛ́ wù   ~   *bwɛ́sún bɜ̀bù*
'this child'   'these children'

However, this class also includes the following nouns:

sg.	pl.	Gloss
câm	*camti*	'guinea-corn'
carkɔ	*cartukɔy*	'okra'
cibe	*cibi*	'clay dish'
cíŋè	*cíŋí*	'fish'

ii) Animals:

sg.	pl.	**Gloss**
bə́kə́sì	*bə́kə́sìtí*	'baboon'
bèkwàmì	*bétúkwántì*	'small ram'
bwàlà	*bwàlàtí*	'buffalo'
bwɔ̀l	*bwə́lì*	'mouse'

iii) Inanimates: *bʊtʊ* (sg. only) 'ghost'.

iv) Plants:

sg.	pl.	Gloss
dùwàŋ	*dùì*	locust bean tree
kɔ̀ŋàŋ	*kɔ̀ŋí*	fan-palm tree
kɛ̀lɔ̀n	*kɛ̀lɔ̀nɪ*	large pumpkin

4. Conclusion

Kɪtʊlɛ has a relatively simple consonant inventory, characteristic of other languages in its group with only labialisation as a contrastive modification. There is limited evidence for doubled consonants, probably arising from former morpheme boundaries. The vowel system was clearly a former 5+5 ATR system, such as is retained in neighbouring Yebu and Kamo. However, the high vowels have begun to merge leaving some words no longer showing rigorous harmony. There is evidence for contrastive length in some vowels. The system of three tone heights is attested in other languages of the group.

Kɪtʊlɛ has an extremely complex synchronic system of marking number in nominals, which derives from a much simpler prior system of suffix alternations, some of which have been re-analysed as part of the stem, become unproductive and then a new plural marking suffix has been added. In some examples, both alternations continue to operate, which gives the surface appearance of productive infixing.

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