

Noun-class morphology in kiTulε and its relevance for comparative Niger-Congo

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Noun-class affixes in Niger-Congo

- Niger-Congo languages are generally characterised by alternating noun class affixes.
- Only Ijọ, Mande and Dogon lack these entirely
- Prefixes are most common, being found in Atlantic, Kordofanian, Kwa, East and West Benue-Congo
- Even where there are no longer functioning prefixes today, such as West Benue-Congo, trace exist

Noun-class affixes in Niger-Congo II

- However, in Gur, Kru and Adamawa-Ubangian the dominant pattern is suffixes
- Cognates between the prefixes and suffixes show that affixes can switch position as Greenberg argued long ago
- Some languages, such as Tivoid and some GTM languages have both prefixes and suffixes simultaneously
- These languages are in transition, rather like seeing a snapshot of the switch in process

Noun-class affixes in Niger-Congo III

- How does this happen? Carl Hoffmann argued a while back for cLela that it was to do with re-analysis of copied demonstratives
- But there may be several routes..
- This paper looks at kiTulé a language which presents an extreme case of such a transition and in addition has extremely rare infix nominal affixes

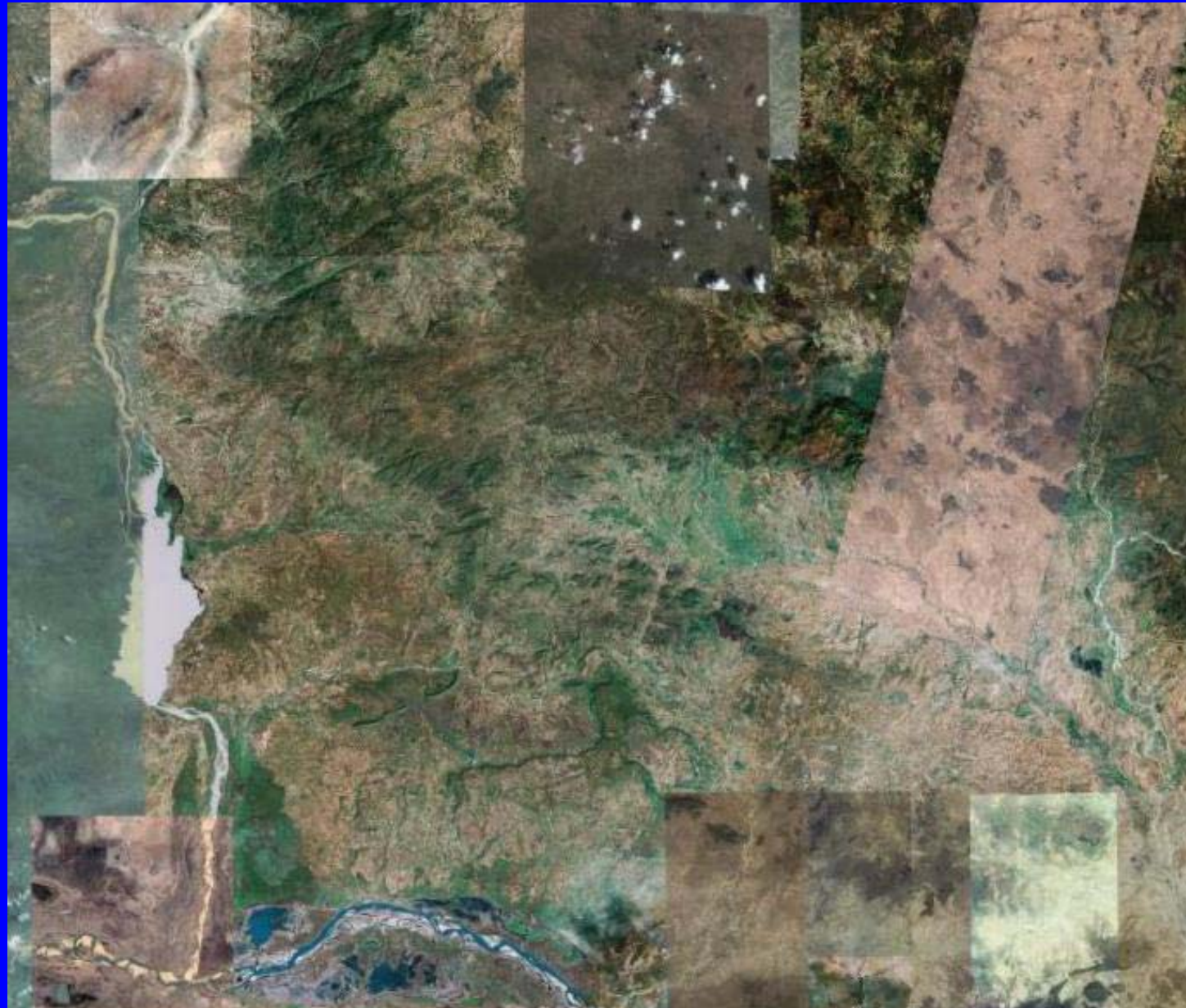
Tula background

- The work described here was carried out in February-March of 2008, together with Musa Tula, the Tula community literacy co-ordinator.
- It is part of a longer programme to revise the orthography and create a dictionary.

Tula

- Spoken by about 50,000 people about 20 km NE of Billiri, which is SE of Gombe town, in Gombe State, east-central Nigeria

Tula from space



Tula

- A western Adamawa language, part of the Tula-Waja group
- Old missionary grammar from 1950s, but both vowels and tone are quite inaccurate
- Literacy programme also from this era, but restarted in the early 1990s, following training of Tula personnel in Jos
- However, the existing orthography also does not represent the vowels well and does not use tone
- There are three dialects; the Tula Yiri dialect was chosen for orthography development

Tula

- Tula probably has nine phonemic vowels;

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

Status of a rare, high central vowel so far unresolved

Tula vowels

- These must originally have been arranged in strict \pm ATR vowel harmony sets, as is still the case with some neighbouring languages such as Yebu.
- Another puzzling 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 virtually disappeared, /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 vowels can pair with the central vowels /ə/ and /a/ and these no longer form a \pm pairing but can co-occur in the same word.

Vowel length

- Kitulɛ appears to have a restricted set of long vowels; only /aa/, /ee/, /ii/ and /uu/ have been recorded.
- These are not genuine long vowels, but simply 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.
- There are no nasalised vowels

Consonants

	Bilabial	Labio-dental	Alve-olar	Palatal	Velar	Labial
Plosive		b	t d	tʃ	k	
Nasal	m		n	ɲ	ŋ	
Tap			r			
Fricative		f	s			
Approximant				y		w
Lateral Approximant			l			

- The Tula consonant inventory is restricted with an absence of voicing contrasts, with a particular absence of [z], [dʒ], [v], [p] and [g] which only appear as alternants in medial position

Prosodies

- Kitulɛ has no palatalised consonants
- Kitulɛ permits labialisation of most consonants, although examples are extremely rare for some. The labialised consonants are; b, d, f, k, l, m, n, r, s, t, y.
- 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/
- 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.

Tones

- KiTulɛ has three level tones, and glide tones that arise from sequences of level tones.

High

Mid

Low

Rising

Falling

'

Unmarked

`

ˊ

ˋ

fúr

grave

fur

to bury

fùr

stomach

Tones

- Glide tones are rare and unpredictable;

bwǎl v. to persist

câm n. guinea-corn

fǔl v. to cheat

kěrr n. sound, noise

- It seems possible they may arise from compression of VV sequences;

fwèé n. pullet

kàár n. pied crow

Comparison with Wiyau [=Waja]

- Wiyau [=Waja] is the only nearby language for which there is comparable data (Kleinwillinghofer 1991)
- Wiyau does not show the same loss of voicing contrast in consonants and has a correspondingly larger set of labialised consonants
- Wiyau has a more balanced \pm ATR nine-vowel system, also with a possible extra central vowel but does not exhibit the same bias against back vowels

Tula nominal morphology

- Tula has extremely complex noun morphology, driven by the near collapse of a regular series of alternating suffixes.
- However, rather like some Nilo-Saharan languages, it has retained many unproductive affixes
- Tula is an Adamawa language and like most members of this family its original noun-class system would have been marked by suffix alternations.
- This system appears to have undergone major restructuring and Tula is unusual in having prefixes, infixes and suffixes, often with two alternations in the same word.
- Uli Kleinwillinghofer has a paper in press on this topic

Tula nominal morphology II

- Many noun stems incorporate eroded affixes, which have then been subject to affix renewal.
- While the elements in a particular singular and plural class can usually be identified, the multiple combinations possible make for a complex analysis.
- In addition, plurals undergo highly complex tone-changes, making it difficult to assign an 'underlying' tone to an affix.

Singular nominal affixes

Table 1. Tula singular affixes

Type	Position	Realisations
Cv	prefix	kə-, kɪ-, dɪ-
-N	suffix	-Vŋ
-R/L	suffix	-Vr, -Vl
-V	suffix	-E, -l [?], -Vy

Singular affixes kə-, kɪ-

- The kə- affix only appears as a prefix and only in alternation with plural tə-

kəbáŋ	təbaŋri	hill
kədɪŋ	tədɪŋrì	platform
kədwakɔ	tədwákérì	rope
kəkàŋ	təkàŋrì	handle

- in words such as;

kidike	kidiketi	bat
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- there is a frozen –kV suffix which has now become bound to the stem.

kifíkú	tìfikirì	clan
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Singular affixes

- The prefix dɪ- appears in alternation with tɪ-

dìbəl tɪbəlɪn skin

dìkêl tɪkəlɪ bow

díkulan tɪkùlànì fighting

Singular affixes

- Tule has a nasal suffix –N, usually realised as –Vŋ. It may well have originally been –NV, and corresponded to the NV- affix found in plurals

bə̀ràŋ	bə̀rən	locust-bean cakes
bìyàŋ	bə̀rtɔ	arrow
dùwàŋ	dùì	locust bean tree
fələŋ	fəlí	hand
kìsàŋaŋ	kìsàŋi	cactus

- Words such as;
- probably incorporate frozen -VN nasal affixes

kə̀raŋé	kə̀raŋéɪ	centipede
dìyakan	tìyákàni	guinea-worm

Singular affixes

- Tule has a final -r/l suffix in singulars;

bwír

bwíbí

well

dèr

dítu

mad person

- Its probable origin is a an eroded rV/IV- suffix;

díkír

tikíbí

bush

dìkwɛl

tìkwébi

anus

kúl

kútú

trap

- Words such as;

kèkùrɛ̀

kèkùrɛ̀ti

heap, pile

- probably incorporate this affix in frozen form.

kèkwɛrɪ

kèkwɛrɪti

inedible crops

Singular affixes

■ Tula has at least two vowel suffixes in the singular, -E and -I. these cannot always be reliably distinguished from frozen -CV affixes.

bàbùnè	babùmbu	orphan
bèwùre	bétíwúrì	finger
bìnè	bìnɪ	granary
fwìyè	fɪtɪ	soup

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

bèkwàmì	bétúkwántì	small ram
bèlí	bèlɪ	tip of pointed object
kèbìlɪ	kèbɪlɛtɪ	fresh cowpeas

Morphemes identified in Tula plurals

Tula plural affixes			
Tula plural affixes are of four types, CV, -R/L, -N and -V	Type	Position	Realisations
	Cv	prefix	-tl, -rl, -nl, -bV, -yl
	-R/L	suffix	-Vr, -Vl
	-N	suffix	-Vn, -Vm
		infix	-ŋ-, -m-
	-V	suffix	-a [?], -l, -Vy

Tula CV plural affixes

The most common Tula plural is formed by the addition of –tɪ where I is i/I.

acá	acátɪ	purse
bɛ	bɛtɪ	young animal
kàár	kàártɪ	pieb crow
bwè	bwètɪ	something kept aside for a special purpose
côŋ	cóŋtɪ	mosquito

A common allomorph of –tɪ is –tʊ, where U is u/ʊ

dur	dútʊ	head
fùr	fútʊ	place covered in thick grass
kár	kátʊ	headpad

Tula Plural affixes bV- and dV-

Where the bV- prefix indicating diminutive is used, the -tV- affix can be infixated after it, and suffixed be applied simultaneously, as in 'small ram';

bɛkɪɪ	bɛtɔɪɪ	small stick
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bɛkwàɪ	bɛtɔkwántɪ	small ram
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bɛwɔɛ	bɛtɪwɔɪ	finger
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Some nouns have dV- prefixes, which are probably former -tV- affixes transported to the front of the stem and then frozen. Some of these, when a -tV- affix is part of the pluralisation strategy alternate d/t but also add their synchronic suffix which may vary from one noun to another.

dɪbəl	tɪbəlɪn	skin
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dɪkəl	tɪkəlɪ	bow
-------	--------	-----

dɪkulan	tɪkùlànɪ	fighting
---------	----------	----------

Plural affixes -rɪ

-rɪ only
occurs as
a suffix
and only
on a
relatively
small
number of
words and
always
additively

báŋ	báŋrɪ	mountain
càdù	càdèrɪ	exit of bush-rat hole
dəkōdu	təkōdɪrɪ	navel
dwəku	dwəkərɪ	rope
kəféeku	təféékérɪ	hunting
kəkàŋ	təkàŋrɪ	handle

Plural affix -nI

-nI only occurs
as a suffix
and only on
a relatively
small
number of
words also
additively

-nI and -rI
are probably
allomorphs

bu buni small garden

bùrà bùrà̀nì corner, angle of
s.t.

fùrà furani corner of the
house

kaŋlɔ kaŋlɔnI deserted
settlement

kè keni borrow-pit

Plural affixes –bl and -bU

- Tula has a –bl suffix appears in alternation with either final –r or final –n in singulars.

bwír	bwíbí	well
díkír	tikíbí	bush
dín	dímbi	name

- and a –bU suffix is applied only to nouns to do with persons;

dír	dìbbù	fool
naye	nàtəbu	women
ně	nəbʊ	mother
sèlè	sələbʊ	elder
tě	təbʊ	father
tùkè	tukebu	grandfather
fàkwàrè	fàkwàrbú	enemy

Plural affix -yI

- Tula has a very few words with a -yI suffix

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 an apparent prefix alternation on a few nouns.

wòbare yìbari wild animals

wùkəre yìkəri old thing or person

wutire yitiri the younger one

Plural affixes –n, -m

- Tula has suffixed and infix nasal n and m as noun-class markers. It is assumed that these are distinct from the rare functional suffixes –ni, rather than simply eroded forms. Examples of the –n suffix are as follows;

bùràṅ	bùròn	sickness
cùn	cùṅin	hunger
cóṅ	cóṅín	nose
dəsír	təsíràn	greeting

- -m suffixes are as follows;

bwékíná	bwébóknam	maternal uncle
bwélè	bwélem	youth
fúr	fúrèm	burial

Plural affix

- In two cases, -mV- is infixes;

dìdùn tídúmùn knee

dìsín tìsìminìn loan

- The origin of infixing is likely to a process of 'affix resurrection', whereby a frozen plural suffix is resuffixed without the original being analysed as part of the stem, making it appear productive.

Plural affixes –a and -I

- Tula has vowel suffixes –a and –I.

dìnr tnrá 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.

bén bēni tongue

bìnè bini granary

bùkè bukí bead

bwèl bwéli mouse

Plural affix –I

- Where –I follows a vowel it is assimilated to –y.

bwàmbè	bwàntibwéy	antelope
carko	cartukoy	okra
dwəkà	dwəkay	net (for carrying produce)
kàlta	kàltétay	cat
kənà	kənay	scorpion
kùlè	kùley	boil on skin

Demonstratives

- Tula demonstratives show partial concord with the nouns they qualify. There is a rough semantic link between the pairings of demonstratives and nouns, but as the examples below show, there are many exceptions and crucially, many affixes which are not reflected in demonstratives.

this	these	category
wù	bə̀bù	human beings
wù	yìyù	animals, fish
dèdù	tétù	inanimates
kəkù	yìyù	plants

Numeral agreement

- Tula numerals divide into two sets, those applied to plants and those applied to all other nouns. Numerals one to seven have different forms when qualifying plants

Number	Persons, stones, animals	Plants
one	wîin	kîin
two	yúràw	túràw
three	yítà	tətâ
four	yánà	táànà
five	yúnù	túùnù
six	yúrùkùn	turùkùn
seven	yídìbìn	tidìbìn

Conclusions

- kiTule noun classes are in extreme disarray, due to breakdown without re-analysis and simplification.
- The tones and vowel harmony processes are not yet fully understood
- Other languages in the group, such as Yebu have gone much further along this path
- Rational orthographies can only be developed with better descriptions of this type..

THANKS

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