

**kiTulε**  
**noun-class morphology**

**Adamawa Konferenz**

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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, traces and fossil morphology exist
- However, in Gur, Kru and Adamawa the dominant pattern is suffixes
- Cognates between the prefixes and suffixes show that affixes can switch position as Greenberg argued long ago

# Noun-class affixes in Niger-Congo II

- 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
- 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 kiTulɛ, a language which presents an extreme case of such a transition and in addition has rare infixal nominal affixes

# Tula background

- The work described here was carried out 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.
- Spoken by about 50,000 people about 20 km NE of Billiri, which is SE of Gombe town, in Gombe State, east-central Nigeria
- 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

# Tula-Waja

- Tula-Waja is a long-established group
- Yet it can be surprisingly lexically diverse even for common nouns
- And its internal classification is far from settled

WA

TW

TB

TY

YE

BA

DA

MA

CA

CA<sub>m</sub>

TS<sub>s</sub>

TS<sub>b</sub>

TS<sub>g</sub>

moon

pwalao

swaāj / swar(i)

swa / swarto

cwoŋ / cwoŋan

beteré

cwiya̋k

bwaala

téré

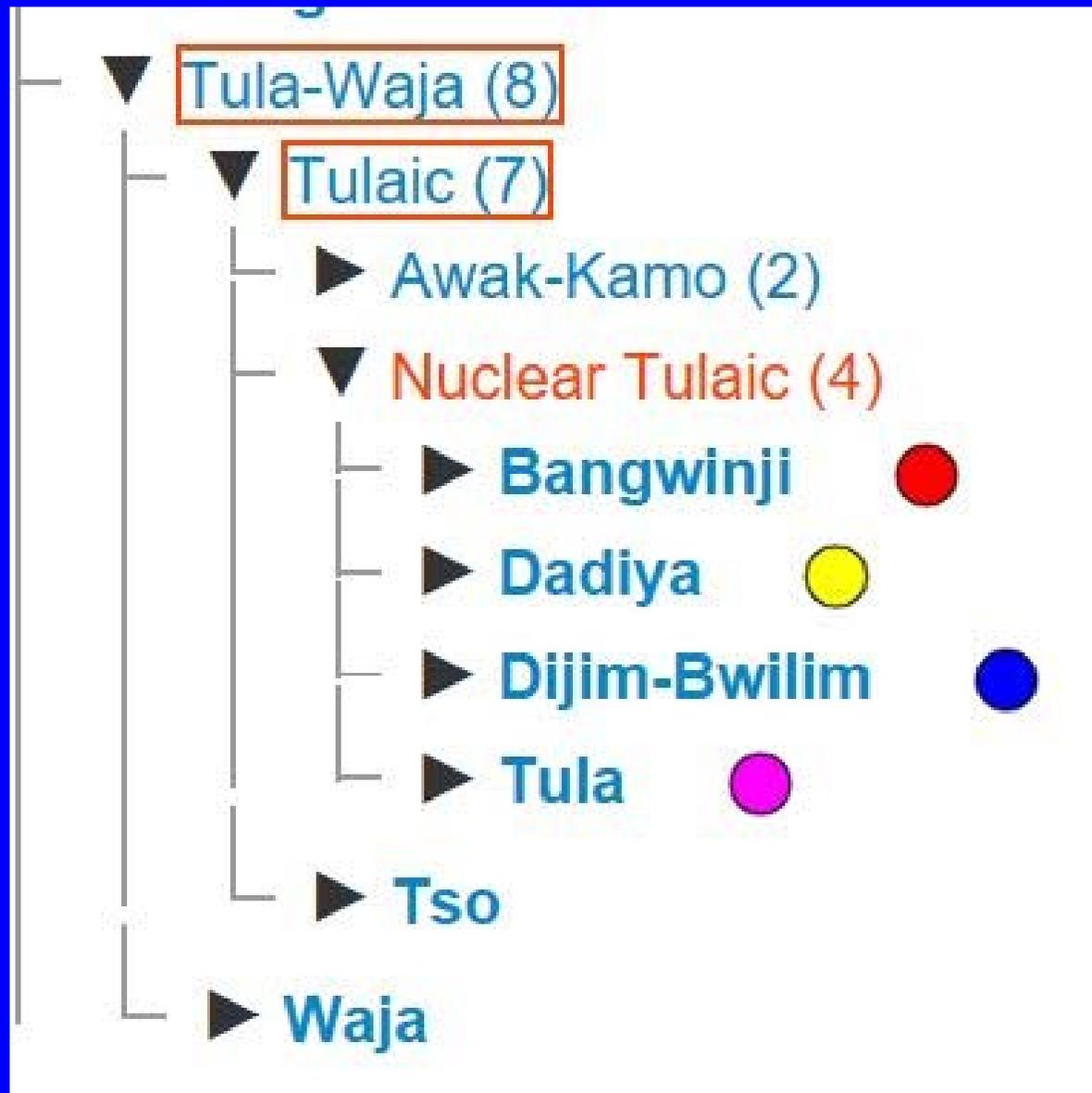
swaŋ, soŋ. / swaŋər, soŋər

nyirá / nyirátóú

nyerá

nyirá / nyirátóú

# Tula-Waja according to Glottolog



# Tula from space



# Tula background II

- However, the existing orthography also does not represent the vowels well and does not use tone
- There are three dialects;
  - Tula of Wange
  - Tula of Baule
  - Tula of Yiri
- the Tula Yiri dialect was chosen for orthography development

# Consonants

	Bilabial	Labio-dental	Alveolar	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

# Tula phonology

- 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

# 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

ˈ

Unmarked

ˋ

ˊ

ˆ

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.

# 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-

kə́bàŋ	tə̀baŋri	hill
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kə̀dɪŋ	tə̀dɪŋrì	platform
--------	----------	----------

kə̀dwakɔ	tə̀dwákéřì	rope
----------	------------	------

- in words such as;

kə̀kàŋ	tə̀kàŋrì	handle
--------	----------	--------

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

kidike	kidiketi	bat
--------	----------	-----

kifíkú	tìfìkìrì	clan
--------	----------	------

# Singular affixes

- The prefix dɪ- appears in alternation with tɪ-

dìbél      tɪbəlɪn      skin

díkêl      tíkèlí      bow

díkulan      tíkùlàni      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

bèràŋ	bèrèn	locust-bean cakes
bìyàŋ	bértu	arrow
dùwàŋ	dùì	locust bean tree
fəlónŋ	fəlí	hand
kìsàŋŋ	kìsàŋi	cactus

- Words such as;

kèràŋé      kèràŋéti      centipede

- probably incorporate frozen -VN nasal affixes

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

ṭikwébi

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 **-ti** where **I** is **i/i**.

acá	acátí	purse
bε	beti	young animal
kàár	kàárti	pieb crow
bwè	bwètì	something kept aside for a special purpose
côŋ	cóŋtì	mosquito

A common allomorph of **-ti** is **-tU**, where **U** is **u/u**

dur	dútú	head
fòr	fótú	place covered in thick grass
kár	kátú	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	bɛtətɪɪ	small stick
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bèkwàmì	bétókwántì	small ram
---------	------------	-----------

bèwɔ̀ɛ	bétiwɔ̀ɪ	finger
--------	----------	--------

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.

dìbəl	tìbəlɪn	skin
-------	---------	------

dìkəl	tìkəlì	bow
-------	--------	-----

díkulan	tíkùlàni	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	təféékərɪ	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	bùràni	corner, angle of s.t.
fùrà	furani	corner of the house
kaŋlo	kaŋloni	deserted settlement
kè	keni	borrow-pit

# Plural affix –nI is found across the group

-nI appears to be relatively conservative for the whole group

WA

foot

naawò

TW

nààŋ / naani; wanàŋ / wanani

TB

nà / naani

TY

naŋ / nani; waana

YE

náa

BA

náá / náani

DA

náá; twam naa

MA

náá

CA

naa / naati

CAm

naà / naani

TSs

na / nani

TSb

naà / naani

TSg

# 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

- but a –bU suffix is applied only to + human nouns;

dín      dímbi      name

dír      dìbbù      fool

naye      nàtəbu      women

ně      nɛbɯ      mother

sèlè      sɛlɔbɯ      elder

tě      tɛbɯ      father

tùkè      tɛkɛbu      grandfather

fàkwàrè      fàkwàrbú      enemy

**bU is common to the group but –bl seems to be innovated by Tula**

	person	neck
WA	person	neck
WA	nerè	kwit
TW	nii / nəbu	kwir / kwibi
TB	nii / nabu	kwir, kwir / kwibi
TY	nii / nəbo	kwil / kwiwi
YE	nii / nəbó	myá
BA	nii / nób, nəbó; nii firí / fit	kwit
DA	ni fiili / ni fiitum	kwil
MA	dərə / nəbi	kwir
CA	nii / nib	kwir / kwite
CAM		
TSs	ner / nébáú, nébou	gywáli / gywáltu
TSb	ner / nəbó, nobó	jwell / jwáltò (jwól)
TSg	ner / nəbó, nəbóú	ky`ur / ky`utóú

## 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 –nɪ, rather than simply eroded forms. Examples of the –n suffix are as follows;

bùràṅ	bùròn	sickness
cùn	cùṅin	hunger
cóṅ	cóṅín	nose
dəsɪr	təsìrà̀n	greeting

- -m suffixes are as follows;

bwékíná	bwébóknam	maternal uncle
bwélé	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 tɪnóra 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 bɛnɪ tongue

bìnɛ̀ bɪnɪ granary

bùkè̀ bʊkɪ bead

bwə̀l bwɔ̀lɪ 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	kàltətay	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.

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

# Numeral agreement

- Tula qualifying 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

- Presumably this is a harmony prefix which relates to a tV class for trees, although that no longer exists in Tula

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 of regularising and simplifying affix alternations

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