

Handout 02

OVERVIEW OF BADE/NGIZIM OF PHONOLOGY

Schuh (n.d., a)
Schuh (1971b)
Schuh (1971c) [section on Ngizim vowels]

COMPOSITE TABLE OF BADE/NGIZIM CONSONANTAL SEGMENTS

	labial	alveolar	(alveo)palatal	lateral	velar	lab. velar	laryngeal	lab. laryngeal
voiceless stop	p	t	tʃ		k	k ^w		
voiced stop	b	d	dʒ		g	g ^w		
glot. stop	ɸ	ɗ	ɗʸ/'y					
prenas. stop	m̂b	n̂d	n̂dʒ		ŋg	ŋg ^w		
voiceless fricative	f	s	ʃ	ɬ			h	h ^w
voiced fricative	v	z	ʒ	ɮ			ɦ	ɦ ^w
nasal	m	n	ɲ		(ŋ)			
flap		ɾ						
tap/trill		r						
lateral				l				
glide			y			w		

This table lists all the consonantal segments that exist in any of the speech varieties of the Bade/ Ngizim group. It is, in effect, the consonant inventory of proto-Bade/ Ngizim, but because of historical mergers, no modern speech variety of this group has the full inventory. In the table, I have used the IPA symbols in order to avoid ambiguous interpretation. Standard Chadic practice uses the representations below, which are the ones that I will use in examples. In cases where a digraph C₁C₂ represents a single sound, C₁ and C₂ could never appear as a sequence of individual sounds in these languages.

- [tʃ] → c
- [dʒ] → j
- [ʃ] → sh
- [ʒ] → zh

[ɬ] → tɬ

[k] → dl or jl

[fɪ] → gh

[ŋ]+velar → n+velar (no Chadic language allows a sequence of alveolar [n]+velar)

[C^w], [C^y] → C^w, C^y

[ɽ] vs. [r]: Works on Hausa general represent these as “r” vs. “ř” respectively inasmuch as [ɽ] is the “native” rhotic of Hausa and is far more frequent than the tap/trill [r]. Where it is important to make clear which rhotic is involved, I will write “ɽ” and “ř” respectively.

“Laryngeals”

Western Bade, Southern Bade: preserve laryngeals

Gashua Bade: (usually) *h > k, *fi > g

Ngizim, Duwai: (usually) *h > k, *fi > g / #___; *h,*fi > w (> Ø) / V___V

Though no speech variety of Bade/Ngizim has velar fricatives, the laryngeals [h] and [fi] should probably be reconstructed as *x and *ɣ (with a parallel comment for the labialized counterparts). Several facts support this.

- System symmetry: Reconstructed velar fricatives fill out gaps in the table and remove the “orphan” laryngeal column. NOTE: **Glottal stop** plays no role, even a sub-phonemic one, in the Bade/Ngizim group. No words contain internal glottal stops, even loanwords where the source language has a glottal stop, e.g. Western Bade *sàriyan* ‘trial’ < Hausa *shàři’â* < Arabic. One occasionally hears a glottal stop in vowel hiatus, but the normal resolution of vowel hiatus is elision or coalescence. There would thus be no glottal stop to add symmetry to the laryngeal column.
- Sound change: Though Duwai, Ngizim, and Gashua Bade have [h] in a few loanwords and phonaesthetic items, e.g. D/Ng/GB *hêr* ‘kindness’ < Arabic via Kanuri, D/GB *hâm* ‘yawning’, only Western and Southern Bade have [h] and [fi] in native words. Word initially, WB *h* corresponds to *k* and *fi* to *g* in Gashua Bade and usually also in Ngizim and Duwai, suggesting a simple shift from fricative to stop. The velar articulation may have always been weak, however. Medial WB laryngeals usually correspond to velar stops in GB, but to medial glides in Ngizim and Duwai:

W. Bade	G. Bade	Ngizim	Duwai	
<i>hərà</i>	<i>kəlà</i>	<i>kāràrà</i>	<i>kārà</i>	‘new’
<i>ɖùhwìyān</i>	<i>ɖùkwai</i>	<i>ɖūyâk</i>	<i>ɖùwai</i>	‘metal’
<i>ghau</i>	<i>gau</i>	-----	<i>gǒ</i>	‘open’
<i>ərbàghu</i>	<i>əlbàgu</i>	<i>rəbgu</i>	?	‘cave in’

- Morphological alternation: The reconstructable Bade/Ngizim genitive linker is **-k**. In Bade, this morpheme has several allomorphs, one of which is Ø before a velar consonant. This is the allomorph before [h] and [fi] in the dialects that preserve laryngeals:

WB: *əzgərə hurgùmən* ‘foot-of aardvark’
 cf. *əzgərə-k sangùràrin* ‘foot-of stork’

Labialized velars

Probably dating from proto-Chadic, the Bade/Ngizim group has a full series of labialized velars. They many serve not only as syllable onsets but as preconsonantal syllable codas (though syllable final ***gw** has often weakened to **w**). They cannot serve as word final syllable codas.

Western Bade	Gashua Bade	Ngizim	
ràkwsu	làkwsu	ɽùksu /ɽəkwsu/	‘push fuel into fire’
âgwren	âulai	-----	‘hare’
-----	-----	agwdâfu	‘ <i>Detarium senegalense</i> ’

Recording of Ngizim syllable final labialized velars.

/w/ as a “velar”

The glide **w** is in the velar column. Newman (2000), at several points, calls for classifying **w** as a velar in Hausa as well. In Bade, one reason for this classification is the fact genitive linker /k/, noted above under laryngeals, has a \emptyset allomorph before **w**.

WB: sīlə wunājān ‘bone-of dog’
cf. silə-k dītōn ‘bone-of bird’

Alveopalatals

All the Bade/Ngizim languages have apparently native words with alveopalatal affricates, palatal glottals [ɖʏ] or [ʏ], and palatal nasal.

Western Bade	Gashua Bade	Ngizim	
càkwɬlu	càkwɬlu	càkwɬu	B ‘poke in ribs’ Ng ‘peck’ hen
jān	jǎ	jǎ	‘dog’
ɖyāwu	ʏyāwu	ʏyāwu	‘give birth’
nyəmən	nyim	nyùm	‘filth’

Ngizim and Duwai have an active process that palatalizes all alveolars other than rhotics and laterals before **-i** in certain morphological environments.

Duwai			Ngizim		
Perfective	Subjunctive		Perfective	Imperative	
əfto	àfci	‘lie down’	rəptu	a-rəpci	‘open’
kādo	kāji	‘bite’	zidu	à-ziji	‘slaughter’
kīdo	kīʏi	‘eat meat’	kīđu	à-kīʏi	‘eat meat’
māso	māshi	‘buy’	kāsu	à-kāshi	‘sweep’
tūzo	tūzhi	‘tip to pour’	bəzu	a-bəzhi	‘leave’
wāno	wānyī	‘milk’	tānu	à-tānyī	‘remember’

Bade (all dialects) on the other hand, not only does not have any active palatalization processes (cf. WB **dō** ‘remove’ [perfective], **dī** ‘remove’ [subjunctive]), but it has Depalatalized all originally alveopalatal fricatives, including those in loanwords where the source language has alveopalatals.

Western Bade	Gashua Bade	Ngizim	
sâidan	sâidà	shaidà	'evidence' < Arabic via Hausa or Kanuri
son	vək sau	shau	'excrement' GB 'toilet' ("hole for excrement")
zēnān	?	zhānyi	'gourd ladle' cf. Kanuri jēnyi
ziyān	ziyà	zhà	'war'

Prenasalized stops

Ngizim: Ngizim has word initial prenasalized voiced stops. Intervocally, however, **nasal+voiced stop** patterns as a sequence, with the nasal forming a syllable coda and the stop a syllable onset. This is evident in noun plurals involving reduplication of the last consonant, where only the stop following a nasal is reduplicated:

kambi pl. **kambabin** 'small calabash for grain storage'
bangâi pl. **bangagîn** 'baboon'

Bade: Bade has no prenasalized consonants. Word initial nasals before homorganic stops are pronounced as syllabic nasals. This is true even of words from Kanuri with initial prenasalized consonants.

Kanuri	W. Bade	G. Bade	Ngizim	
bana	m̄bānān	m̄bānâ	bāna	'help' (noun)
-----	-----	-----	m̄bāsu	'sit'
-----	cf. m̄dan	nda	ndà	'people'
ndəwu 'knot'	ndəpu	-----	-----	'tie knot'
-----	ñjəvu	ñjəvu	-----	'jump down'
ṅgal-jìn	ṅgàltu	ṅgàltu	ṅgàltu	'measure'

While /ng/ is fairly common word initial in both Bade and Ngizim, /mb/ is not common in either language. In Ngizim, /nd/ seems fairly common, but I have found only two Western Bade roots with initial /nd/ not identified as borrowings, and the only root in Gashua Bade of any kind beginning in /nd/ is the "person/people" root. Ngizim has no /nj/ initial words, and the only root with /nj/ in Bade is the one shown in the table. Strangely, Bade has sometimes added a nasal onset to a voiced obstruent in loanwords where the source language did not have one, as in 'help' above or WB ñjādān 'peanuts' < Hausa gyàdā.

Liquids

Ngizim, Duwai: preserve all liquids, probably in more or less inherited distribution

Gashua Bade: (almost always) *ɽ > l; original ɽ̄ and l retained

Western Bade, Southern Bade: *ɽ > ɽ̄ with no exceptions; original l retained

Proto-West Chadic had three liquid segments: [ɽ, r, l]. They are preserved in Hausa (West Chadic A) and in Ngizim, Duwai, and Gashua Bade (Bade/Ngizim group of West Chadic B). Most West Chadic languages of both the A and B subgroups, including some Hausa dialects and Bade dialects other than the Gashua dialect, have merged the two rhotics

to the tap/trill [r]. The distribution of the three liquids was/is not equal in the ancestral language:

- [ɽ] was/is the most freely occurring liquid in native words—in Ngizim and Duwai, this sound occurs prevocally both word initial and word medial; it occurs word final and preconsonantal except as noted under [r] below. In Gashua Bade, *ɽ > l, though an unexplained small residue of [ɽ] in native words remains, e.g. GB *səɽən* ‘two’—cf. Ngizim *shiɽin*, WB *səɽən*. GB also uses [ɽ] in loanwords where the source language has phonetic [ɽ].

Ngizim	Gashua Bade	Western Bade	
ɽàkənu	lākənu	ɽākənu	‘walk, travel’
kuɽu	kùlu	kùɽu	‘refuse’
kàɽmu	kàlmu	kàɽmu	‘chop’
zəgəɽ	əzgəl	əzgəɽən	‘foot, leg’
-----	ɽiwà	ɽipan	‘carriage’ < Kanuri [liwà]

- [r] has/had restricted distribution. By and large, Hausa shares these distributional characteristics.

[r] occurs to the exclusion of [ɽ] in /___(ə)t/d/d̥/tl/dl/n and in / tə/də/də ___

Ngizim	Gashua Bade	Western Bade	
pəɽtu	pəɽtu	pəɽtu	‘postpone, renege’
vəɽd̥a	vəɽd̥a	vəɽd̥an	‘newly ripe millet’
akuɽnà	akuɽnà	akuɽnān	‘gruel’
ɽədlu	ɽjlu	ɽəjlu (intr.)	‘moisten’
təɽa	təɽa	təlān !?	‘moon’
dəɽau	dəɽu	dəɽu	‘wait for’; (WB) ‘wait for well to fill’

[r] is typical in presumably native “expressive” words, such as ideophones or verbs expressing violent or sudden action.

Ngizim	Gashua Bade
(gàɽə-ngəɽi) ɽùb̥b̥à ‘(he grew old) “dodderingly”’	(və lawà i) zàɽzàɽa ‘(it’s running) “drizzle-drizzle”’
ɽàb̥u ‘knock down with a blow’	gəɽgəɽtu ‘wake up with a start’

[r] is retained in loanwords where the source language has [r].

Kanuri	W. Bade	G. Bade	Ngizim	
raŋ-ngin	ràktu	ɽàktu	ɽàktu	‘tolerate’
bərbəɽ	bərbəɽən	bəɽbəɽ	bəɽbəɽ	‘dust’

Ngizim recording contrasting [ɽ] and [r].

- [l] has/had special distribution. In Gashua Bade, l is the regular historical reflex of *ɾ (see examples above). Though l does show up in a few apparently native roots, e.g. WB/GB **làgu** ‘stop, remain standing’, WB **lākì** ‘small’, most instances of l fall into one of the following categories:

Loanwords

Kanuri	W. Bade	G. Bade	Ngizim	
lambo	lambón	lâmbau	làmbò	‘one’s concern’
kàlewà	kàlapiyán	kàlāpiyà	kàlappiyâ	‘good health’

Ideophones

Western Bade	Gashua Bade	Ngizim	
ləppà	ləppà	cognate?	‘very early’
lai = layyà	cognate?	layi(-layi)	‘cool’
ngwèllà	cognate?	ngwàl	‘peeking’
cognate?	laulawà	laulau	‘thin, watery’

Dissimilation of n → l where a nasal comes later in the word

Ngizim **lèmu** = **nèmu** ‘build’

Western Bade **əlmiyu** ‘flood’; cf. Ngizim **nèmiyu**

Some consonant cooccurrence restrictions

I have not yet carefully studied consonant cooccurrence restrictions in the Bade/Ngizim group, but some have emerged. These seem to be shared with other West Chadic languages.

Glottalized consonants: Unlike glottalized consonants may not cooccur in a root. Like glottalized consonants seem to cooccur only in reduplications, e.g. GB **fàfəlu** ‘peel’, **fàdʔəmu** ‘repair’, **fyaɗya** ‘key’.

Labials: Unlike labial consonants may not cooccur in a root, i.e. ***b...p**, ***p...f**, etc. Like labials seem to appear only in reduplications, though this claim may be circular, e.g. is WB **fəfon** ‘breast’ a reduplicant or a real case of cooccurrence of like labials? Note that this cooccurrence restriction is not a PHONETIC restriction. Unlike labials do cooccur in words such as WB **pəbətən** ‘ashes’ (cf. Bole **bùto**) or **fàviyu** ‘singe’. These ARE reduplicants. Reduplication resulted in a sequence [+voice, -sonorant]... [+voice, -sonorant], in which the first segment devoiced by a regular dissimilatory change in Bade. Note that the opposite configuration, e.g. ***b...p**, ***f...v**, is non-existent in any word.

Velars: Cooccurrence of unlike velars (including velars and laryngeals) is not common, i.e. there are at most two or three non-reduplicated, non-derived, non-borrowed words containing unlike velars in data available to me from any of the languages. However, the paired velars in words like GB **kugú** ‘snake’ (WB **kuwān**) or WB **hurgùmən** ‘aardvark’ seem to have no explanation in reduplication, derivation, or borrowing. As with labials, if there is a (weak?) cooccurrence restriction on unlike velars, it is not a PHONETIC one. There are reduplicants such as WB **kàgdu** ‘cut off (several)’ < ***gàgdu** via the sound change mentioned under labials, and Bade/Ngizim has a participial prefix that can be added

to any root, including roots with initial velars or laryngeals, e.g. WB **gàkurá** ‘displease’ < **kùru** ‘dislike’, **gèhàdǎ** ‘dried up’ < **hàdǎwu** ‘dry up’.

Alveolars: There are no obvious cooccurrence restrictions on alveolars within a word. Examples are from Western Bade.

àdàtən	‘intestines’	tùzu	‘pour out by tipping container’
èstək̄wu	‘untie’	d̄iton	‘bird’
tàsu	‘find’	səd̄gwu	‘budge’
èzdù	‘six’	d̄úgzə dán	‘eyebrow’ (“?-of eye”)

VOWELS OF BADE/NGIZIM

		Front	Central	Back
High	Short	i	ə [i]	u
	Long	ī		ū
Mid	Long	ē		ō
Low	Short		a	
	Long		ā	

Diphthongs: ai, au

Vowel length

High and Low vowels in Bade and Ngizim have distinctive length except in word final position, where all vowels are short with the exception of a few grammatical items such as pronouns and determiners, mostly monosyllabic. Unlike most Chadic languages, Bade and Ngizim allow long vowels in closed syllables. I have the sense that the appearance of long vowels in closed syllables is not entirely unconstrained (maybe because I am so accustomed to exclusion of long vowels from closed syllables in other languages), but I have found no obvious constraining factors. The phonetics of vowels in closed syllables deserves investigation. In open syllables, there is a clear distinction in both duration and quality between short and long vowels. In closed syllables, the main indicator of “length” seems to be quality. I do not know whether closed syllables also show durational differences. Examples in the table are from Western Bade. The other dialects and languages have similar distinctions in cognate or other items. See discussion of “Vowel distribution” below for absence of a phonetic [i] vs. [ī] contrast.

Short vowel		Long vowel	
d̄àsu	‘be finished’	d̄ās̄u	‘pour into bottle’
amón	‘arm’	āmón	‘water’
ràktu	‘tolerate’	rāktu	‘compress’
māngān	‘friend’	Māngān	‘Manga person’
tànəmən	‘watercourse’	tīnān	‘place’
gùran	‘jealousy’	gūrān	‘girdle, bracelet’

Western Bade has a systematic distinction of nominal gender marking between **-ān** masculine and **-an** feminine, e.g. **māngān** ‘male friend’, **māngan** ‘female friend’.

Recording contrasting long and short vowels in closed syllables.

Contrast and neutralization of short high vowels

Prepausal: The short high vowel ə [i] does not appear before pause. The short high vowels i and u are in contrast word final before pause. In lexical roots, the word final i/u distinction bears a very low functional load, but it is possible to find word sets like those below from Ngizim where a final high vowel or absence of a vowel is not predictable.

Final /i/		Final /u/		Final C	
gazabì	‘black kite’	gàbābù	‘billy goat’	gùzəp	‘slave’
kwāḃshi	‘head pad’	gāḃshu	‘ugly’	gùbəs	‘warthog’
nyàmi	‘fat’	kunāmu	‘deleb palm’	nyùm	‘filth’
gadāguri	‘syphilis’	dugùru	‘barren woman’	zəgər	‘foot’
zàyi	‘rope’	kwàyu	‘jujube’	gùzai	‘pubic hair’

The verbal systems of all the languages provide systematic near minimal sets of all the short vowels before pause, such as in the following examples from Ngizim:

PERFECTIVE: vəru ‘he went out’
 IMPERATIVE: a-vəri ‘go out!’
 2ND SUBJUNCTIVE: dà vərə ‘he should go out’

Medial: In medial positions, including word final vowels in phrase medial position, the short high vowels do not contrast. Depending on local environment, they gravitate around the acoustic positions [i], [u], [ə]. The conditioning for vowel quality comes primarily from neighboring consonants, but the vowels and consonants of neighboring syllables may also exercise an influence.¹ An idealized description is as follows:

[+vocalic +high -long]	→	(1) [u] in the environment of [+round]
	→	(2) [i] in the environment of y and after /ɲ/ and /ɗʷ/
	→	(3) [ə] elsewhere

The examples here are from Western Bade, but similar sets could come from any of the speech varieties under consideration.

“Neutral”		Labializing”		Palatalizing	
kəru	‘steal’	kùru /kwəru/	‘refuse’	gìyin	‘climbing’
agəm	‘you (f.s.)’	gumà	‘ten’	bənyin	‘grinding stone’
həḏàwu	‘dry up’	wudón	‘knife’	ḏyirimma	‘fat’ (ideophone)
əkfu	‘enter’	ùktu /əkwtu/	‘pick up’	nìyu	‘swim’
təgvəḏu	‘push over’	tugwzàrān	‘sorcerer’	ariyon	a twining plant
ḏəhan	‘country’	dùwun	‘horse’	wāstiyán	‘sneezing’

In cases where environments (1) and (2) conflict, there is some indeterminacy. In Schuh (1971b), I state categorically that the following environment wins for Ngizim, as in

¹ NOTE ON HAUSA: As phonetically and phonologically different as the Bade/Ngizim languages appear to be from Hausa, the vowel distribution is nearly identical. The only real difference is that Hausa lacks a clear phonetic [i], and the short high vowels tend to be pulled to the front and back extremes of the high vowel space. Paul Newman and I have a long-standing disagreement on this, Newman arguing that the short high vowels contrasted fully in the not-too-distant past and still do to some extent, but I become more and more convinced of the correctness of my view, which is essentially that of the great Hausa specialist, F.W. Parsons, who was monumentally ignorant of the nature of any other Chadic language.

yùwan ‘sleep’ vs. **wiyàk** ‘vulva’, but in Schuh (n.d., a), in eight Western Bade examples of (1) preceding (2), I note that I recorded four with the preceding environment winning and four with the following environment, e.g. **kwìyu** /**kwə̀yu**/ ‘pack up’ vs. **kuyammà** /**kwə̀yammà**/ ‘splash!’ (ideophone). In Bade, (2) could never precede (1) in a root, but when the “definite article” **-w** is added to a word ending in **-yi**, the vowel invariably assimilates to the **-w**, e.g. **gìyi-w** → [gìyū].

As noted, the conditioning of short high vowels applies to word final vowels when they fall medial in a phrase. We can illustrate this with the 3rd person masculine and feminine pronouns:

aci ‘he’	[acə bə̀nu]	‘he cooked’
	[aci yā̀aye]	‘as for him’
	/aci ə̀kwu/ → [acukwú]	‘he pick (it) up’
atu ‘she’	[atə bə̀nu]	‘she cooked’
	[ati yā̀aye]	‘as for her’
	/atu ə̀kwu/ → [atukwú]	‘she picked (it) up’

Syllabic distribution of short high vowels

Except word finally, not only does environment determine the quality of short high vowels, but also position in words—in effect, all non-final short high vowels are epenthetic. This distributional property will be a topic later in the course.

Mid vowels

There is no length contrast in mid vowels in any of the speech varieties of Bade and Ngizim. In open syllables, mid vowels are long. Mid vowels can appear in closed syllables, as can other long vowels.

Mid vowels have a restricted distribution compared to other vowels. There are no words with word initial mid vowels in any language of the Bade/Ngizim group. In proto-Bade/Ngizim, and still in Gashua Bade and Ngizim, ORIGINAL mid vowels appear almost entirely in loanwords, in phonaesthetic words, and in certain grammatical formatives, where there has been sporadic monophthongization of diphthongs. (Western Bade has regularly shifted diphthongs to mid vowel monophthongs—see below.)

Gashua Bade		Ngizim	
řètu < Kanuri	‘separate’	řètu < Kanuri	‘separate’
pèřtu < Kanuri	‘spread mat’	pèřtu < Kanuri	‘spread mat’
m̀bòtu < Kanuri	‘be insufficient’	bōnè < Fulfulde	‘difficulty’
(no examples of GB ideophones with e)		ngulet	‘covered up’
mòlmòla	‘flashing’	ndandol	‘with a leap’
tlə̀nkōři	‘snoring’	dlə̀nkōř	‘snoring’
bè	‘thing’	mèn	‘indeed’
ta zə̀nècì	‘that he say <u>to</u> him’	na ramèci mǎ ...	‘I said <u>to</u> him that...’
gō	‘without’	sò = sàw	‘here it is’

Diphthongs

Proto-Bade/Ngizim had the diphthongs ***ai** and ***au**. Ngizim, Gashua Bade, and Western Bade have each treated these somewhat differently depending on language and environment.

Word initial

Western Bade, Gashua Bade, and Ngizim each have two or three words with initial **ai-** and initial **au-**. Though there are few words of this type in any of the languages, this has been a stable position—initial diphthongs have not undergone monophthongization processes found in other positions (see below).

Western Bade	Gashua Bade	Ngizim	
aikwán	aikwâk	aikwâk	‘finger’
aïson	(āyasà)	aïsău	‘sand’
audʼən	àudʼu	àudʼu	‘grave’
----	aunâ	aunâ	‘ashes used as flavoring’

Gashua Bade has developed additional initial **au-** diphthongs from ***ag-** / **___l** (< ***ɽ**), e.g. **aulamu** ‘dum palm’ (cf. Western Bade **gùràmə̀n**), **âulai** ‘hare’ (cf. Western Bade **âgùren**).

Word final:

- Ngizim preserves original final diphthongs and keeps them distinct from final mid vowels.

da kàtài ‘that he return’ (subjunctive ventive verb)

rakài ‘bed’

kàtau ‘(he) returned’ (perfective of class B verb)

àkau ‘back’

cf. loanwords with final mid vowels, e.g. **lambē** ‘need’, **kèkē** ‘bicycle’, **Àpənō** ‘Hausa person’, **gōrò** ‘kola’ (< Kanuri, or possibly Hausa in the cases of ‘bicycle’ and ‘kola’)

- Gashua Bade has preserved final diphthongs, but it has also changed original final mid vowels to diphthongs.

Native words: **mâmai** ‘you mother!’ [abusive expression] < /**mâma-i**/

lakâi ‘bed’

kàtau ‘(he) returned’

àkau ‘back’

Loanwords: **lâmbai** ‘need’ (< Kanuri **lambe**)

kèkai ‘bicycle’ (< Kanuri or Hausa **kèkē**)

Àpənau ‘Hausa person’ (< Kanuri **àfùno**)

gōràu ‘kola’ (< Kanuri or Hausa **gōrò**)

- Ngizim and Gashua Bade share a rule **ai, au** → **ī, ū** / **___#** when not phrase final. In Gashua Bade, this rule applies to all diphthongs, including those that derive from original mid vowels. Compare the following phrases with the citation forms above.

Ngizim	Gashua Bade	
rak̄̀ bai	lak̄̀ báí	‘it’s not a bed’
n̄̀ lambē bai	l̄̀mbīnī tamù?	Ng: ‘there’s no need’ GB: ‘it’s none of your business!’ (‘your need [is] what?’)
àkū-garâ	àkū-là	‘her back’
gōr̄̀ bai	gōr̄̀ bai	‘not kolas’

- Western Bade has shifted final diphthongs to corresponding mid vowels. It shares this change with Southern Bade, where it shows up more clearly as a WORD FINAL change. The citation form for common nouns in Western Bade, but not Southern Bade, always has an **-n** suffix, called “nunation”. This suffix does drop in what R. Lukas (1968) calls the “locative form”, providing an environment for word final mid vowels in nouns in Western Bade as well.

tê	‘who?’—cf. GB, Ngizim tài
mâmê!	‘your mother!’ [expression of abuse]—cf. GB mâmai < /mâma-a-ī/ ‘mother-of-you (m.s.)’
sâven	‘clearing bush’—verbal noun of sàvìyu ; cf. Ngizim zàbìyu , azabái
raken	‘bed’, nə vād ī skuṅ rakè ‘I lay on the bed’—cf. GB and Ngizim ‘bed’ above
kātō	‘(he) returned’—cf. GB and Ngizim ‘return’ above
m̄̀sō < /*m̄̀- s-a-w /	‘this one (m.s.)’—the hyphenated formatives show up in the determiner systems of the various Bade/Ngizim languages; the * -a-w shows up in its “purest” form as -āw in Gashua Bade, e.g. kwām-āw ‘this bull’
àkon	‘back’, nə taksə karen ī àkō ‘I tied the load on the back’—cf. GB and Ngizim above

Medial

The status of medial diphthongs, both historically and synchronically, is more complex than that of word initial and word final diphthongs. Comparing Bade and Ngizim, there are three basic configurations.

Western Bade	Gashua Bade	Ngizim	
(1) BOTH BADE AND NGIZIM HAVE HIGH VOWELS FROM ORIGINAL DIPHTHONGS.			
àlkítán = àlgétán	àrgítà	àlgítà	“oboe” (Kanuri àlgaità)
mīwán cf. men ‘mother’	mīwâ cf. mài ‘mother’	mīwà cf. mài ‘mother’	‘nursing mother’
s̄̀idu	s̄̀idu	z̄̀idu cf. VN zàyat	‘slaughter’
buwa < *bau-(w)a cf. zàutu (zàwatən) ‘have diarrhea’	buwâ < *bau-(w)a cf. zàutu (zàwat)	cf. bàu ----- cf. zàutu (zàwat)	‘red’ ‘loose stools from diarrhea’

(2) BADE HAS MID VOWEL (OR DIPHTHONG DIALECTALLY), NGIZIM HAS DIPHTHONG.			
(ĩđu)	(đĩyu)	yàĩđu cf. VN yàyad	‘wrap, twist’
---	---	yàiku cf. VN yàyak	‘rub to smooth’
gàunu cf. VN gawanón	gònu cf. VN gàwan	gàunu cf. VN gàwan	‘weave (mat)’
kàuyu	kòyu	kàuyu cf. VN kawai	‘fry’
vònu cf. VN vawanón	vònu cf. VN vawan	cf. Duwai vùno (VN àvgwan!)	‘cut off millet heads’
(varku)	(valku)	vàiku cf. VN vàyak	‘surround’
(sùwàràn)	sòlak	sàurak	‘in-law’
(3) BADE HAS MID VOWEL (OR DIPHTHONG DIALECTALLY), NGIZIM HAS HIGH VOWEL.			
nàutu = nòtu	nòtu	nùtu	‘pass’
vòtu	vòtu	vùtu	‘turn around/away’

This table omits diphthongs from sources other than inheritance. These include

- recent loanwords, e.g. WB wàinan ‘millet cake’ < Hausa, jaurò ‘a lot’ < Kanuri; GB àlàsainì ‘measuring bowl’ < ?; Ng mainà ‘prince’ < Kanuri, dauyâ ‘cassava’ < ?
- productive reduplicants, e.g. WB wàunu ‘spend several days’ < ùnu ‘spend the night’
- au < *agrV, e.g. GB làulu, Ng ràuru ‘call’ (cf. WB đâgùru), GB càufu ‘peck’ (cf. WB jàkùfu, Ng càkwfu)—see also word initial cases in Gashua Bade above
- miscellaneous contractions and metatheses, e.g. Ng jàunàk ‘elephant’ (cf. GB ñgìwànàk)—cf. also the form of word for ‘in-law’ in WB in the table

We can make some sense of this through a series of historical developments:

(a) **ai, au** → **ī, ū** / ___# ~ **phrase final**: This rule is reconstructable for the Bade/Ngizim group and is still productive in Duwai, Ngizim, and Gashua Bade, i.e. everywhere except Western (and Southern?) Bade. The early application of this rule is evident in group (1) in the table, where the root with monophthong became lexically dissociated from the base form with a diphthong, the result being that the long, high vowel monophthong shows up even in Western Bade.

(b) ***ai, *au** > **ē, ō** / C___C in Bade: This has been inherited in all Bade varieties, but not in Ngizim or Duwai (cf. Duwai nùto ‘pass’, with medial ū, as in Ngizim, not nòtu, with medial *au or with medial ō as in Bade). Historical diphthongs seem to be marginally retained in some subdialects of Western Bade.

(c) The fate of diphthongs in Ngizim: Ngizim has sometimes kept diphthongs, sometimes shifted them to high monophthongs. Roughly, those that have been RETAINED are those in words with a morpheme alternate that has an **a+glide+V** sequence. There are many Ngizim words with medial long high vowels. For most of these, there are no morpheme alternates and no comparative evidence to relate them to erstwhile diphthongs, e.g. vīdà ‘hare’ (cf. GB fīdà), b̀̀ku ‘lack’ (no known cognate in Bade), but for a few, such as those in group (3) in the table, Bade shows that the words probably originally had diphthongs. For Ngizim, then, these words seem to have had the same fate as those in group (1), with the diphthong succumbing to the rule in (a) above and being lexicalized as such.

Vowels in hiatus

Vowels frequently come into hiatus across word boundaries. Bade/Ngizim resolve hiatus by elision or coalescence. I have studied these processes most thoroughly for Western Bade. They would be similar for other Bade dialects. They would also be similar for Ngizim, though Ngizim has only a subset of the hiatus environments found in Bade. The table shows the outcomes of all possible vowel hiatuses in Western Bade, followed by examples. Cells representing non-occurring sequences are shaded.

	1 st ↓	2 nd →							
	ə-	i-	u-	ī-	ū-	a-	ā-	ē-	ō-
-ə	ə		u	ī	ū	a	ā		
-i	ə		u	ī	ū	a	ā		
-u	ə		u	ī	ū	a	ā		
-ī	ī		ī	ī	īu	iya	iyā		
-ū	see note on word final [ū] below								
-a	a		a	ē	au	a	ā		
-ā	ā		ā	āi	āu	ā	ā		
-ē	ē		ē	ē	eu	ē	e(y)ā		
-ō	ō		ō	o(y)ī	ou	ō	o(w)ā		

-ə ə-	/jè màsə əfcān/ → [jè màsəfcān]	‘we bought a mat’
-ə u-	/aci màsə ùgdān/ → [acə masùgdān/	‘he bought a gourd’
-ə ī-	/aci dèpsə ìgì/ → [acə dèpsìgì]	‘he hid it for you’
-ə ū-	/aci fəgə ùràkən/ → [acə fəgùràkən]	‘he followed a leopard’
-ə a-	/aci màsə akún/ → [acə masakún]	‘he bought a goat’
-ə ā-	/aci ùktə āmón/ → [acuktāmón]	‘he took water’
-i ə-	/dà masì əfcān/ → [dà masəfcān]	‘that he buy a mat’
-i u-	/dà masì ùgdān/ → [dà masùgdān]	‘that he buy a gourd’
-i ī-	/da dèpsì ìgì/ → [da dèpsìgì]	‘that he hide (it) for you’
-i ū-	/dà fəgì ùràkən/ → [dà fəgùràkən]	‘that he follow a leopard’
-i a-	/dà masì akún/ → [dà masakún]	‘that he buy a goat’
-i ā-	/dà ùkti āmón/ → [dàkwtāmón]	‘that he take water’
-u ə-	/atu əsfu/ → [atəsfú]	‘she swept’
-u u-	/atu ùktu/ → [atuktú]	‘she took’
-u ī-	/atu ìko/ → [atikó]	‘she saw’
-u ū-	/atu ùnu/ → [atūnú]	‘she spent the night’
-u a-	/atu à taksà/ → [atataksà]	‘she will tie’
-u ā-	/atu ā nàw/ → [atānàw]	‘she will count (them)’

-ī	ə-	/aci māsə īgì òfcān/ → [acə masīgìfcān]	‘he bought you a mat’
-ī	u-	/aci māsə īgì ùgdān/ → [acə masīgìgdān]	‘he bought you a gourd’
-ī	ī-	/aci kəḏa gī ì jərén/ → [acə kəḏa gījərén]	‘his testimony is better than yours’ (“he exceeds you as-to truth”)
-ī	ū-	/aci gāfa īgì ùràkən/ → [acə gāfēgìuràkən]	‘he caught you a leopard’ I find it impossible to tell, even after repeated listenings, whether the phonetic result of this combination is one or two syllables.
-ī	a-	/nə bārə īgì akún/ → [nə bārīgìyakun]	‘I gave you a goat’
-ī	ā-	/nə bārə īgì amón/ → [nə bārīgìyāmón]	‘I gave you water’
-ū	V-	There are no lexical long /-ū/ at the end of words. Word final [ū] does result from addition of the Previous Reference Marker ‘w to words ending in short high vowels, e.g. m̀s̀ì ‘husband’ + ‘w → [m̀s̀ū] ‘the husband’. With words ending in -a, the combination -a + ‘w does not become [o] as the true diphthong *au normally would in this dialect, e.g. daw ‘the eye’ vs. do ‘remove’ (cf. Ngizim d̄au ‘the eye’ and ‘remove’). I therefore take word final [ū] to be a vowel + glide rhyme /uw/ rather than a true vocalic nucleus /ū/.	
-a	ə-	/aci gāfa əktlan/ → [acə gāfaktlán]	‘he caught a cow’
-a	u-	/atu da ùgzì/ → [atə dagwzì]	‘that she return’
-a	ī-	/aci gāfa īgì/ → [acə gāfēgì]	‘he caught (it) for you’
		/d̄əla d̄àra jàga ì gājà/ → [d̄əla d̄àra jàgē gājà]	‘the jackal always comes to our place’
		/na bārə-k bē-tk-uwà ì sōbà/ → [na bārəg bētkuwē sōbà]	‘I will give our thing to (our) friend’s wife’
		/j̄ə əskàka ìwan pəm/ → [j̄əskàkēwan pəm]	‘we didn’t sleep’
		/à ìk-ī/ → [èkī] ²	‘look!’ (m.s. imperative)
-a	ū-	/aci gāfa ùràkən/ → [acə gāfaurakón]	‘he caught a leopard’
-a	a-	/aci gāfa āgwren/ → [acə gāfāgwren]	‘he caught a hare’
-a	ā-	/aci ùktàta amən pəm/ → [acuktātāmən pəm]	‘he didn’t take water’
-ā	ə-	/j-ā əskù/ → [jāskù]	‘we (excl.) are on top’
-ā	u-	/n-ā ùktà/ → [nākwà]	‘I will take’
-ā	ī-	/nə-ìkā iwà/ → [nikāiwà]	‘I saw for us (incl.)’
		/j̄à ìkì/ → [j̄àikì]	‘that we (excl.) see’
		/amà-ā-ī/ → [amái]	‘your wife’
-ā	a-	/nā àkō/ → [nākó]	‘I am behind’
-ā	ā-	/nā ànəm/ → [nānóm]	‘I am southward’

² Several verbs begin with long ī-. Of these, the verb ‘see’ is the only one that undergoes the predicted coalescence with -a to become [ē]. The others remain diphthongs, e.g. /d̄à ìḏi/ → [d̄àìḏi] ‘that he twist’. The historical explanation seems to be that the verb ‘see’ has always begun with [ī] whereas the other verbs originally began with *yi—cf. Ngizim ìkau ‘he saw’ but yàìḏu ‘wrap’ (Ngizim has only the historical pluractional form of the latter).

-ē ə-	/dà ùktē əfcān/ → [dàkwɛfcān]	‘that he bring a mat’
-ē u-	/dà ùktē ùgdān/ → [dàkwɛgwdān]	‘that he bring a gourd’
-ē ī-	/gà ùktē ī-wà akán/ → [gàkwɛwakān]	‘that you bring us fire’
	/jà əgvè ì kunu-k sərà/ → [jàgvè kunuk sərà]	‘and we fell in the well’
-ē ū-	/da gáfè ùràkən/ → [da gáfèuràkən]	‘that he catch a leopard’
-ē a-	/dà ùktē akún/ → [dàkwɛkún]	‘that he bring a goat’
	/sē akci dā dùkwì/ → [sēkci dā dùkwì]	‘then they heard’
-ê ā-	/dà ùktē āmón/ → [dàkwɛyāmón]	‘that he bring water’
-ō ə-	/no əbjlām na .../ → [nobjlām ma ...]	‘well the hyena said ...’
-ō u-	(no examples found)	
-ō ī-	/ā aiko ì rē-k mâbu-k bàcā-w/ → [aikō(y)ī rēŋ mâbug bàcāw]	‘he was looking to the place of the guy’s anus’
-ō ū-	/Kabò ùnu a ràn?/ → [Kabòunaràn?]	‘where did Kabo spend the night?’
-ō a-	/aci ju nò atu ma .../ → [acə jə nòtə ma ...]	‘when he went, she said ...’
	/tò à pàwē fà/ → [tòpàwē fà]	‘well come on down!’
-ō ā-	/əbjlām à rī nò à kunu-k sərà/ → [əbjlām à rī nò(w)ā kunuk sərà]	‘the hyena was there in the well’

A descriptive generalization of Bade vowel hiatus:

Vowel sonority: a, e, o > i, u, ə

- Like vowels contract to a single vowel, which is long if one of the vowels is long.
- A vowel elides a [-long] neighboring vowel of equal or less sonority.
- A more sonorous vowel followed by a [+long] less sonorous vowel forms a diphthong composed of the first vowel plus a high offglide; a subsidiary adjustment is /ai/ → [ē].
- [+long] vowels of equal sonority insert a high glide corresponding to the first vowel between the vowels. [This is a rough generalization. It is not always obvious that there are two syllables as opposed to a single vocalic nucleus with a transition.]

TONES OF BADE/NGIZIM

Like all Chadic languages, languages of the Bade/Ngizim group are tone languages. Some general feature of Bade/Ngizim tones are the following:

- TWO LEVEL TONES AND DOWNDRIFT INTONATION
- EXTENSIVE INTERACTION OF CONSONANT TYPES AND TONE (in both local phonetically induced alternations and in morphologically conditioned tone patterns—we will discuss this in detail later)
- LOW FUNCTIONAL LOAD OF TONE (there are very few words lexically distinguished only by tone, locally conditioned tonal processes result in massive phonetic neutralization of tonal differences, and morphological processes where tone plays a role virtually all are distinct segmentally as well as tonally)

I use the following tone marking conventions. Example words are from Gashua Bade:

Unmarked for tone = Hi: **kūḏu** [ˉ ˉ] ‘tortoise’

Grave accent (˘) = Lo: **ùlāk** [˘ ˘] ‘leopard’

Acute accent (ˊ) = Downstepped Hi: **jājá** [ˉ ˉ] ‘thorn fence’

Circumflex accent (ˆ) = Falling: **âbu** [\ ˉ] ‘excrement’

Hachek (ˇ) = Rising: **jǎ** [/] ‘dog’

Because of downdrift intonation, a downdrifted Hi after a Lo sets a new Hi register for the phrase. Downdrifted Hi is unmarked, e.g. **bālu** [˘ ˉ] ‘uvula’. A downstepped Hi after Hi likewise sets a new Hi register, so only the Downstepped Hi that sets the new register is marked, e.g. **sìdɛŋ Káka** [˘ ˉ ˉ ˉ] ‘cut throat’ (a type of bird with a red neck, literally, “cutting-of God”).

Here are a few examples of lexical and morphological tonal contrasts from Gashua Bade:

ɛ̀g̀j̀i (LL)	‘thirst’	ɛ̀g̀j̀i (LH)	‘handle’
k̀ù̀ǹù̀ (LL)	‘forest’	k̀ù̀ǹù̀ (LH)	‘stomach’
d̀ɛ̀g̀à̀ (LL)	‘awl’	d̀ɛ̀g̀à̀ (HL)	‘platform’
k̀w̃ãr̃ñà (HL)	‘line’	k̀w̃ãr̃ña (HH)	‘jujube’
m̀ìỹa (LH)	‘mouth’	m̀ìỹá (HF)	‘100’

Tonal distinctions as a function of “tense”

j̀à̀n t̀áksu ‘we tied’ (perfective)
j̀à t̀áksáú ‘we will tie’ (imperfective)
j̀à t̀áksi ‘that we tie’ (subjunctive)

Tonal distinctions as a function of verb class

na d̀ɛ̀psau ‘I will hide it’
nà t̀áksáú ‘I will tie it’
nà t̀l̀ɔ̀ṽū ‘I will pierce it’
nà t̀ɛ̀ḏ̃ū ‘I will release it’

NOTE ON DISTRIBUTION OF CONTOUR TONES: **Falling tones**—whether lexical, intonationally induced, or the result of tonal assimilations—are fairly common. **Rising tones** are restricted to a few monosyllabic words beginning in modally voiced obstruents, such as **jǎ** ‘dog’, **vǎu** ‘shoot’ in GB and Ngizim and **ghǎn** ‘pied crow’ in WB.

Some problematic features of Bade/Ngizim tones that I have never achieved full understanding of. We will look at some of these issues later.

- **PHONOLOGICAL STATUS OF TONAL ALTERNATIONS:** To what extent are alternations conditioned by phonological phrasing? To what extent are the alternations purely phonetic assimilatory tendencies as opposed to true phonological changes (as symbolized, say, by autosegmental association lines)?
- **DOWNSTEP:** Do these languages have true downstepped highs? I often heard and transcribed downsteps, but I was never sure whether these were tonal or intonational (or even real changes in pitch at all as opposed to, say, a drop in amplitude).
- **CONTOUR TONES 1:** All these languages have both rising and falling contours (see the note on contour tones above). On heavy syllables these are often either clearly conditioned by the consonantal make up of the syllable or are clear cases of contraction of unlike tones onto one syllable. In other cases, like downstep, it isn’t clear whether contoured pitches are tonal or intonational patterns.
- **CONTOUR TONES 2:** Word final light syllables have three kinds of tones: **High**, **Low**, and **“Falling/Changing”**. High and Low behave as one expects, modulo conditioned alternations. “Falling/Changing” tones do not. First, this tone type appears only in the environment / H__#. Second, most “Falling/Changing” tones are on light syllables, yet it is more or less an article of faith in Chadic studies that Chadic languages have only

underlying level register tones, that contours always represent the contraction of unlike level tones onto one syllable, and that only heavy syllables can bear contours (each tone must be associated with a minimum of one mora). Third, though I often heard “Falling/Changing” tones with actual falling pitch, I heard them at least as often as simply Low. They differ from Low, however, in that they are always pronounced as High when medial in a phrase. In at least one morphological process, they also differ from Low, viz. in noun plurals.