

Tone in Bangime Nouns¹
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0. Introduction

0.1 Background

0.1.1 Language Overview

- The language Bangerime, or Bangime [bàngími], is spoken by seven villages located in the Bandiagara area of central-eastern Mali by an estimated 1200 (Lewis 2009) to 3000 (Blench & Dendo 2005a) speakers.
- Bangime is currently classified as Dogon, within the Niger-Congo branch (Gordon 2005), though due to its disparity of features and lexical items, Roger Blench, and I as well, considers it an isolate (Blench & Dendo 2005a, 2005b).
- A preliminary grammar sketch and lexicon are available at:
<http://www.dogonlanguages.org>

0.1.2 Methodology

- Data were collected from two native speakers of Bangime from June through August, 2008 and from May to August, 2009.
- Lexical items are listed in citation form unless otherwise noted.

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0.2 Purpose of the Study

To describe the tonal patterns within the noun phrase in Bangime, with special reference to tone classes, including the following items:

- Singular roots and plural noun stems
- Derivational suffixes
- Adjectives
- Numbers
- Possessors
- Determiners
- Complementizers
- Combinations of quantifiers

0.3 Overview of the Noun Phrase in Bangime

0.3.1 Tone on Nouns

- Syllable is TBU
- Three-tone system: L–H–0 opposition
- Direction of association is R → L
- Nouns are separated into four tonal classes

0.3.2 Nominal Suffixes

(1) Examples of Nominal Suffixes

	Gloss	Suffix	Example	Gloss	Translation
a.	Agentive :	-fij ⁿ ε	bùr ⁿ à-fijè ⁿ	medicine-AGENT	healer
b.	Habitant of :	-ma	bù ⁿ -má	Bounou-HAB	resident of Bounou
c.	Diminutive:	-mɪ ~ -yε ~ -ε	kòrógò-jè dórèè	basket-DIM bird (frozen suffix)	tiny basket bird
d.	Plural:	-nde, -ru	tùrè-ndè fijé-rú	hyena-PL grandmother-PL	hyenas grandmothers

0.3.3 Adjectives

0.3.3.1 Non-alternating Adjectives

(2) Examples of Non-alternating Adjectives

	Gloss	Adjective	Example	Gloss	Translation
a.	heavy	mènè	çúli mènè	stalk heavy	heavy stalk
b.	short	dèrèbé	çúli dèrèbé	stalk short	short stalk
c.	tall/long	béndé	çúli béndé	stalk long	long stalk

0.3.3.2 Alternating Adjectives

- A nominal verb changes to an adjectival participle by way of an [ATR] shift.
- The adjective 'big' shifts its [ATR] quality and displays a tonal alternation.

(3) Examples of Alternating Adjectives

	Gloss	Nominal verb	Participle
a.	white	símá	fijó ⁿ
b.	black	póóré	póóré
c.	big	bògò	bòr ⁿ ó ~ bó ⁿ ò

0.3.4 Morphosyntactic Structure of Noun Phrase

- Note the lack of agreement within the noun phrase:

(4) Number and Adjective

minà jùndò bòrⁿó
door two big
'two big door(s)'

(5) Ordering of Constituents

màá kùqè bùwè njjè mè mènè
1st SG POSS calabash red four COMP heavy
'my four red calabash(s) which (are) heavy'

(6) Complementizer

màà náá-jè mé pèⁿ
3rd SG POSS cow-DIM COMP many
'his/her tiny cow(s) which (are) many'

(7) Deixis

à kùⁿ káw
DET waist DISTAL
'the waist there'

1. Tone Class One: Tone Polarity

1.1 Underlying representations

- Citation form represents the underlying representation of the noun

(8) Examples of Class One nouns

	Noun	Gloss	Noun	Gloss
1)	low tone on root	ultimate mora		
a.	b ^w è	mosquito	d. gíjò ⁿ	shadow
b.	tèè	forge	e. tótò	anvil
c.	táw ⁿ ò	blacksmith	f. jùndò	two
2)	high tone on root	ultimate mora		
g.	ké	thing	j. kùwó	house
h.	tíf	Ronier	k. dúúgú	forest
i.	sí ⁿ	mongoose	l. bír ⁿ òndó ⁿ	corn

2.1 Singular/Plural

- Tone polarity is exemplified in the plural forms of nouns, as is shown in (9).²
- Note that the plural suffix /-ndɛ/ assumes the opposite tone of its respective root.

(9) Examples of Class One nouns with plural suffix

Syllable Structure	Singular	Plural	Gloss
(a) low tone on root ultimate mora ~ high tone on stem ultimate mora			
CV	a. b ^w ɛ̀	b ^w ɛ̀-ndé	mosquito
CVV	b. tɛ̀ɛ̀	tɛ̀ɛ̀-ndé	forge
CGV	c. tʷ ⁿ ɔ̀	tʷ ⁿ ɔ̀-ndé	blacksmith
CVCV	d. gíjɔ̀ ⁿ	gíjɔ̀ ⁿ -ndé	shadow
	e. tɔ̀tɔ̀	tɔ̀tɔ̀-ndé	anvil
CVVCNV	f. jìindò	jìindò-ndé	two
(b) high tone on root ultimate mora ~ low tone on stem ultimate mora			
CV	g. ké	ké-ndè	thing
CVV	h. tíí	tíí-ndè	older sibling
	i. síí ⁿ	síí-ndè	mongoose
	j. dúúgú	dúúgú-ndè	forest
CVCV	k. kùwó	kùwó-ndè	house
CVCVCV	l. bíròndó ⁿ	bíròndó-ndè	corn

2.2 Adjective 'big'

- There is no change on the tone of the noun.

(10) Examples of Class One nouns with adjective 'big' [bòrⁿó]

NOUN Big	UR
a. b ^w ɛ̀ bòr ⁿ ó	/b ^w ɛ̀/
b. tɔ̀tɔ̀ bòr ⁿ ó	/tɔ̀tɔ̀/
c. síí ⁿ bòr ⁿ ó	/síí ⁿ /
d. bíròndó ⁿ bòr ⁿ ó	/bíròndó ⁿ /

2.3 Summary of Class One Nouns

- Have no floating tone underlyingly
- Take a polar tone on the plural suffix
- Do not change their tone before the participle adjective 'big'
- Take the [bòrⁿó] allomorph of the participle adjective 'big'

2. Tone Class Two: Opposite Floating Tone

2.1 Underlying Representations

- Floating tone of opposite value of mora-final tone

(11) Examples of Class Two nouns

Noun	Gloss	Noun	Gloss
1) low tone on root ultimate mora, followed by high floating tone			
a. kù ⁿ ´	egg	d. gèḡgè´	metal
b. ḡhè´	rainy season	e. sòròḡò´	Bozo ethnicity
c. pòw ⁿ ´	meal	f. pùúpa´	bellows
2) high tone on root ultimate mora, followed by low floating tone			
g. bó ⁿ ̀	cream	j. p ^w óóké̀	soap
h. dè̀	cultivation	k. bóróḡkó̀	tied millet
i. níjá̀	mother	l. mìrò m páyá̀	bee hive

2.2 Singular/Plural

- Floating tone at end of each noun aligns right
- Remains floating in singular form
- Docks leftward to the toneless plural suffix

² The definition of tone polarity insists that the tone on the target syllable is underspecified. Hyman and Schuh (1974: 100) state, "Since it would be arbitrary to propose a specific underlying tone in the above cases, [referring to Margi] tonal polarity differs from tonal (or segmental) dissimilation, where one of two identical specified features dissimilates."

(12) Examples of Class Two nouns with plural suffix [-nde]

Syllable Structure	Singular	Plural	Gloss
(a) low tone on root ultimate mora ~ high tone on stem ultimate mora			
CV	a. kù ⁿ	kù-ndé	egg
CNV	b. ñhè	ñhè-ndé	rainy season
CVG	c. pów ⁿ	pów-ndé	meal
CVCV	d. gèngè	gèngè-ndé	metal
CVCVCV	e. sòròyò	sòròyò-ndé	Bozo ethnicity
CVVCV	f. pùúpà	pùúpà-ndé	bellows
(b) high tone on root ultimate mora ~ low tone on stem ultimate mora			
CV	g. bó ⁿ	bó-ndè	father
	h. dë	dë-ndè	cultivation
CVCV	i. nijá	nijá-ndè	mother
CVVCV	j. p ^w óóké	p ^w óóké-ndè	soap
CVCVCNV	k. bóróhkó	bóróhkó-ndè	tied millet
CVCV N CVCV	l. mìrò m páyá	mìrò m páyá-ndè	bee hive

2.3 Adjective 'big'

- The examples in (13) show that the alternate form of 'big' is used with Class Two nouns.
- The final mora of the noun's tone shifts to high if it is low and remains high if it is underlyingly high.

(13) Examples of Class Two nouns with allomorph of the adjective 'big' [bórⁿò]

NOUN Big	UR	NOUN Big	UR
a. kù ⁿ bór ⁿ ò	/kù ⁿ ˈ /	g. bó ⁿ bór ⁿ ò	/bó ⁿ ˈ /
b. ñhè bór ⁿ ò	/ñhè ˈ /	h. dë bór ⁿ ò	/dë ˈ /
c. pów ⁿ bór ⁿ ò	/pów ⁿ ˈ /	i. nijá bór ⁿ ò	/nijá ˈ /
d. gèngé bór ⁿ ò	/gèngé ˈ /	j. p ^w óóké bór ⁿ ò	/p ^w óóké ˈ /
e. sòròyó bór ⁿ ò	/sòròyó ˈ /	k. bóróhkó bór ⁿ ò	/bóróhkó ˈ /
f. pùúpá bór ⁿ ò	/pùúpá ˈ /	l. mìrò m páyá bór ⁿ ò	/mìrò m páyá ˈ /

- The underlying representation of the adjective 'big' is /bòrⁿoˈ ˈ /

pù ú pá bò r ⁿ oˈ ˈ	pù ú pa bó r ⁿ ò	pù ú pá bó r ⁿ ò
L H L H L H	L H L H L H	L H H L H

2.4 Summary of Class Two Nouns

- Have a floating tone at their right edge which is opposite to that of the root-final tone
- Keep their root-final tone in the plural stem while the floating tone aligns right and docks to the plural suffix
- Illustrate that the underlying form of the participle adjective 'big' is /bòrⁿoˈ ˈ /
- Behave differently from the other tone classes because of the interaction among the floating tones
- Note that none of the floating tones in Class Two is allowed to dock onto the noun in the singular or in the adjectival phrase.

3. Tone Class Three: Toneless Final Mora

3.1 Underlying Representations

- Final mora is toneless, followed by a floating tone

(14) Examples of Class Three nouns

Noun	Gloss	Noun	Gloss
1) toneless root ultimate mora, followed by low floating tone			
a. ɥe ˋ	water	d. pína ˋ	fear (n.)
b. dóo ˋ	paper	e. gèngèe ˋ	crocodile
c. kúɥe ˋ	calabash	f. ñàmbàra ˋ	sheep
2) toneless root ultimate mora, followed by high floating tone			
g. b ^w ò ˈ	field	j. záyèe ˈ	onion
h. kùrèe ˈ	dog	k. kúwóke ˈ	shoe
i. kò no ˈ	doorway	l. sárdiŋe ˈ	garden

3.2 Singular/Plural

- Floating tone aligns right and docks left in both singular and plural
- Final mora of root polarizes from final mora of stem in plural

(15) Examples of Class Three nouns with plural suffix [-ndè]

Syllable Structure	Singular	Plural	Gloss
(a) low tone on root ultimate mora ~ low tone on stem ultimate mora			
CV	a. ʉè	ʉé–ndè	water
CVV	b. dód	dód–ndè	paper
CVCV	c. kúʉè	kúʉé–ndè	calabash
CVCV	d. pínà	píná–ndè	fear (n.)
CVCNVV	e. gěŋgèè	gěŋgèé–ndè	crocodile
CVNCVCV	f. ñàmbàrà	ñàmbàrá–ndè	sheep
(b) high tone on root ultimate mora ~ high tone on stem ultimate mora			
CV	g. b ^w ö	b ^w ö–ndé	field
CVCV	h. kò nó	kò nò–ndé	doorway
CVCVV	i. kùrèé	kùrèè–ndé	dog
	j. záyèé	záyèè–ndé	onion
CVCVCV	k. kúwóké	kúwókè–ndé	shoe
	l. sárdìŋé	sárdìŋè–ndé	garden

3.3 Adjective ‘big’

- The examples in (16) show that the LH allomorph of ‘big’ is used with Class Three nouns.
- The final mora of the noun’s tone does not shift.³

(16) Examples of Class Three nouns with allomorph of the adjective ‘big’ [bòr^o]

NOUN Big	UR	NOUN Big	UR
a. ʉè bòr ^o	/ʉe ˘/	g. b ^w ö bòr ^o	/b ^w ö ˘/
b. dód bòr ^o	/dód ˘/	☆ h. kùrèè bòr ^o	/kùrèè ˘/
c. kúʉè bòr ^o	/kúʉe ˘/	i. kò nó bòr ^o	/kò nó ˘/
d. pínà bòr ^o	/pína ˘/	☆ j. záyèé bòr ^o	/záyèè ˘/
☆ e. gěŋgèé bòr ^o	/gěŋgèe ˘/	k. kúwóké bòr ^o	/kúwókè ˘/
f. ñàmbàrà bòr ^o	/ñàmbàrá ˘/	☆ l. sárdìŋè bòr ^o	/sárdìŋe ˘/

3.4 Summary of Class Three Nouns

- Have a floating tone at their right edge
- Final mora of the noun root is toneless
- Floating tone aligns right and docks left in both singular and plural
- Take the underlying form of the participle adjective ‘big’ with the melody linked

4. Tone Class Four: Melodic Class

4.1 Underlying representations

- Tonal melody is aligned at right edge and links/spreads R → L

(17) Examples of Class Four nouns

Noun Root			Noun Root		
PR	UR	Gloss	PR	UR	Gloss
a. [sî ⁿ]	/sii ⁿ ˘˘/	shade	d. [kórógò]	/korogo ˘˘/	donkey
b. [ʃ ^w fi]	/ʃ ^w ii ˘˘/	food	e. [kóróŋò]	/koronjo ˘˘/	basket
c. [pórò]	/poro ˘˘/	cloud	f. [zírìbè]	/zìribè ˘˘˘/	animal
g. [b ^w é]	/b ^w e ˘˘˘/	leg	j. [sèré]	/sere ˘˘˘/	harvest
h. [kî ⁿ]	/ku ⁿ ˘˘˘/	waist	k. [dámá]	/dama ˘˘˘/	pick axe
i. [míná]	/mina ˘˘˘/	door	l. [góòmpá]	/goompa ˘˘˘˘/	step

4.2 Singular/Plural

- Floating tonal melody aligns right and links/spreads left to right in both singular and plural

³ Except in starred cases which are either borrowings or involve the frozen animate suffix discussed above.

(18) Examples of Class Four nouns with plural suffix [-ndɛ]

Syllable Structure	Singular	Plural	Gloss
(a) low tone on root ultimate mora ~ low tone on stem ultimate mora			
CVV	a. sî ⁿ	sî ⁿ -ndɛ	shade
	b. ʃ ^w fi	ʃ ^w fi-ndɛ	food
CVCV	c. pórò	póró-ndɛ	cloud
CVCVCV	d. kóróḡò	kóróḡò-ndɛ	donkey
	e. kóróḡò	kóróḡò-ndɛ	basket
	f. zìrìbè	zìrìbè-ndɛ	animal
(b) high tone on root ultimate mora ~ high tone on stem ultimate mora			
CV	h. kǔ ⁿ	kǔ ⁿ -ndé	waist
CVCV	i. mìná	mìnà-ndé	door
	j. sèré	sèrè-ndé	harvest
	k. dàmá	dàmà-ndé	pick axe
CVVCNV	l. góòmpá	góòmpà-ndé	step

4.3 Examples of Class Four nouns with allomorph of the adjective 'big' [bórⁿò]

(19) Examples of Class Four nouns

NOUN Big	UR	NOUN Big	UR
a. sî ⁿ bór ⁿ ò	/sii ⁿ ˈ ˈ /	g. b ^w ɛ bór ⁿ ò	/b ^w ɛ ˈ ˈ /
b. ʃ ^w fi bór ⁿ ò	/ʃ ^w ii ˈ ˈ /	h. kǔ ⁿ bór ⁿ ò	/ku ⁿ ˈ ˈ /
c. pórò bór ⁿ ò	/poro ˈ ˈ /	i. mìná bór ⁿ ò	/mina ˈ ˈ /
d. kóróḡò bór ⁿ ò	/koroḡo ˈ ˈ /	j. sèré bór ⁿ ò	/sere ˈ ˈ /
e. kóróḡò bór ⁿ ò	/koroḡo ˈ ˈ /	k. dàmá bór ⁿ ò	/dama ˈ ˈ /
f. zìrìbè bór ⁿ ò	/ziriɓe ˈ ˈ /	l. góòmpá bór ⁿ ò	/goompa ˈ ˈ /

4.4 Summary of Class Four nouns

- Floating tonal melody aligns right and links/spreads left to right in both singular and plural
- Constraints which affect simple floating tones must differ from tonal melodies
- The floating tonal melody of the noun interacts with that of the adjective in a way which differs from that of Tone Class Two.

5. Conclusion

- Tone polarity is exhibited among nouns Bangime nouns, and differs from simple dissimilation. This fits with the most current definitions of the phenomenon (Hyman, 2007, p. 502; Yip, 2002, p. 159).
- Bangime has (at least) four tonal classes among nouns, based on evidence from the singular/plural and adjective 'big' interaction.
- The first tonal class contains nouns which have no floating tones.

b ^w ɛ	b ^w ɛ-ndé	leg
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- The second tonal class contains nouns which, in addition to underlyingly linked tones, have a floating tone which only attaches to an underlyingly toneless TBU.
- The third tonal class contains nouns which have a toneless final mora and a floating tone.
- The fourth tonal class contains nouns which are underlyingly toneless and receive a floating melody.
- The plural suffix is underlyingly toneless.
- All nouns in the language assign tone from right to left.
- All floating tones align to the right edge of the word.
- Rising tones are allowed to the exclusion of falling tones.
- Contour tones are only permitted at the left edge of a word.
- The number of marked processes which occur in the language is high, therefore, certain markedness constraints are ranked low in the language.

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