

CHARACTERISTICS OF OMOTIC TONE: SHINASHA (BORNA)

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The article provides some phonological background and outlines the tonal system of Shinasha (Borna), an isolated North Omotic language of Ethiopia. There are two contrasting tones. Their behaviour shows characteristics which have also been observed for other Omotic languages: stability of lexical tone, limited use of tone in the syntax, and absence of sandhi. The article provides new evidence that vowel quality can have a strong influence on the tonetic realisation: Shinasha is not the only Omotic language where high vowel quality is associated with extra high pitch.

0. Introduction

The Shinasha people are Ethiopian Orthodox Christians. Farming is their main occupation. They call themselves *Bora* [bòrá], and their language *Borna* [bòrná].¹ In the linguistic literature the term “*Shinasha*” rather than *Borna* has been established, and so it will be used in this paper. Occasionally the term *Bworo* has also been used in the past, but this form is rejected by our informants.

Shinasha is an isolated Omotic language spoken in the Metekel administrative region of the Gojjam province of Northern Ethiopia. It has been classified as part of the “North Gonga” subgroup of “North Omotic” languages [Fleming 1976:300], and as a member of the “Kefa Group”, along with Kefa/Mocha and Anfillo [Bender 1987:22, 30].

There are two varieties of Shinasha which are mutually intelligible. According to the speakers of the language, Shinasha is divided into *Worwi-Bora* and *Gayi-Bora*. *Worwi-Bora* (or *Tari-Bora*) “Lowland Shinasha” is mainly spoken in the lowlands of the districts Wembera, Dangur, Guba, and Dibate, whereas *Gayi-Bora*

¹In certain contexts, the forms *Boro* and *Borno* will also be used. Forms in -a are citation forms, those in -o are non-oblique masculine forms.

“Highland Shinasha” is mainly spoken in the highlands of the first three districts. The present study is based on data of the *Wembera* dialect as provided by the students Nasisa Wubete and Muluaem Bessie, for whose cheerful help and co-operation we want to express our appreciation.

Morphological and grammatical sketches of Shinasha have been written by Grottanelli [1941], Plazikowsky-Brauner [1950, 1970], Fleming [1975, 1976], and Fekadie Baye [1988]. A phonology of Shinasha was written in 1986 by Gabre Bizuneh at the Addis Abeba University. The structure of the NP in Shinasha, described under an X bar perspective, is the topic of the most recent study of this language [Ashenafi 1989]. However, a survey of the literature on Shinasha shows that so far there is no study on the role of tone.

1. Phonological Sketch

To provide sufficient background for the presentation of the tone system, a sketch of the Shinasha phonology will be given in this section. The transcription follows the IPA conventions as revised to 1989. Note the following: *d̥* stands for an implosive *d*, *p̥* *t̥* *c̥* and *k̥* are glottalized consonants, *c̥* standing for glottalized *ts̥* (not [*tʃ̥*], which does not occur in Shinasha). Data in the subsequent sections are given in a phonemic transcription where the phoneme *c* is written as *ts* and *j* as *dʒ*. The mid vowels are more open than *e* and *o*, and in a strict phonetic transcription, the symbols *ɛ* and *ɔ* would be more appropriate. Length and gemination are written as double letters. Thus, *aa*, *ee*, etc. stand for long vowels and *tt*, *kk*, etc. for geminated consonants. Acute accent (´) represents high tone, grave accent (`) indicates low.

1.1. The segments. Gabre's [1986] unpublished study is closely related to the topic of the present paper, and his phoneme chart (at the top of the next page) will serve as a starting point for the presentation of segments. It will be presented in a revised form however.

According to Ashenafi [1989], the sounds *ts* (*c*), *dʒ* (*j*), *ə*, and *i* are phonemic, though they are not listed as such in previous studies. The *i* is a high central vowel, and *ə* is the mid central schwa. These two vowels are typically found in Ethio-Semitic languages, while *ts* (*c*) is common in Omotic languages. The *dʒ* is not a substitute for *z* (as one might conclude from Bender [1987:25]), but an additional phoneme. These four additional phonemes can be exemplified with the following Shinasha data:

- | | | | |
|-----|-----------|-------|-------------------|
| (1) | <i>ts</i> | àtsà | ‘body’ |
| | <i>dʒ</i> | dʒòrá | ‘chair’ |
| | <i>i</i> | bí | ‘his’ |
| | <i>ə</i> | mán | ‘definite marker’ |

Table 1: Gabre's [1986] Phoneme Chart*Consonants*

Labial	Alveolar	Palatal	Velar	Glottal
<i>p</i>	<i>t</i>		<i>k</i>	ʔ
<i>p'</i>	<i>t'</i>		<i>k'</i>	
<i>b</i>	<i>d</i>	<i>dʒ</i> (<i>j</i>)	<i>g</i>	
	<i>d'</i>			
	<i>ts</i> (<i>c</i>)			
	<i>ts'</i> (<i>c'</i>)			
<i>f</i>	<i>s</i>	<i>ʃ</i>		<i>h</i>
	<i>z</i>			
<i>m</i>	<i>n</i>			
	<i>l</i>			
	<i>r</i>			
<i>w</i>		<i>y</i>		

Vowels

Short			Long	
<i>i</i>	<i>ɨ</i>	<i>u</i>	<i>ii</i>	<i>uu</i>
<i>e</i> [ɛ]	<i>ə</i>	<i>o</i> [ɔ]	<i>ee</i>	<i>oo</i>
	<i>a</i>		<i>aa</i>	

If we take Bender's [1987:25, 28] proto-OmotiC phonemes as a basis of comparison (where *ts* is included with question marks), then the Wempera dialect of Shinasha distinguishes itself from proto-OmotiC and from many of today's OmotiC languages by just those sounds which Ashenafi has pointed out in his recent analysis [1989:11], namely: *ə*, *ɨ*, *dʒ*, and maybe *ts*. They are Shinasha innovations.

1.2. The status of the central vowels. Two central vowels, *ɨ* and *ə*, both without long counterparts, have been included here on the basis of Ashenafi's [1989:11] analysis. Their inclusion will need a few comments, because no such vowels have been included in the major OmotiC analyses so far, and they are not considered proto-OmotiC phonemes (cf. Bender [1987:28], but see Wedekind [1989:128]). Since the status of these vowels is important for the tonal analysis, the following points should be noted:

(a) The fact that *i* and *ə* have no long counterparts does shed some doubt on their status as phonemes. But it is not unusual for short and long vowel sets to differ.²

(b) Shinasha speakers in the Gojjam province are surrounded by Ethio-Semitic languages of seven vowels, where *i* and *ə* are there to be “loaned”. But whether they were loans or not, today these vowels are integrated into various items of the Shinasha lexicon and in grammatical morphemes such as *bí* ‘his’ and *mɛn* ‘definite’.

(c) A comparison with a language like Sheko shows that central vowel phonemes may be infrequent, but they are not altogether unusual in the North-Omoti family [Aklilu 1988].

(d) It is true that *i* is unstable in the sense that it alternates with other vowels. The alternation is however morphophonological, e.g. *i* → *i* before vowels, and it does not cancel basic contrasts such as *bí* ‘he’ vs. *bí* ‘his’.

(e) The vowels *i* and *ə* take the same tones as all other Shinasha vowels, short or long.

1.3. Suprasegmentals. *Vowel length* has been discussed in some of the previous descriptions, e.g. Gabre's [1986] study which distinguishes *i*, *e*, *a* from *ii*, *ee*, *aa*, etc. Length is largely independent of other parameters such as syllable pattern or pitch. This can be exemplified with the following pairs where vowel length differs while the syllable patterns are the same, as in (2), or where vowel length differs while pitches are the same, as in (3). See §2 below for the reverse of this perspective.³

(2)	[gòfà]	‘farm (n.)’	[gó:fà]	‘migrate (v.)’
	[gòndà]	‘bad (adj.)’	[gó:ndà]	‘bridge (n.)’

(3)	[gàwá]	‘witness (n.)’	[gà:wá]	‘wound (n.)’
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Gemination of consonants is described as contrastive by Gabre [1986:14]. Since gemination is a common feature in Ethiopian languages, it need not be discussed in detail here. But it should be noted that according to our Shinasha data, gemination is rare and limited to a few consonants; *kk* and *tt* are among the more frequent ones. Data like (5) also show that gemination and pitch are independent parameters.

²About one fifth of the sample of the world's languages in Maddieson [1984:129] have vowel sets which differ in this way.

³Length and pitch are largely independent. In the section about adverbial constructions (3.4), complications will be discussed which seem to arise from compensatory lengthening.

- (4) [ìk:à] ‘one’
 [gìt:á] ‘two’
- (5) [mít:à] ‘wood’
 [mìt:à] ‘load (v.)’

Stress is used occasionally to express emphasis. Apart from this pragmatic function, stress is not phonetically noticeable.

Tone has not been mentioned in any of the previous studies, and it will be in focus for the rest of this paper.

2. Basic Tonal Contrasts

Contrasts between high (H) and low (L) tones can be documented with a large number of minimal pairs.

Monosyllabics: The Shinasha lexicon is predominantly disyllabic (or bi-radical). But there are a few monosyllabic morphemes which contrast in tone: ⁴

- (6) H b́í ‘his’ b́í ‘he’
 L b̀ì ‘her’ b̀ì ‘she’

Disyllabics: In disyllabic words, the H and L tone combinations contrast in all conceivable ways. In the selection of minimal pairs, we have attempted to keep all vowels identical, including the word final *-a*. The reason is that pitch is not independent of vowel quality. This will be discussed in §§5-7 below. The word final *-a* is analysed here as a “citation suffix”, a suffix common to the language families and the area around Shinasha.⁵

⁴The difference between these pronouns—possessive and independent—could be analysed as a difference between clitics and words, where the vocalic difference would then be secondary. At the present stage of the analysis, however, we feel safer with a limited phonological perspective where *i* and *í* are contrasting “phonemes”.

⁵The same suffix could be analysed as a copula. Note the final à in data such as the following:

àf	èw-ì	fèeng-à
person	demonst.-feminine	beautiful-?copula
‘that woman is beautiful’		

But in the present paper, we prefer to regard *-a* as a citation suffix, since citation suffixes of the form *-a* are quite common in Cushitic and Omotic languages. Their use could even be regarded as an area feature which characterizes western Ethiopian languages as diverse as Gumuz (Nilo-Saharan), Oromo (Cushitic), and Shinasha (Omotic).

- (7) HH *gáfá* 'mould (v.)' HL *gáfà* 'tooth (n.)' LH *gáfá* 'belch (v.)'
 HH *átá* 'sprout (v.)' LL *àtà* 'medicine (n.)'
 HL *málà* 'trick(n.)' LL *màlà* 'necklace (n.)'
 HL *gáwà* 'next year (adv.)' LH *gàwá* 'witness (n.)'
 LH *fírà* 'shelter (n.)' LL *fírà* 'common property (n.)'
 LH *àtsá* 'body (n.)' LL *àtà* 'medicine (n.)'

Trisyllabics: Not much can be said about tone patterns of trisyllabics, because trisyllabic verb roots do not seem to exist, and trisyllabic nouns are rare. Those trisyllabics which have been found include either the formative *-tsa* or reduplication; others are loans. Note that these nouns tend to start with a low tone.

- (8) LLH *kòkòp'á* 'tortoise' (reduplication)
 LLH *àkùrtsá* 'axe' (formative *-tsa*)
 LLH *ùumpètsá* 'thief' (formative *-tsa*)
 LHL *àndúrà* 'cat' (Cf. Cushitic *?adurre* 'cat')

Like the few trisyllabic nouns above, disyllabic nouns prefer LL and LH tone patterns (in our sample, seven out of ten). Nouns prefer low tones and final high tones, but this is not an exclusive preference. Shinasha tone patterns are not conditioned by morpheme classes, as the following examples show:

- | (9) | NOUNS | VERBS |
|-----|--------------------------|----------------------------|
| LL | <i>màlà</i> 'necklace' | <i>màfà</i> 'to wash' |
| LH | <i>gàlá</i> 'provisions' | <i>gáfá</i> 'to belch' |
| HL | <i>málà</i> 'trick' | <i>máfà</i> 'to get drunk' |
| HH | <i>márá</i> 'nightmare' | <i>gáfá</i> 'to mould' |

These examples make it plain that pitch patterns and morpheme classes are independent of each other. In this regard, Shinasha (along with other Omotic languages) differs from the neighbouring Cushitic languages where word shape and morpheme class determine stress and pitch.⁶ In Shinasha they do not.

The tone patterns are also independent of vowel length. The same tones and tone patterns are found both on short and long vowels. (In the transcription of long vowels, the tone mark is placed only on the first letter, but it is meant to be read as one pitch extending over the entire vowel length.) Even phonetically, the long

⁶Under a diachronic perspective, however, the high incidence of Shinasha (L)LH nouns is quite interesting, especially when compared with the Cushitic preference for word final stress.

Shinasha vowels of nouns or verbs do not generate any special pitch movements such as rises, falls, or other “contours”.

(10)	SHORT		LONG		
	LL	àwà	‘mother in-law’	àawà	‘sun’
	LH	gàwá	‘witness (n.)’	gàawá	‘wound (n.)’
	HL	málà	‘trick’	máalà	‘grinding stone’
	HH	márá	‘nightmare’	máará	‘she ate’

3. Lexical Tones, Morphology, and Syntax

Shinasha uses tone to show lexical and grammatical distinction. Breeze [1988:481] says of Gimira, “Grammatical distinctions shown by tone ... [are] more limited”, and this is true for Shinasha too, where the main function of tone is lexical.

Every morpheme has its lexical tones. As in other Omotic languages analysed so far, there are hardly any morphotonological changes. In general, the lexical tones will not change, but some of them will disappear without leaving any traces. The only morphotonemic process in Shinasha, then, is the loss of word final tones, and this seems to be restricted to nouns and verbs. In the following sections, the conditions for this process will be discussed with reference to the morphological and syntactic context.

3.1. Verb final tones. The tone of the citation suffix *-a* will be regarded as part of the lexical tones of a verb, since it is not predictable. The verbs under (11) below will be used to exemplify the tonal patterns and the tonal behaviour of verbs; cf. also (9) above.

(11)	<i>áttá</i>	‘to sprout’		(lexical tones: HH)
	<i>kéwà</i>	‘to buy’	<i>ímà</i>	‘to give’ (HL)
	<i>kùt’á</i>	‘to cut’	<i>ùud’á</i>	‘to kill’ (LH)
	<i>ts’àafà</i>	‘to write’	<i>jòt’à</i>	‘to hit’ (LL)

3.2. Elision of lexical tones in verbs. The verb final lexical tones disappear as soon as any suffixes are attached other than the citation suffix *-a*. This is true both for derivation and inflection suffixes.

Passive forms, for instance, are derived by suffixation of *-éer* ~ *-ér* “passive”. The following examples show that the final tone of the verb root will be dropped, and the high tone of the passive suffix takes its place whatever the final tone of the verb root may have been. (Note the compensatory lengthening in most of these verbs.)

- | | | | |
|------|--------------------|------------------|-------------------------------------|
| (12) | <i>kéw-éeré</i> | 'it was bought' | (lexical tones of <i>kéwà</i> : HL) |
| | <i>ím-éeré</i> | 'it was given' | (lexical tones HL) |
| | <i>kùt'-éeré</i> | 'it was cut' | (lexical tones LH) |
| | <i>ùud-éeré</i> | 'it was killed' | (lexical tones LH) |
| | <i>ts'àaf-éeré</i> | 'it was written' | (lexical tones LL) |
| | <i>jòt'-éeré</i> | 'it was hit' | (lexical tones LL) |

Inflection suffixes, such as tense/aspect or person/number suffixes, and polarity suffixes will also cause the verb final lexical tone to be dropped. Cf. the following two paradigms, where the verb stem is followed by the suffix *-ítùw* 'imperfect (present, future)'. There is no trace of the final H tone of *áttá* 'to sprout' or of the final L tone of *kéwà* 'to give'.

- | | | | |
|------|---------------------|--------------------------|---------------------|
| (13) | <i>átt-ítùw-è</i> | 'I will sprout/flourish' | (lexical tones: HH) |
| | <i>átt-ítùw-í</i> | 'you' | |
| | <i>átt-ítùw-é</i> | 'he' | |
| | <i>átt-ítùw-á</i> | 'she' | |
| | <i>átt-ítùw-ó</i> | 'we' | |
| | <i>átt-ítùw-ít</i> | 'you pl.' | |
| | <i>átt-ítùw-ìnó</i> | 'they' | |
-
- | | | | |
|------|---------------------|---------------|---------------------|
| (14) | <i>kéw-ítùw-è</i> | 'I will give' | (lexical tones: HL) |
| | <i>kéw-ítùw-í</i> | 'you' | |
| | <i>kéw-ítùw-é</i> | 'he' | |
| | <i>kéw-ítùw-á</i> | 'she' | |
| | <i>kéw-ítùw-ó</i> | 'we' | |
| | <i>kéw-ítùw-ít</i> | 'you pl.' | |
| | <i>kéw-ítùw-ìnó</i> | 'they' | |

The same is true for other tense or aspect suffixes, such as *-ír* (*-ér*, *-r*) 'past/perfect'.

- | | | | |
|------|------------------|----------------------------|--------------------------------|
| (15) | <i>átt-ír-è</i> | 'I sprouted', etc. | (lexical tones <i>áttá</i> HH) |
| | <i>kéw-ér-è</i> | 'I gave', etc. | (lexical tones HL) |
| | <i>kùt'-ír-è</i> | 'I cut (past/perf.)', etc. | (lexical tones LH) |
| | <i>àm-r-è</i> | 'I went', etc. | (lexical tones LL) |

In the optative/imperative paradigm, the verb root can be followed by person/number suffixes, but again, these suffixes do not show traces of the lexical

verb tones. Cf. the HH tone verb *áttá* ‘to sprout’ and the HL tone verb *kéwà* ‘to give’:

- (16) *áttúwà* ‘let me sprout/flourish’ (lexical tones: HH)
áttá ‘flourish! (you sg.)’
áttúwá ‘let him flourish’, etc.
- (17) *kéwúwà* ‘let me give/may I give’ (lexical tones: HL)
kéwá ‘give! (you sg.)’
kéwúwá ‘let him give’, etc.

The negation suffix is *-áats* ‘not’. The verb root final tone leaves no traces where this suffix is attached.

- (18) *átt-áats-è* ‘I don’t sprout’, etc. (lexical tones: HH)
kéwr-áats-è ‘I don’t give’, etc. (lexical tones: HL)

3.3. Noun final tones. With nouns, as with verbs, it is again the “citation suffix” *-a* which carries the lexical tones. But unlike verbs, nouns will also display their lexical tones on other suffixes (Cf. the adverbial suffix *-tsé* ‘from’ in §3.4 below.) The citation suffix *-a* can have H or L tone. This is part of the lexical identity of the noun and independent of any other factor. Cf. the following tonal patterns of nouns again:

- (19) *bóorsá* ‘bag’ (lexical tones HH)
géfà ‘wheat’ (HL)
bòlá ‘mule’ (LH)
àttà ‘medicine’ (LL)

3.4. Noun final complex tones with adverbial suffixes. Adverbial suffixes do not delete the noun final lexical tone. Among these suffixes there are *-tsé* ‘from near’, *-ké* ‘from’, and *-tsà* ‘in’.

- (20) *bóorsó-tsé* ‘bag-from’ (lexical tones: *bóorsá* HH)
jòoró-tsé ‘chair-from’ (LH)
bòlòó-tsé ‘mule-from’ (LH)
géfòó-tsé ‘wheat-from’ (HL)
àttòó-tsé ‘medicine-from’ (LL)
dàazòó-tsé ‘donkey-from’ (LL)

In some instances, the long suffix vowel *-oo* accomodates two different tones. The first is the lexical tone of the noun, and the last is the high tone which characterizes the suffix *-tsé* ‘from’. In §1.3 and §2 it was pointed out that long vowels in lexical entries will not have two different tones. But long vowels in suffixes can have two tones, e.g. those resulting from adverbial suffixation. (Note that the length of the *-ó ~ -oó* suffix compensates for the length of the root vowel in most of our data.)

3.5. Elision of lexical tones in nouns. While the citation suffix and the adverbial suffixes preserve the lexical tones, case and gender suffixes do not. A noun loses its word final lexical tones when certain case or gender suffixes are attached. In the following examples, various suffixes will be discussed which characterize cases (subjects, direct and indirect objects, genitives) and genders (masculine and feminine).

The morphology of subject and object cases differs only in nominals which rank high in the “animacy” scale (names, relationship terms, and pronouns), and in determiners. But even with these nominals, the differences between subjects and objects are minimal. We will focus on subjects first and discuss differences later.

Subjects: Gender and case are distinguished by vowels and by tone. With common nouns, *-o* stands for masculine, *-u* for feminine, and at the same time they stand for subject (concerning objects, see below). Case overrides lexical tone. Gender also controls tone, and the relation between the two conflicting rules is steered by the animacy scale and determination. The examples below include only common nouns in the function of syntactic subject. Common nouns tend to rank low on the animacy scale, and in general they will not have feminine forms (unless there is some special “animated” relation to some lifeless item.) Cf. the masculine forms in (21).

- (21) *gáfó tìiféré* ‘a tooth broke’ (HL)
àttó kùudéré ‘medicine was spilled’ (LL)

For common nouns referring to animates, the use of feminine forms is more frequent. Cf. the common nouns in (22).

- (22) *nà?ó wàaré* ‘a son came’ (lexical tones of *nà?á*: LH) (masc.)
nà?ú wàará ‘a daughter came’ (lexical tones: LH) (fem.)
gàwó wàaré ‘a witness came’ (lexical tones: LL) (masc.)
gàw(ù)ú wàará ‘a witness came’ (LL) (fem.)
dàazó wàaré ‘a donkey came’ (LL) (masc.)
dàazùú wàará ‘a donkey came’ (LL) (fem.)
àndúruú fèengà ‘a cat is nice’ (LHL) (fem.)

The examples show that masculine subjects end in -ó with high tone which overrides the lexical tone, while feminine subjects end in -(u)ú with high tone, but there are traces of the lexical tone where the *u* is long.

With determiners, things are different. Cf. the following examples which include *móń* ~ *móńí* ‘definite, masc.’ vs. *móń* ~ *móń̀* ‘definite, feminine’, where *ń* and *ń̀* are syllabic nasals:

- (23) àf *móń* wàaré ‘the man came (man def. came-masc.)’
 àf *èwí* ‘that man’
 àf *móń̀* wàará ‘the woman came’
 àf *èwà* ‘that woman’

With pronouns and names, gender is clearly expressed by tone, and tone alone.

- (24) *bí* ‘he (subj.)’ (masc.)
bì ‘she (subj.)’ (fem.)
- gìfèd(d)í* wàaré ‘Gished came’ (masc.)
dàatsétsì wàará ‘Daatsets came’ (fem.)

Objects: Objects have the same morphology as subjects, so what was said about common nouns need not be repeated here. But nouns high in the animacy scale will behave differently from subjects: Object names and relationship terms have -*i* suffixes (rather than -*í*). Again, tone distinguishes gender in the same way as elsewhere. Cf. the following examples of object names and relationship terms:

- (25) *bí* làmmí jòt'ré ‘he killed Lemma’ (masc.)
bí àlmáazì ts'égré ‘he called Almaz’ (fem.)
- bí* níhí ts'égré ‘he called (a) father’ (masc.)
bí ìndí ts'égré ‘he called (a) mother’ (fem.)

With pronouns, there is an optional difference between object and subject marking. Object pronouns can have the suffix -*n*. Tone distinguishes gender.

- (26) àf-èwíí *bí(n)* ts'égré ‘that man called him’ (masc.)
 àf-èwíí *bì(n)* ts'égré ‘that man called her’ (fem.)

Like names and pronouns, determiners such as *móní* or *mónì* ‘definite masc./fem.’ also take the object ending *-i* (rather than *-í* as in the subject), and tone indicates gender:

- (27) *bí àf móní ts'égré* ‘he called the man’ (masc.)
bí àf mónì ts'égré ‘he called the woman’ (fem.)
- bí àf èwí dzòt'ré* ‘he hit that man’ (masc.)
àf èwì ‘that woman (obj.)’ (fem.)

Genitives: Like subjects, genitive attributes have different morphological expressions depending on gender, animacy rank, and determiners. Masculine nominals have high tones, feminine have low tones. But the vowels differ depending on their animacy rank. Common nouns have the suffix *i*.

- (28) *dzòorí tàhà* ‘the chair's cloth’
bùnì tàhà ‘coffee's cloth’

Genitive pronouns have a final vowel *í*. Tone in third person goes with gender:

- (29) *í gálà* ‘my village’ *bí gálà* ‘his village’ *bì gálà* ‘her village’

Genitive names and relationship terms are different from common nouns, and they have the same morphology as genitive attributes as they have as subjects:

- (30) *gìfè(d)dí mòó...* ‘Gished's house’ (masc.)
àlmáazì mòó ‘Almaz's house’ (fem.)
- í nìhí mòó* ‘my father's house’ (masc.)
í ìndí mòó ‘my mother's house’ (fem.); *í* → *i* before vowels

Determiners in the genitive also have the same morphology as the subjects:

- (31) *àf-móní tàhà* ‘the man's cloth(es)’ (citat., masc.)
í ìndí tàhà ‘my mother's cloth(es)’ (fem.); *í* → *i* before vowels

Other attributes: Attributes other than genitives have the same morphology as genitives or subjects: adjectives and numerals receive a *-í* suffix, whose tone depends on the gender. The attribute usually precedes the head noun, but it can be rearshifted for emphasis. In both cases the first word can have a H tone suffix *í*.

(32) **Number + Noun**

<i>gìttá àfà</i>	‘two men’ (citat.)	<i>gìttí</i> → <i>gìttá</i> before a
<i>gìtt(í) gúrá</i>	‘two mountains’	
<i>kèezí kàn-wòtsí</i>	‘the three dogs’	

Noun + Number

<i>àf(í) gìttá</i>	‘TWO men’
<i>gú(í) gìttá</i>	‘TWO mountains’

Adjective + Noun

<i>nàts’(í) bóorsá</i>	‘a white bag (citat.)’
<i>àak’(í) bóorsá</i>	‘a black bag’
<i>múk’(í) bóorsá</i>	‘a short bag’

Noun + Adjective

<i>bóors(í) nàts’ó</i>	‘a WHITE bag (obj.)’
<i>fúpt(í) nàts’ó</i>	‘a WHITE cup’
<i>fír(í) nàts’ó</i>	‘a WHITE root’

3.6. A Summary on word final tones of nominals. The various interrelations of lexical tone, syntactic function, gender, nominal classes, and animacy are not yet fully documented. Table 2 gives a preliminary survey of the data of this section.

Table 2: Interrelations of lexical tone, syntax, gender and animacy

	Genitive	Subject	Object	Adverbials
Common Nouns				
masc.	-í	-ó	-ó	-(o*)ó
fem.	-ì	-(u*)ú	-(u*)ú	
Pronouns				
masc.	-í	-í	-í(n)	
fem.	-ì	-ì	-ì(n)	
Names				
masc.	-í	-í	-í	
fem.	-ì	-ì	-ì	
Relationship Terms				
masc.	-í		-í	
fem.	-ì		-ì	
Determiners				
masc.	-í	-í	-í	
fem.	-ì	-ì	-ì	

The vowels of these suffixes differ with case and word class or animacy. Note that *-i* alternates with *-i* morpho-phonologically: before vowels, *i* changes to *i*.

The tones of these suffixes are, in most instances, controlled by gender. But there are a few instances where the lexical tone is preserved; this is indicated by asterisks.

4. The Tonic Surface: Disyllabic “Normal” Utterances

The phonetic realizations of the two tones H and L differ from utterance to utterance, with relation to the various factors of the environment, tonal and other.

To eliminate a number of factors, such as the differences of word shape, consonantal onset, vowel quality, or syntactic function, words of the structure CVCV were observed which contain no other vowels but *a* (cf. the word lists of §2 above). In these data it should be only intonation, assimilation, and downdrift (and the tonemes themselves) which determine the actual pitch movements. The actual pitch movements in data with HH, LL, HL and LH sequences can be characterized as follows:

HH is realized as a sequence of two identical pitches. (With certain vowels, there is a slight rise. This will be discussed in §5.1 below.) So for a Shinasha speaker, a “HH” sequence must be produced with two identical pitches to be perceived as “HH”. A slightly descending sequence could be interpreted as “LL”.

LL will not have two identical pitches. As a minimum, the second low tone will be one semitone lower than the first, but in most cases the difference will be two or three semitones.⁷

HL is realized as a rather large interval. With about four semitones it is the largest of the four.

LH is realized as a pitch increase of only two, sometimes three semitones. The reduction of ascending intervals is very common.⁸ But since there is a sister language of Shinasha where ascending steps are not reduced,⁹ it is worth noting here that in Shinasha, they are.

⁷Cf. Collier's physiology-based explanation: “[I]n sequences of like tones [...] each tone is produced on a successively lower pitch” [Collier 1984:238]. In Shinasha this is true for subsequent low tones; high tones behave differently.

⁸Collier [1984:238] generalizes that “after a low tone (L), a high tone (H) does not reach its usual pitch but stops short of it: it is assimilated downward.”

⁹This reduction of ascending intervals by intonation or downdrift may not be universal; it certainly is not universal with intervals of this size. In languages of four or five tonal levels, the tolerance for interval reduction is very small or even non-existent. Cf. Bearth's analysis of restraints on intonation in a four tone language: “l'intonation expressive se superpose rarement

To summarize these observations on disyllabics, the tonetic realisations of HH, HL, LH, and LL utterances will be presented in Table 3 below. In this table, the average “low” tone is regarded as the zero level (which corresponds to about 220 Hertz with the young male Shinasha informants), and the distance between two lines represents the interval of one semitone. Lines in parentheses (—) show where tones “should be” if there were no intonation, downdrift, or assimilation. Lines without parentheses show the actual pitches observed in “a-only” disyllabics.

Table 3: Pitch movements in a- only disyllabics

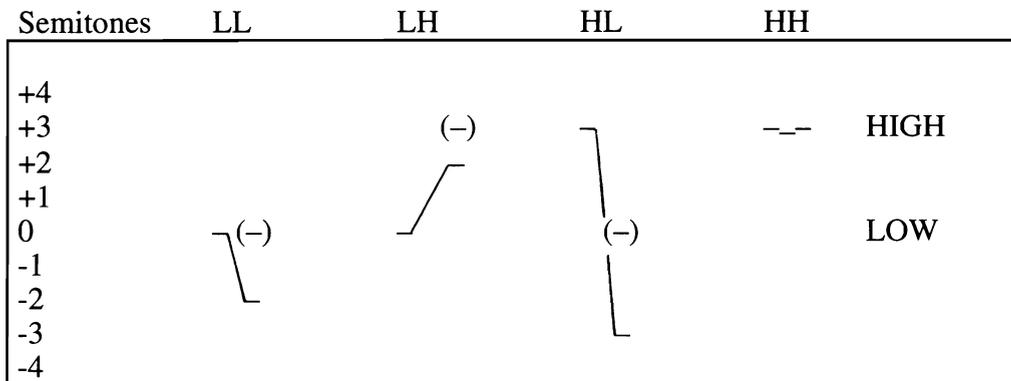


Table 3 does not display anything extraordinary. The only remarkable features of Shinasha when compared with other languages of two tones are the absence of downdrift in HH sequences and the rather dramatic drop in HL sequences.

5. Vowel Quality and Pitch

As soon as differences of vowel quality are introduced, the picture changes. On a [+HIGH] vowel, a high tone syllable will have an “extra high” pitch (EH). The Shinasha vowels which count as [+high] are *i*, *u*, and the central high vowel *ɨ*.¹⁰

The following data will exemplify the effect which [+high] vowels have on the tones of monosyllabics. Isolated monosyllabics were chosen in an attempt to exclude factors other than those which are of interest here, viz. vowel quality and tone. The data are the Shinasha pronouns *tà* ‘I’, *nè* ‘you sg.’, *bí* ‘he’, *bì* ‘she’, *nò*

aux tons en toura [an Ivorian language]. En revanche, les locuteurs disposent d’un certain nombre de morphèmes segmentaux spécialisés [...]”. Cf. also Wedekind [1983:136] on Gimira which, with five level tones, has a “very small range [about one semitone...] in intonational variation and in [...] ‘downdrift’”.

¹⁰In Gimira, the segments of comparable behaviour include *i*, *u*, *Vy*, and *u*-coloured nasals. Concerning Shinasha *a*, note §7 on extra high tone in *gálá*.

‘we’¹¹, *ʔít* ‘you pl.’, and *bó* ‘they’. They were read and recorded by a young Shinasha informant. The resulting pitches are presented in Table 4.

Table 4: Vowel quality and pitch

Toneme	L	L	EH	L	L	EH	H
Vowel			[+HI]	[+HI]		[+HI]	
Word	<i>tà</i>	<i>nè</i>	<i>bí</i>	<i>bì</i>	<i>nò</i>	<i>ʔít</i>	<i>bó</i>
Gloss	I	youSG	he	she	we	youPL	they

Table 4 shows that isolated high tone words have an extra high pitch (EH) if the vowel is [+high]. But [-high] vowels of high tone behave “as they should”, and so do [+high] vowels of low tone.

5.1. Combination of high and low tones with high and low vowels. In tone studies, it is only recently that data on the impact of vowel quality on pitch have become available for closer studies. Hombert [1978:96], in a survey of the relevant data, still concludes that these data “do not suggest that the development of contrastive tones from vowel height is a widely attested process.” Schuh [1978:224] agrees that “The few cases of a connection between tone and vowel height are unconvincing or have alternative explanations.”

More recently, Beckman [1986:129] has taken a stronger position: “Other things being equal, a higher vowel generally has a higher FO than a lower vowel [...], and the effect has been found in enough different languages that there must be a physical basis.” But most of her references are on non-tonal languages.

Since Shinasha, like Gimira, seems to be one of the few tone languages with firm data on pitch-vowel relations, this issue will be given more attention in the subsequent paragraphs. For instance, the following questions arise: How will the different vowel qualities affect the actual pitches of different tones? How will neighbouring syllables and vowels affect each other? And how will differences of vowel qualities affect tonemic differences eventually? The following data display the effect of vowel differences on the actual pitch movements in Shinasha disyllabics.

In **HH** sequences, there can be a slight ascent of about one semitone if both vowels, or the last, are [+high]:

(33) *átú(rí)* ‘you (pl.) sprouted (flourished)’

The pitches are identical if none of the vowels is [+high]:

¹¹We are not sure about the exact meaning of ‘we’ here.

- (34) *bóorsá* ‘bag’
 áttá ‘to sprout’

In **LL** sequences, there is a noticeable descent (about two semitones) if only the first vowel is [+high]:

- (35) *dùubà* ‘music’
 ìndà ‘mother’
 bùudà ‘flour’

There also is a similar descent (up to two semitones) in all other cases, i.e. if both vowels, the last, or none are [+high]:

- (36) *àmì* ‘let her go’
 -əwì ‘that (fem.)’
 àmà ‘let me go’
 kànà ‘dog’

In **LH** sequences, there is a large ascent (up to four semitones) if only the last vowel is [+high]:

- (37) *àmrí* ‘you pl. went’
 àmrí ‘you sg. went’
 àmí ‘let us go’

There is a smaller ascent (about two semitones) if both, the first, or none are [+high]:

- (38) *ìndá* ‘arm’
 shìrá ‘root’
 jòorá ‘chair’
 bòlá ‘mule’

In **HL** sequences, there is a large descent (five semitones or more) if only the first vowel is [+high]:

- (39) *ímà* ‘let me give’
 úshà ‘the drink’
 míttà ‘wood’

There is a rather large descent (four semitones or more) if both or none of the vowels are [+high]:

- (40) *géshà* ‘wheat’
 ímì ‘let her give’

6. The Impact of Vowel Quality on Pitch

The impact of vowel quality on pitch and the amount of phonetic variation really is considerable, especially in isolated utterances, where extra high pitches are not “smoothed out” by neighbouring syllables. In the particular recording of pronouns which was presented in Table 4 above, the tonetic distance between a “normal high” and its “extra high” variant is bigger than the tonetic distance between low and normal high. If it weren't for the rest of the Shinasha data, this language would be a three tone language. One needs to visualize the actual intervals to appreciate how far away the “extra high” is from the others.

Table 5: Low vs. high vs. extra high

Semitones above LOW							
+7			—			—	EXTRA HIGH
+6							
+5							
+4							
+3							
+2						—	HIGH
+1							
0	—	—		—	—		LOW
Hertz	156	156	233	156	156	233	175
Tone	L	L	EH	L	L	EH	H
Word	tà	nè	bí	bì	nò	ít	bó
Gloss	I	youSG	he	she	we	youPL	they

The “extra high” variants of “high” tones are not limited to the reading of pronouns or to the idiolect of one informant. They are also documented in different words and in the data given by different informants. For this reason it is not possible to just disregard the extravagant behaviour of words like *bí* ‘he’ or *ít* ‘they’.

7. The Dynamics of a New Pitch

Will the dynamics of the “extra high” tones affect the Shinasha tone system as a whole? This is not altogether unlikely, for the following reasons:

- (a) There is an Omotic sister language of Shinasha, Gimira, where this has actually happened; and
- (b) There is at least one Shinasha noun which has an “extra high” tone on a non-high vowel (*gálá* ‘village’).

We have no explanation why a word such as the inconspicuous, non-ideophonic morpheme ‘village’ should have extra high tones, tones which in the rest of our Shinasha data are strictly limited to high vowels. But with reference to other languages, especially Gimira, it is inviting to argue as follows:

Gimira, with a firmly documented system of five contrasting level tones, is surrounded by languages of only three tones or less [Wedekind 1983:134, 1985b:884, Breeze 1986:68, 1988:480ff]. A comparison of cognates in these languages shows that Gimira has lost its word final vowels, and most of the CVCV cognates are CVC in Gimira [Wedekind 1985a:113ff]. This reduction was compensated for, as Hombert [1978:102-103] would say, by a “development of new tones [...] in an already complex system”. However, this has not been “creating new tone shapes” as he reports for West African languages, but new tone levels.

In this “tone-splitting” [Schuh 1978:228] which can be documented for Gimira, there is one feature which Shinasha has in common with Gimira. As in Shinasha, the Gimira data show that “high vowels frequently carry a high tone”. In Gimira today, “there are more high vowels of higher tones than a normal distribution would allow for” [Wedekind 1985b:887, 886]. The extra high tone, for instance, is found on 31% of all *i* vowels, as against 8%, 3% and 3% for *e*, *a*, *o* respectively (where 16.6% would be expected—Wedekind [1983:141]).

So both in Shinasha and in Gimira, high vowels correlate with high tones. The difference is that in Shinasha the instances of “extra high” pitches are limited to, and conditioned by, high vowels, and therefore, they constitute no “new tone” (yet).

Or do they? The domain of “extra high” pitch has extended to at least one non-high vowel, *a*. Sometimes differences of quantity bring differences of quality: “The separation of tone 5 [the extra high tone ...] may have become phonemic once the phonetic exponents of a very high tone (i.e., tone 5) approached a critical percentage” [Wedekind 1985b:899]. Percentages are of interest here. Weidert [1981 passim] has argued that in the development of a tonal system, a critical mass of tonetic differences must gather before a new pitch can split off to constitute a

new toneme.¹² In Shinasha, there is at least one morpheme, *gálá*, where pitch exhibits a new quality.¹³

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¹²The critical percentage, according to Weidert, is around ten percent [Weidert 1981].

¹³Alternative explanations would have to posit special vowel features for *a* or some kind of vowel harmony which includes *a* with the high vowels. A marked semantic feature for *gálá* 'village' is also conceivable, but rather unlikely.

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