

## Hausa Phonology

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### 27.1. Introduction

Hausa has the largest number of speakers of any language in sub-Saharan Africa.<sup>1</sup> It is the first language of some 30 million people in northern Nigeria, the Niger Republic, and in scattered communities of settlers and traders in large towns throughout West Africa. In addition, there is also a Hausa-speaking community in the Blue Nile area of the Sudan dating from the beginning of the 20th century.

Hausa is also widely spoken as a second language and is spreading rapidly in its role as a lingua franca. It is extensively used for governmental, educational, and commercial purposes and is employed in the mass media. Hausa language broadcasting, for example, is done not only within Nigeria and Niger, but also by international stations such as the BBC, Voice of America, Radio Deutsche Welle, and Radio Moscow. A number of newspapers appear in Hausa and book publishing is active. Both the Bible and the Koran have been translated into Hausa.

The predominant writing system now employed, which was introduced by the British colonial administration at the beginning of the 20th century, is a modified Roman alphabet, with neither tone nor vowel length represented.<sup>2</sup> Many Hausas, however, still prefer the Arabic script (called *àjàmi*), in which the language had been written a century earlier.

Hausa belongs to the Chadic language family, itself a constituent part of the Afroasiatic phylum. In Chadic, Hausa effectively constitutes a group by itself within the West branch. The only other member of the group, Gwandara, which is spoken some 300 kilometers to the south of Hausaland proper, is a creolized offshoot of Hausa rather than a true sister language.

1. This description is part of a Hausa Reference Grammar being prepared with the support of grants from the U.S. Department of Education (PO-17A10037), the National Endowment for the Humanities (RT-21236), and the National Science Foundation (DBS-9107103).

2. An attempt in Niger to promote an orthography in which long vowels were written with double letters proved to be a failure and was eventually dropped.

Lexically, Hausa has borrowed extensively from other languages. Most of its loanwords have come from Arabic, but it has also taken words from Mande, Tuareg, Kanuri, and other neighboring African languages. In this century, vocabulary development has been due primarily to loanwords from English (in Nigeria) and French (in Niger).

Considering the size and geographical extent of Hausa, it exhibits relatively modest dialect variation. The dialect regarded as Standard Hausa is that spoken in Kano State and adjacent areas to the north and south. The dialects spoken to the west in Sokoto and northwest into Niger can be roughly grouped together as Western Hausa.

Some of the most important sources of information on Hausa phonology are Abraham (1959), Greenberg (1941), Klingenberg (1927/28), and Parsons (1970). A comprehensive bibliography of works on the language is Baldi (1977), to which an update has been provided by Awde (1988).

## 27.2. Phonological inventory

### 27.2.1. Consonants

The consonant phonemes of Standard Hausa (SH) are presented in Table 27-1.

Table 27-1. Hausa Consonants

vl	f	fy	t	c	k	kw	ky
vd	b		d	j	g	gw	gy
gl	ɓ		ɗ	ʼy	ƙ	ƙw	ƙy
vl			s	sh			
vd			z	(j)			
gl			ts				
	m		n				
			l				
			r				
			ɾ				
				y	w	h	ʔ

The letters *c* and *j* represent the affricates [tʃ] and [dʒ] respectively. (In the Hausa of Niger, /j/ is usually pronounced [ʒ].) The /f/ phoneme is variably

pronounced as [p], [f], or [ϕ]. In Western Hausa (WH), it is usually [hw] before /a(a)/ and [h] before other vowels, e.g. WH *hwaadì* ‘fall’ (= SH *faadì*), WH *tàhi* ‘go’ (= SH *tàfi*). Before back rounded vowels it is often pronounced (and, if so, written) as [h], e.g. *dafàa* ‘cook’, *dàfuwaa* = *dàhuwaa* ‘cooking’. The glottalized series includes both laryngealized, implosive stops, indicated by the “hooked” letters *ɓ* and *ɗ*, and glottalized ejectives, indicated by the hooked letter symbol *ƙ* and the digraph *ts*. The non-glottalized counterparts of these consonants are /b/, /d/, /k/, and /s/, respectively. In Katsina and other WH dialects, there is also a palatal ejective /c/, which contrasts with /ts/ before /a(a)/, e.g. WH *c`àaki* ‘chicks’ vs. *ts`àaki* ‘clicking sound in the throat’, both of which are pronounced /ts`àaki/ in SH. The glottalized approximant /y/, which occurs in only a few very high frequency words, is a historically recent phoneme, having developed from the sequence /ɗiy-/ via /ɗy/, cf. SH *yaa* with WH *d`yaa* ‘daughter’.

The palatalized and labialized velars contrast with their plain counterparts before the vowel /a(a)/, e.g. *gàdaa* ‘duiker’, *gwàdaa* ‘test!’, *gyàdaa* ‘peanuts’. Before the back/rounded vowels, the velars are all redundantly labialized and before front vowels they are automatically palatalized. These features are not shown in standard orthography, i.e. *doogoo* ‘tall’ = [doo-gwool], cf. the pl. *doogwàayee*; *geefèe* ‘side’ = [gyeefèe], cf. the pl. *gyàffaa*. The exceptional words with a labialized velar followed by /i(i)/, e.g. *gwiibàa* ‘sediment’, *kwiikwiyò* ‘puppy’, are due to historically recent changes of /u/ to /i/, especially in connection with the monophthongization of the \*/ui/ diphthong to /ii/, i.e. *gwiibàa* < \**gwuibàa*; *kwiikwiyò* < \**kwiukwuyò*.

The palatalized labial /fy/ is lexically infrequent and is often replaced by its plain counterpart, e.g. *fyacèe* = *faacèe* ‘blow one’s nose’. Some WH dialects—the exact distribution is not clear—also have a set of labialized alveolars as part of their consonant inventory, e.g. WH *twàarii* = SH *tàarii* ‘cough’; WH *d`wai* = SH *d`oyii* ‘stench’.

In word final position /n/ is pronounced [ŋ], e.g. *cân* ‘there’ = [cân]. Speakers of Standard Hausa also commonly pronounce final /m/ as [ŋ], thereby resulting in a merger of the two phonemic nasals, e.g. *maalàm* ‘teacher’ = [maalàm] or [maalàn] .

The symbol *ɾ* is used to distinguish the apical tap or roll from the retroflex flap *r* with which it contrasts, e.g. *ɾahàa* ‘pleasant chatting’, *raanii* ‘dry season’, *màrgaa* ‘a cassia tree’, *sarkii* ‘emir’. In word-final position, only *ɾ* occurs, e.g. *`àshãɾ* ‘obscene language’, *teebũɾ* ‘table’, *baɾ* pre-object form of *bari* ‘leave, let’. The difference between the two rhotics is not indicated in

orthography. In syllable-final position, many speakers, especially in WH dialects, commonly substitute /l/ for either or both R's. The flap is the native Hausa R; the roll has come in through loanwords, primarily from Arabic, Kanuri, and English, from the phonemicization of expressive pronunciation used with ideophones and intensive forms, e.g. *řagařgàzaa* 'shatter', *řamas* 'emphasizes dryness', and from the rhotacization of alveolar obstruents in syllable-final position, e.g. *fařkaa* 'wake up' (< \**fadkàa*), cf. *fàrkaa* 'paramour'.

Glottal stop and /h/ are also historically recent phonemes in Hausa, having developed in a similar manner. They both probably existed in the language for some time, in the case of ['] as a phonetic marker of vowel-initial words and, with short vowels, of prepausal position, and in the case of [h] as an allophone of /f/ as well as also being an alternative means of attack for vowel-initial words. Their phonemicization was due to a combination of language-internal sound changes reinforced and/or stimulated by their introduction in medial and initial position in Arabic loanwords, e.g. *řaddu'aa* 'prayer', *sàbà'in* 'seventy', *řazumii* 'fasting', *haařàa* 'merchandise', *hàmsin* 'fifty', *jaah'ili* 'ignorance', *shàhaadàa* 'martyrdom'.

The semivowels /y/ and /w/ only occur in syllable onset position. If they are shifted to the coda because of vowel apocope or morphological processes, they automatically alternate with their corresponding vowels, /i/ and /u/, e.g. *màraayaa* 'orphan', *màrainiyaa* 'female orphan'; *maayèe* 'sorcerer', *màitaa* 'sorcery'; *sàyi* 'buy' = *sai* (optional clipped form); *bàraawò* 'thief', *bàrauniyaa* 'female thief', *baawàa* 'slave', *bàutaa* 'slavery', *řawoo* 'weighing', *řaunàa* 'to weigh'.

All Hausa consonants can be geminated. (With consonants indicated by a diagraph, only the first letter is written doubled, e.g. /gàsařřee/ 'roasted' is indicated here and in standard orthography as *gàsasshee*.) At an analytical level, geminates can be viewed as a sequence of identical consonants abutting across a syllable boundary, i.e. *baccii* 'sleep' has the canonical form C<sub>1</sub>VC<sub>2</sub>.C<sub>3</sub>VV, where C<sub>2</sub> and C<sub>3</sub> happen to be identical. In underived words, only geminate nasals and liquids are common, e.g. *dannèe* 'suppress', *hanuu* 'hand' (cf. *hanuu* 'frankincense tree'), *tallee* 'soup pot'; but others do occur sporadically in native words, e.g. *tukkuu* 'bird's crop' and more frequently in loanwords from Arabic, e.g. *hařji* 'the Hajj', *jabbaa* 'sleeveless robe'. In morphologically derived forms, however, geminates are extremely common, e.g. *řàssaa* 'branches', pl. of *reeshèe*, *hahhau* 'mount many or

often’, pluractional<sup>3</sup> of *hau*; *fàffaadaa* ‘broad’, derived adjective from *faadii* ‘breadth’, and *zàababbee* ‘chosen, adjectival past participle of *zàabaa* ‘choose’.

27.2.2. Vowels

The vowel phonemes (which are the same for all dialects) are presented in Table 27-2.

Table 27-2. Hausa Vowels

Short			Long		Diphthongs	
i		u	ii		uu	
	e	o		ee	oo	
		a		aa		ai au

Hausa has five basic vowels, all of which have long and short counterparts. The long vowels have typical IPA values, while the corresponding short vowels are more lax and centralized. In prepausal position, the qualitative difference between the vowels is less pronounced, but the short vowels are easily recognizable as such because they are automatically checked by a glottal closure. The length contrast is only found in open syllables: in closed syllables all vowels are short.

In word-medial position, vowel length functions lexically, e.g. *fiitò* ‘whistling’ vs. *fitò* ‘ferrying’; *faasàa* ‘postpone’ vs. *fasàa* ‘smash’; *duukàa* ‘beating’ vs. *dukà* ‘all’. In final position, however, its function is to a great extent morphological and grammatical, e.g. *hannuu* ‘hand’ vs. *à hannu* ‘in the hand’; *fitaa* ‘going out’ vs. *fiita* ‘go out’; *shi* ‘him (direct object form)’ vs. *shii* ‘him (independent form)’; *saaboo* ‘new’ vs. *Saabo* ‘proper name’.

The present balanced vowel system derives historically from a skewed system in which the number of contrasts varied depending on the position within the word. In final position, all five vowels occurred, but with a minimal length contrast, if at all. The rule seems to have been that apart from monosyllabic content words (nouns and verbs) ending in /aa/, all final vowels were

3. The term “pluractional” refers to a verbal derivation, traditionally called “intensive” in Hausa and other languages, which is used to indicate the plurality of the action and/or of the patient (either object of a transitive verb or subject of an intransitive), see Newman (1990).

short. In word-initial position—and Hausa did have vowel-initial words—only short /a/ and /i/ were used. (If [u] occurred, it would have been a conditioned variant of /i/.) Otherwise, the language had three vowels (/i(i)/, /a(a)/, and /u(u)/), which could occur long or short.

The vowels /i/ and /u/ exhibit special restrictions in relation to their semi-vowel counterparts. The first is the fact that /i/ before /y/ and /u/ before /w/ are always short.<sup>4</sup> The second is the fact that whereas the sequences /yi/ and /wu/ occur, \*/yu/ and \*/wi/ normally do not.<sup>5</sup> (Surface exceptions result from the fact that /u/ before /y/ is pronounced [i], i.e. *wuyàa* ‘neck’ → [wiyàa].)

The vowels /e(e)/ and /o(o)/, which underlyingly are always long in medial position, only occur in open syllables. If the syllable becomes closed, due to any number of morphophonological processes, the vowel invariably shortens and generally merges with short /a/, e.g. *gyeefèe* ‘side’, pl. *gyâffaa* (< \**gyêffaa* < \**gyêeffaa* < \**gyeefâfaa*), *toonàa* ‘dig up’, pluractional *tan-tònaa* (< \**tontònaa* < \**toontònaa*).

Synchronically there are two diphthongs /ai/ and /au/, which function as long vocalic nuclei, e.g. *mâi* ‘oil’, *kaifii* ‘sharpness’, *sàu* ‘times’, *baunaa* ‘buf-falo’. In the not so distant past, there were two other diphthongs: \*/ui/, which monophthongized to /ii/, e.g. \**gwuibàa* > *gwiiàa* ‘sediment’, and \*/iu/, which monophthongized to /uu/, e.g. \**shiukàa* (< \**shibkàa*) > *shuukàa* ‘to sow’. (Note the instructive doublet meaning ‘illness’: *cùutaa* (< \**cìutaa* < \**cìiw-taa* (with the *-taa* abstract suffix) = *cìiwòo*.) The /ai/ diphthong is pronounced [ai] or [əi] when occurring in a monosyllabic word with falling tone or when preceded by /ʔ/ or /h/. Elsewhere it is pronounced as [ei] or often even [ee], thereby merging with long /ee/. The back diphthong /au/ varies in the [au] to [ou] range, but usually remains distinct from /oo/.

### 27.2.3. Tone

Hausa has two level tones, Hi (unmarked in transcription) and Lo (indicated by a grave accent), e.g. *raanaa* ‘sun, day’, *dàgà* ‘from’, *taagàa* ‘window’, *bàara* ‘last year’, *gooràa* ‘bamboo’, *gòòraa* ‘large gourd’. (With long vowels, the tone mark is only placed on the first of the two vowels.) It also has a Falling contour (indicated by a circumflex), which only occurs on heavy syl-

4. As pointed out by Gouffé (1965: 195n), the usually reliable dictionary by Abraham (1962) is systematically wrong in this regard: Abraham invariably transcribes long /ii/ and /uu/ before /y/ and /w/ respectively.

5. This asymmetry is contrary to the supposed norm, discussed by Ohala and Kawasaki (1984: 122–24), which is that /yi/ and /wu/ lack acoustic salience and thus are marked in relation to /yu/ and /wi/ and would be expected to occur less commonly than the latter pair.

lables. This Falling tone can be analyzed as Hi plus Lo on a single syllable, e.g. *yáaraa* (HiLo-Hi) ‘children’, *mántaa* (HiLo-Hi) ‘forget’, *mîn* (HiLo) = *mini* ‘to me’.<sup>6</sup> There is no Rising tone. Presumed Lo-Hi sequences on a single syllable, which would be expected to result from apocopation and such, do not surface. They are simplified to Lo if immediately preceded by Hi, and Hi elsewhere, e.g. *gawàyii* = *gawài* (< \**gáwàí*) ‘charcoal’, *mukà yi* = *mukài* (< \**múkàí*) ‘we did’; *tàawa* = *tau* (< \**tàú*) ‘mine’; *tàusàyii* = *tàusai* (< \**tàusàí*) ‘pity’.

### 27.3. Syllable structure

Only three syllable types occur in the language: CV, CVV (where VV can be a long vowel or a diphthong), and CVC. (In a few instances, a syllabic nasal serves as the vocalic nucleus of a syllable or as a syllable by itself, e.g. *ngùlu* or *ngùlu* = *ngùlu* ‘vulture’; *ò zoo?* or *ò zoo?* = *ò zoo?* ‘Should I come?’) The CV syllable type is light; the other two are heavy. Syllables may not contain both a long vowel (whether monophthongal or diphthongal) and a final consonant. Such overheavy syllables, which commonly result from morphological processes, are automatically pared down by nucleus reduction rules, e.g. \**râi-n-sà* (lit. life-of-him) → *rânsà* ‘his life’; \**faar-koo* → *farkoo* ‘beginning’ (cf. *faaràa* ‘begin’); *cuus-cùusaa* → *cuccùusaa* ‘stuff repeatedly’.

All Hausa syllables (and thus all Hausa words) begin with a consonant. Words that appear in the orthography with an initial vowel begin phonemically with a glottal stop, e.g. *aure* ‘marriage’ = /ʔaure/. This restriction against vowel-initial words is *not* an inherited Afroasiatic feature as it might first appear. Rather it is due to a historically shallow change whereby a prothetic, originally sub-phonemic, consonant, /ʔ/ or /h/, was added to vowel-initial words, e.g. \**askìi* > *ʔaskìi* ‘shaving’, \**abàa* > *habàa* ‘chin’. True consonant clusters are not allowed, although two consonants may abut across a syllable boundary, e.g. *han.tàa* ‘liver’. Most words end in a vowel, the exceptions being ideophones, e.g. *wulik* ‘emphasizing blackness’, recent loanwords, e.g. *kyât* ‘cake’, or the result of vowel apocopation, e.g. *kã* = *kadà* ‘don’t’.

Hausa words tend to be disyllabic, trisyllabic, or even quadrisyllabic. Monosyllabic words occur, but with a more restricted distribution. They are the norm for pronouns, connectors, and other function words and they are

6. Although structurally the Falling tone is easily analyzed as a combination of Hi + Lo, there is evidence that at the level of *Sprachgefühl* it exists as a unitary contour.

also common with ideophones. On the other hand, there are only some twelve monosyllabic verbs, mostly *Ci* or *Caa* with Hi tone (e.g. *bi* ‘follow’, *jaa* ‘pull’) and a small number of CVV nouns with Hi or Falling tone, e.g. *faa* ‘flat rock’, *mâi* ‘oil’, *sau* ‘foot’.

## 27.4. Phonotactic restrictions

### 27.4.1. Sonorants

In normal CVCV sequences, /l/ and /n/, and /l/ and /r/ cannot co-occur. (As a result, the rendition of the English loanwords ‘linen’, /li:lɪn/ and ‘nylon’ /li:lɪn/ end up almost being identical.)<sup>7</sup> The restriction does not, however, apply to the plural suffix *-unàa*, e.g. *tùluu* ‘waterpot’, pl. *tuulunàa*, or to other cliticized elements, e.g. *tùluunaa* ‘my waterpot’. The /r/ restriction only applies to the flap /r/; words with the sequence /r/ – /l/ and /l/ – /r/ do occur, e.g. *lùũra* ‘look after’, *řuulàa* ‘ruler’. In the case of flap /r/ and /n/, there is a one-directional restriction: /r/ – /n/ occurs readily, e.g. *rinàa* ‘dye’, *raanii* ‘dry season’, but /n/ – /r/ does not, the word *narkèe* ‘melt’ being an exception.

### 27.4.2. Glottalized segments

There are two restrictions that affect the glottalized consonants.

(a) One cannot have two different glottalized consonants in the same word, i.e. /b/ – /ts/ or /k/ – /d/ do not co-occur in the same word, whether in immediate sequence or separated by other elements. The Arabic loanword *dàřiiikàa* ‘religious sect’ is an exception. One can, however, have multiple instances of the same consonant, e.g. *baabèe* ‘quarrel’, *dàadumàa* ‘drive away’, *tsaatsàa* ‘rust’, *kuukùutaa* ‘try hard’.

(b) Generally speaking, glottalized consonants and their non-glottalized counterparts cannot co-occur in the same word, i.e. sequences of /b/ – /b/ or /k/ – /k/ do not occur in either order. On the other hand, whereas the sequence /d/ – /d/ does not occur in that order, /d/ – /d/ is quite normal, e.g. *daadii* ‘pleasantness’, *dadèe* ‘last long’. Similarly, /ts/ – /s/ does not occur, although there are a few examples of /s/ – /ts/ with an intervening consonant, e.g. *santsii*, ‘slipperiness’, *sartsèe* ‘splinter’. Instances of words containing /k/ and a suffix with /k/, e.g. *kauy-ukàa* ‘villages’, *kar-koò* ‘durability’, suggest that the glottalization restriction is perhaps a property of roots rather than full words.

7. Syllable-final nasals have an ambiguous status in Hausa (behaving in many respects like components of the vocalic nucleus) and thus would not be expected to obey the same principles.



### 27.4.3. Tone and vowel length

With some exceptions (e.g. recent loanwords and ideophonic reduplicatives) there are no words ending in a Lo-Lo tone sequence and a long final vowel. Thus, *màcè* ‘woman’, *gwàdò* ‘blanket’, and *kaaŕùwà* ‘prostitute’ occur, but words such as *\*kàrèè* or *\*zòmòdò* or *\*tunkìyàa* do not.<sup>8</sup>

## 27.5. Syllable weight

Syllable weight plays an essential role in Hausa phonology and morphology in a number of different areas, of which the following are only some selected examples (see Newman 1972, 1981).

### 27.5.1. Canonical shape

(a) Different pronoun paradigms are generally marked by a fixed weight pattern. For example, direct object and subjunctive subject pronouns are all characterized by a light syllable, whereas disjunctive and perfective pronouns are characterized by a heavy syllable, e.g. (‘1, 2m., 2f., 3m., 3f., 1pl., 2pl., 3pl.’):

direct object (Hi tone set): *nì, kà, kì, shì, tà, mù, kù, sù*

subjunctive: *̀n, k̀a, k̀i, ỳa, t̀a, m̀u, k̀u, s̀u*

disjunctive: *nii, kai, kee, shii, ìta, muu, kuu, suu*<sup>9</sup>

perfective: *naa, kaa, kin, yaa, taa, mun, kun, sun*

(b) Abstract nouns of sensory quality, a group of semantically related nouns ending in *-ii*, all have a heavy first syllable, e.g. *zaafii* ‘heat’, *nauyii* ‘heaviness’, *karfii* ‘strength’.

(c) Verb + noun compounds in which the first element is monosyllabic invariably have a heavy first syllable, even if the verb would normally have a short vowel, e.g. *shàa-zumaamì* ‘sugar ant’ (lit. drink honey); *cii-raani* ‘dry season work’ (lit. eat dry season < *ci* ‘to eat’); *bìi-bango* ‘water dripping along the wall’ (lit. follow the wall < *bi* ‘to follow’); *kàs-dafi* ‘a poison antidote’ (lit. kill poison).

### 27.5.2. Rhythmic weight polarity

(a) With the verbalizing suffix *-a(a)ta*, the length of the /a(a)/ is determined by the weight of the preceding syllable to produce either a Heavy–Light

8. This phonotactic restriction was first pointed out explicitly by Leben (1971). For a reinterpretation of various synchronic tone rules postulated in connection with this restriction, see Newman and Jaggard (1989).

9. The feminine pronoun *ìta* illustrates the metrical equivalence of a heavy syllable to two light syllables.

pattern or a Light–Heavy alternation, e.g. *tsooràtaa* ‘frighten’ < *tsòoroo* ‘fear’; *kàunatàa* ‘love s.o.’ < *kàunaa* ‘love’; *danyàtaa* ‘moisten’ < *danyee* ‘fresh, moist’; cf. *fùsaatà* ‘be angry’ < *fushii* ‘anger’; *wàdaatàa* ‘enrich’ < *wàdaa* ‘wealth’.

(b) The reduplicative verbalizer also exhibits weight polarity, e.g. *zaafàfaa* ‘to make hot’ < *zaafii* ‘heat’, *kaifàfaa* ‘sharpen’ < *kaifii* ‘sharpness’; cf. *dumàamaa* ‘warm up’ < *dùmii* ‘warmth’.

### 27.5.3. Syllable weight and tone

(a) Basic disyllabic intransitive verbs ending in *-a* (the so-called “grade 3” verbs) normally have Lo-Hi tone and a light first syllable, e.g. *tùma* ‘jump’, *shìga* ‘enter’, *tsìra* ‘germinate’. Grade 3 verbs with a heavy first syllable generally have Hi-Hi tone, e.g. *girma* ‘grow up’, *kaura* ‘migrate’, *tsiira* ‘escape’.

(b) Plurals of “ethnonyms” (which includes occupations and such) are formed by means of a suffix *-aawaa*. Those which are built on disyllabic stems with a heavy first syllable often have a Lo-Lo-Hi tone pattern; ethnonyms with all other syllabic shapes have all Hi tones, e.g. *Hàusàawaa* ‘Hausa people’, *Gwàaràawaa* ‘Gwari people’, *dùukàawaa* ‘leather workers’; cf. *Badaawaa* ‘Bade people’, *Kanaawaa* ‘people from Kano’, *Zazzagaawaa* ‘people from Zaria’.

(c) Hypocoristics formed by final syllable reduplication have Lo-Hi-Hi tone if the initial syllable is heavy. If the initial syllable is light, the word has an initial Hi tone, the other tones being unpredictable, e.g. *Làadiidi* < *Laadi* ‘fem. name’; *Àduudu* < *Audu* ‘masc. name’; *Mùd’eede* < *Mùd’de* ‘masc. name’; cf. *Inuunu* < *Inuu* ‘masc. name’, *Kulùulu* < *Kulù* ‘fem. name’.

## 27.6. Functioning and operation of tone

### 27.6.1. Lexical and grammatical tone

Tone functions both lexically and grammatically. Although lexically tone does not have a functional load comparable to a West African language such as Igbo, it does serve to distinguish a number of lexical items from one another, e.g. *kai* ‘you (m.)’, *kâi* ‘head’; *gòraa* ‘large gourd’, *gooràa* ‘bamboo’; *kuukàa* ‘baobab tree’, *kuukaa* ‘crying’; *wuyàa* ‘neck’, *wùyaa* ‘trouble’; *suntàa* ‘untie, loosen’, *sùntaa* ‘catch fish’. Grammatically, tone serves to mark tense/aspects, verb derivations, nominalizations, adverbializations, etc. This is sometimes done by tone itself but more often in conjunction with changes in vowel length, e.g.

*taa* ‘she (past tense)’, *tâa* ‘she (future tense)’  
*dafâa* ‘to cook’, *dâfaa* ‘cook! (imperative)’  
*shaa* ‘to drink’, *shâa* ‘drinking’; *ci* ‘to eat’, *cîi* ‘eating’  
*îdò* ‘eye’, *îdo* ‘in the eye’; *kasaa* ‘ground’, *kasà* ‘on the ground’

### 27.6.2. Fixed tone patterns

Inflectional and derivational constructions in Hausa tend to have associated with them set tone patterns which override the lexical tone of the underlying items. For example, agentives with the prefix *ma-* have the tone pattern Hi-(Lo-)Lo-Hi; language names and locative nouns with the prefix *ma-* are all Hi; abstracts with the ending *-(n)takaa* have the pattern Lo-Lo-Hi-Lo; plurals with the suffix *-unaa* have a ...Hi-Lo pattern; and plurals with the suffix *-ai* have a ...Lo-Hi pattern.

*manòomii* ‘farmer’, *maròowàcîi* ‘miser’, *majèemii* ‘tanner’  
*Laañabcîi* ‘Arabic’, *Jaamusancîi* ‘German’  
*makañantaa* ‘school’, *majeemaa* ‘tannery’  
*jàarùntakàa* ‘bravery’, *yàaràntakàa* ‘youthfulness’  
*tùddai* ‘hills’, *bàalìgai* ‘adults’, *àlmùbàzzàrai* ‘spendthrifts’  
*huununàa* ‘caps’, *agoogunàa* ‘clocks’; *bakunkunàa* ‘bows’

## 27.7. Phonological processes

Understanding of Hausa phonology and morphology requires the recognition of a number of phonological processes. Some of these processes are essentially historical in nature, although their existence is still evident in morphological alternations; whereas others still function as synchronic rules, although not necessarily in a totally productive, exceptionless manner. For convenience, one can divide the changes into two groups, those affecting coda (i.e. syllable-final) consonants,<sup>10</sup> and those showing the influence of vowels on syllable initial consonants.

### 27.7.1. Assimilation of nasals

In prevocalic position, there are two distinct nasals, the bilabial /m/ and the alveolar /n/. When followed immediately by another consonant, whether within the same word or across word boundaries, /n/ always undergoes anticipatory assimilation to the position of that abutting consonant, e.g.

10. A number of these changes were described over a half century ago by Klingenberg (1927/28). Some of these, especially the weakening of velar and labial stops to /u/, have now come to be called “Klingenberg’s laws.”

*sun bi* ‘they followed’ → [sumbi]

*gidankù* ‘your house’ → [gidaŋkù] (cf. [gidansù]/[gidammù] ‘their/our house’)

In Standard Hausa, but not in WH dialects, /m/ codas also undergo place assimilation, e.g.

*d'inkàa* [d'ɪŋkàa] ‘sew’ = WH *dumkàa*

*kàzântaa* ‘filthiness’, cf. *kàzaamii* ‘filth’.

### 27.7.2. Syllable-final velars

Syllable-final velars historically weakened to /u/, e.g.

*talaucii* ‘poverty’ < \**talacii*, cf. *talàkà* ‘common man’

*sàraunìyaa* ‘queen’ < \**sàraknìyaa*, cf. *sarkii* ‘king’

*haurèe* ‘tooth’ < \**hakrèe*, cf. *hakoorii* ‘tooth/teeth’ (originally a plural form)

### 27.7.3. Syllable-final labials

Syllable-final labial obstruents historically weakened to /u/, but in Standard Hausa only. The change also affected /m/, but only when abutting with a following /n/ or /r/. In WH dialects, the original consonant remained.

*sàuka* ‘get down’ = WH *sàpka*

*Audù* ‘proper name’ = WH *Abdù*<sup>11</sup>

*'audùgaa* ‘cotton’ = WH *'abdùgaa*

*shuukàa* ‘to sow’ (< \**shiukàa*) = WH *shipkàa*

*taushii* ‘type of drum’, (pl. *tafàashee*) = WH *tafshii*

*zaunàa* ‘sit’ (cf. *zamaa* ‘sitting’) = WH *zamnàa*

*'auree* ‘marriage’ (cf. *'amaryaa* ‘bride’) = WH *'amree*

### 27.7.4. Rhotacization

Syllable-final coronal stops and the ejective /ts/ undergo rhotacization to the rolled /r/ as an active process.

*kaṛkàfaa* ‘beat repeatedly’ < \**kadkàfaa*, cf. *kadàa* ‘beat’

*maṛmàtsaa* ‘push, pester repeatedly’, cf. *matsàa* ‘push, pester’

*huṛhuṛu* ‘four each’, cf. *hudu* ‘four’

*'yaṛsà* = *'yaatasà* ‘his daughter’

*faṛkee* ‘trader’ (< \**fatkee*), cf. pl. *fatàakee*

*kāṛ* apocopated form of *kadà* ‘do not!’

11. Interestingly, names such as *Àbdùllaahì*, *Àbdùlsàlám*, and *Àbdùlmaalik* are pronounced with /b/ rather than /u/ even by Standard Hausa speakers who say *Audù* rather than *Abdù*.

The rule also applies to /s/ and /z/, but in a more sporadic, unpredictable fashion, e.g.

*marãr* = *maràs* ‘lacking’, cf. pl. *maràsaa*  
*fitaãr* = *fitas* (WH) ‘take out’ (from *fita* ‘go out’)  
*gĩrgijèè* (< \**gizgizèè*) ‘raincloud’, cf. pl. *gizàagizai*  
*mãrmaza* ‘very quickly’, cf. *maza* ‘quickly’  
 cf. *kaskoo* ‘bowl’ (not \**kaĩkoo*); *fizgaa* ‘grab’ (not \**fĩrgaa*)

### 27.7.5. Gemination

Coda consonants in Hausa commonly assimilate fully to an abutting consonant to form a geminate, e.g.

\**fit-shee* → *fisshee* ‘take out (pre-pronoun form)’  
 \**kwan laafiyàa* → *kwal laafiyàa* ‘rest well!’  
*fuskàrkà* = *fuskàkkà* ‘your face’

The gemination particularly shows up in reduplicative constructions such as pluractional verbs or adjectives derived from sensory quality nouns. In these cases, gemination occurs instead of the rules changing velars and bilabials to /u/ and alveolars to /r/, the latter usually being a possible option.

*daddàkaa* pluractional of *dakàa* ‘pound’ (not \**daudàkaa*)  
*kakkàfaa* pluractional of *kafàa* ‘affix’ (not \**kaukàfaa*)  
*fĩffita* (= *fĩřfita*) pluractional of *fita* ‘go out’  
*mammàtsaa* (= *mãrmàtsaa*) pluractional of *matsàa* ‘push, pester’  
*kakkaawoo* pluractional of *kaawoo* ‘bring’  
*gwàggwaabaa* ‘thick’ < *gwaabii* ‘thickness’  
*zàzzaafaa* ‘hot’ < *zaafii* ‘heat’  
*wàwwaaraa* ‘smelly’ < *waarii* ‘stench’  
*kàkkauraa* ‘stout’ < *kaurii* ‘stoutness’

### 27.7.6. Palatalization

(a) When followed by a front vowel, either *i(i)* or *e(e)*, the alveolars *s*, *z*, and *t* palatalize to *sh*, *j*, and *c*, respectively, e.g.

*gàshe* stative form of *gasàa* ‘roast’  
*kàajii* pl. of *kàazaa* ‘hen’  
*sàacee* pre-pronoun form of *sàataa* ‘steal’

The voiced stop *d* also palatalizes to *j*, with resultant neutralization of the *z/d* contrast, but less regularly than with the above consonants. It generally is blocked by a preceding /n/ and in other environments the palatalization is either optional or lexically determined, e.g.

*gìndii* ‘base’, *kundii* ‘pad of paper’, cf. *hanjìi* (< \**hanzìi*) ‘intestines’  
*jìdee* pre-pronoun form of *jìdaa* ‘transport’  
*bidoodii* pl. of *bidàa* ‘thatching needle’  
*kadoodii* = *kadoojii* pl. of *kadàa* ‘crocodile’  
*gàajee* (not \**gàadee*) pre-pronoun form of *gàadaa* ‘inherit’

The sonorants *n*, *l*, *r*, and *ř* do not undergo palatalization, nor does *d*. The ejective sibilant *ts* palatalizes to *c*’ (an ejective affricate) in WH dialects, but not in Standard Hausa, e.g. SH *duutsèe* = WH *duuc’ì* ‘stone’, SH *tsiilaa* = WH *c’iilaa* ‘tapeworm’.

The palatalization process shows up readily in morphological constructions. Because of the introduction of loanwords and the operation of various sound changes, non-palatalized alveolars before front vowels are now very common, e.g.

*sillee* (= *sullee*) ‘top of corn stalk’  
*koosee* (= *koosaì*) ‘fried beancake’  
*zîi* ‘diamonds’ (card suit), *ziinaarîi* ‘gold’  
*teebûr* ‘table’, *’asîbitî* ‘hospital’ (pl. *’asibitoocii*, with palatalization!)

Because the palatalization rule was presumably fully regular at an earlier historical stage, one now finds words with the palatalized consonant in the underlying, lexical form and the non-palatalized counterpart in the derived form, e.g.

*gaashîi* ‘hair’, *gârğaasaa* (< \**gâsgaasaa*) ‘hairy’  
*dùkushii* ‘colt’, *dùkusaa* ‘female colt’  
*mijîi* ‘husband’, pl. *mazaa* ‘males’  
*kuncii* ‘restricted’, *kuntâtaa* ‘restrict’

As was mentioned earlier, /e/ normally changes to /a/ in closed syllables. It should be pointed out that the application of the rules must be ordered so that the palatalization takes place before the /e/ → /a/ change, e.g.

*jeenèe* (< \**zeenèe*) ‘row of reaped corn’ pl. *jânnaa* (not \**zânnaa*)  
*sàataccân* ‘the stolen one’ (< \**sàatatee-n*)

(b) The semivowel *w* also palatalizes regularly to *y*, e.g.

*kàasuwaa* ‘market’, pl. *kaasuwooyii*  
*baraawòo* ‘thief’, pl. *baraayii*  
*rawaa* ‘dancing’, pl. *raye-raye*

Viewed in the context of the palatalization rule affecting alveolar obstruents, the *w* → *y* change seems totally ad hoc, but this is not so. The velars *k*, *g*, *k* (and their labialized counterparts) also undergo palatalization, e.g. *taagàa* ‘window’, pl. [taagwooyii] (orthographically *tagogî*), *ràkee* [ràkyee], ‘sugarcane’, cf. *ràkensà* [ràkyansà] ‘his sugarcane’. This change, unlike the palatali-

zation of alveolars, is not, however, noted in the orthography and thus it has tended to be neglected by Hausaists. Recognizing it, however, allows one to view the  $w \rightarrow y$  rule as part of a more general pattern.

### 27.7.7. *Alternation of f and h*

Much less active synchronically than palatalization is the change of /f/ to /h/ when followed by one of the back rounded vowels /u(u)/ or /o(o)/, e.g. *tâfi* ‘go’, *tahoo* ‘come’; *dafâa* ‘cook’, *dâhuwaa* ‘cooking’. It is evident not only in morphological alternations and dialect variants, but also in the realization of a number of English loanwords, e.g.

*hudu* = *fudu* ‘four’

*mahuucii* = *mafiicii* ‘fan’

*mahò* ‘a patch’, cf. *mafèe* ‘to patch’

*tsoohoo* ‘old’, cf. pl. *tsòofâffii*

*hòotoo* ‘photo’ (< Eng.)

*hòoloo* ‘polo’ (< Eng.)

The following two examples with “irregular” morpheme alternants illustrate the interaction of the various phonological processes that have been described.

- (i) *màkaahò* ‘blind person’ (\*f > /h/ before /oo/); *màkâafii* ‘pl.’ (set ...Lo-Hi tone pattern; surfacing of the underlying /f/);  
*màkaunìyaa* ‘blind woman’ < \**màkaaf-nìyaa* (syllable final \*f > u; shortening of /aa/ to /a/ to avoid an overheavy syllable)
- (ii) *zuuciyaa* ‘heart’ < \**zuktì-yaa* (syllable final \*k > u; palatalization of /t/); *zukàataa* ‘pl.’ (set Hi-Lo-Hi tone pattern, surfacing of underlying /k/ and /t/).

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