

# Hausa plural systems: a diachronic presentation

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## Abstract

*This article looks at noun plurals in Hausa from a diachronic perspective. It is claimed that the multiplicity of plural forms encountered today is the result of a historical development in which older plural formatives survived alongside younger ones. Specifically, four typological principles are identified and their introduction into the overall system of plural formation is described. It is argued that on the basis of these principles three different historical systems can be set up.*

## 1. Introduction

Hausa has many ways of forming noun plurals. An excellent overview of such forms is to be found in *An English-Hausa Dictionary* (Roxana Ma Newman 1990) where twenty-eight regular plural types are listed and some “irregular or infrequent plural types” (R. Ma Newman 1990: xiv) are mentioned. R. Ma Newman (1990: 15) says Hausa has “forty different plural formations” on the surface and “at least a dozen distinct plural patterns.” Which plural form(s) a singular noun ‘chooses’ has been discussed by various authors. Abubakar (1995), Leben (1977), P. Newman (1972, 1990a), Parsons (1975, 1981), Pilszczikowa-Chodak (1979), Rosenthal (1999) and Wolff (1993) have described some aspects of the singular-plural relationship. All of them succeeded in showing – at least partially – how the selection of a plural form is determined by the phonological characteristics of the singular noun, i.e., its tone pattern, vowel sequence, syllable weight, syllable quantity and kind or place of articulation of the final consonant. Our own analysis has benefitted much from these studies.

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Describing the relationships between singulars and plurals is not easy. Many plural forms – or plural classes – are not in complementary distribution; instead they seem to be in competition for singular nouns with the same phonological characteristics. E.g., the following singular nouns (all having a high tone pattern, a heavy open first syllable and a final vowel **-aa**) have different plurals:

(1)	Singular	Plural
	<b>ḡeeraa</b> <sup>2</sup> ‘mouse’	<b>ḡeeràayee</b> (class 9a)
	<b>raanaa</b> ‘sun’	<b>ràanàikuu</b> (class 12a)
	<b>kaayaa</b> ‘load’	<b>kaayàyyakii</b> (class 10b)

This competition means that many singular nouns have more than one plural form, e.g.:

(2)	Singular	Plural
	<b>maataa</b> ‘women’	<b>maatàayee</b> (class 9a)
		<b>màatàikuu</b> (class 12a)
		<b>maatàttakii</b> (class 10b)

In our view, none of the above authors presents a fully satisfactory account of why such competition is found, or of what kind of relationships hold between the many plural classes. In this article we attempt to present such an account.

### 1.1. *Aims and claims*

We define seventeen plural classes, nine of which divide into two sub-classes and two into three sub-classes. If each class or sub-class is regarded as a unique combination of plural formatives, then there are some thirty different ways of forming a Hausa plural.<sup>3</sup> Since the classes defined here must account for the same surface forms as those defined by other authors, the classes/definitions hardly differ from those of the other authors. What is new here is that the diachronic aspect is cen-

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2. Tone and vowel length in Hausa are marked as follows: high tone (H) is unmarked, low tone (L) is marked with a grave accent (e.g., àa) and falling tone (F) with a circumflex accent (e.g., â). Long vowels are marked with a double vowel sign (e.g., ee) and single vowels with a single vowel sign (e.g., e). The so-called glottalized consonants are written: ḡ, ḡ and ḡ. The glottal stop at the onset of words which begin with a vowel in the standard orthography is marked ʔ.
  3. A number of productive plural forms play no part in the development of the system(s) described here. The first group is derived from nouns: 1) the ethnonyms where the plural ignores the singular **bà-** prefix, e.g.: sg. **bàtuur̄ee** → pl. **tùur̄àawaa** ‘Europeans’ (from **Tuufai** ‘Europe’); 2) adjectives derived from abstract nouns, e.g.: sg. **dàddaadaa**, pl. **daadaadaa** ‘nice’ (from **daadii** ‘pleasantness’). The second group is derived from verbs: 3) the nouns of agent, e.g.: sg. **maḡinkii** → pl. **maḡinkaa** ‘tailors’ (from **ḡinkàa** ‘sew’); 4) nouns of place, e.g.: sg. **marinaa** → pl. **màḡinai** ‘dye-pits’ (from **rinàa** ‘dye’); 5) nouns of instrument, e.g.: sg. **mabuudii** → pl. **màbùudai** ‘keys’ (from **buudēe** ‘open’). A further West Hausa plural form plays no role in the present description: e.g.: sg. **àdùdù** → pl. **àdùdinnèe** ‘basket’.

tral. The studies mentioned above work mostly within a synchronic framework, only three authors attempting to integrate diachronic facts: Parsons (1975) combined morphological with semantic considerations; Pilszczikowa-Chodak (1979) focussed on both gender and the contrast between high and low final vowels. Wolff (1993) highlighted the importance of vowel sequence and suggested that the third consonants (found in the plural form but not in the singular) are Old Hausa determiners; both ideas have a prominent place in the present analysis.

The motivation for a historical account is simple: it is extremely unlikely – probably impossible – that all known plural classes were present in an earlier form of Hausa. The plural forms are littered with clues suggesting a historical development in which older principles of plural formation survived alongside younger ones. We argue that this historical development is responsible for the multiplicity of plural forms encountered today. Our analysis is based on internal evidence from Hausa. While comparison with other Chadic languages will eventually be indispensable to complete the picture, it is beyond the scope of the present paper.

The present description introduces two new elements into the discussion of Hausa plurals: ‘tone-vowel group’ and ‘system’. The seventeen plural classes can be assigned to four tone-vowel groups in which classes share a common (underlying) tone pattern and vowel sequence. Tone-vowel groups are a construct or tool and help trace historical developments. These developments crystallized as systems: the earliest system is termed the “semantic system”; this was replaced by the “prosodic system”;<sup>4</sup> the most recent system is the “suffix system”. Tone-vowel groups allow us to follow the development of classes through the systems and to pinpoint the moments at which the typological principles of plural formation were introduced. Four such principles are identified here:

- (i) change in tone pattern and vowel sequence;
- (ii) addition of a third consonant not found in the singular form,
- (iii) reduplication and
- (iv) suffixation.

The first principle of plural formation is found in all three systems but is the only principle found in the first system. The second and third principles were introduced in the prosodic system, and the fourth principle in the suffix system.

The following example will illustrate how the terms class, tone-vowel group and system interact. Compare the following two plural forms of the singular **zuuciɣaa** ‘heart’:

(3)	Singular <b>zuuciɣaa</b> (*zukù) ‘heart’	Plural <b>zukoocii</b> (*zukootii) <b>zuuciyooyii</b>
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4. We wish to thank an anonymous referee for suggesting this name to us.

Both plural forms, **zukoocii** (class 5a) and **zuuciyooyii** (class 15), have a high tone pattern and a final vowel sequence **oo-ii**. Therefore we treat them as belonging to the same tone-vowel group (tone-vowel group 1). They differ, however, with regard to the other principles of plural formation: while **zukoocii** is formed by changing only the vowel sequence and the tone pattern, **zuuciyooyii** also requires the repetition (i.e. reduplication) of the final consonant **y**. We therefore assign them to different classes within this tone-vowel group and (since the different principles of plural formation were introduced at different times) to two different systems.

The framework of systems and tone-vowel groups allows us to account for i) the sheer quantity of plural forms, ii) the ways in which the phonological characteristics of the singular noun determine its choice of plural class and iii) the reason why many singulars have more than one plural form. Our argument runs along the following lines: new typological principles of plural formation developed into different systems, causing a reinterpretation of the overall system and altering the assignment of singular nouns to plural classes; however older plural forms survived alongside younger ones. This reinterpretation resulted in the formation of new plurals from the same singular (we call these “secondary plurals”) and/or the formation of new plural forms from an older plural form – not from the singular (we call this “repluralization”). We show that such variation is systematic.

The article is constructed as follows. In section 1.2 we introduce the four typological principles of plural formation; in section 1.3 we offer criteria which allow us to determine the relative ages of different plural formatives and to show how these formatives relate to the three systems. In section 2 we show how each tone-vowel group and plural class fits into the model presented in section 1.3. Section 3 summarizes the historical development outlined in sections 1 and 2.

### *1.2. Typological principles*

In this section we describe the four typological principles of plural formation. These principles are not new; they have been discussed in more detail by the authors mentioned earlier, each of whom focusses on one or the other of these principles. Since our aim here is to establish historical relationships between the different principles, only a brief outline is presented. The reader interested in a more thorough discussion of the ways in which Hausa plurals are formed is referred to these other authors.

Change in tone pattern and vowel sequence (principle i) is the most important principle of plural formation; it is found in every plural class and in every system. Our Tone-Vowel groups are based on this principle. The correlations between tone patterns and vowel sequences outlined in Table 1 can be assumed.

The A (surfacing in plurals as **-a(a)-**, **-ee-** or **-oo-**) and U (**-u-**) vowels shown in Table 1 are found in almost all plural classes. Within Afroasiatic linguistics such a formation is referred to as the ‘Internal A’. These vowels have a “buffer”

Table 1. Tone-vowel groups

Tone pattern	Vowel sequence	Examples		Gloss
		Singular	Plural	
(Tone-Vowel 1) H*	- A - ii/uu	<b>taagàa</b>	taagoogii	'window'
(Tone-Vowel 2) HLH*	- A - ee/aa/ii	<b>maataa</b>	maatàayee	'women'
(Tone-Vowel 3) L*H	- A - ii/uu	<b>raanaa</b>	ràanàkuu	'sun'
(Tone-Vowel 4) H*L	- U - aa	<b>ràafii</b>	raafukàa	'stream'

function, separating two consonants in the plural form: either i) the second and third consonant of the singular or ii) the second consonant of the singular and an extra consonant or iii) the second consonant of the singular and the reduplication of the same consonant. We treat these vowels as part of a change in the vowel sequence.

The change in vowel sequence affects the penultimate and final vowels of the plural form, never the first vowel (Wolff 1993). Thus, the plural form must consist of at least three radicals (e.g., **gàatarii** below). If a singular noun consists of only two radicals (e.g., **ràafii**, **bàakii**), a third consonant is added (principle ii):

Table 2. Plurals needing at least 3 consonants

Singular	Plural: change in tone pattern/vowel sequence	
	–	plus /k/ plus /n/
<b>gàatarii</b> 'axe'	<b>gaaturàa</b>	
<b>ràafii</b> 'stream'		<b>raafukàa</b>
<b>bàakii</b> 'mouth'		<b>baakunàa</b>

This third consonant takes either the form **k** (as in **raafukàa**) or **n** (as in **baakunàa**). We will argue below (2.2.1) that these are remnants of determiners.

Reduplication, gemination or repetition (principle iii) offer another possibility of augmenting a di-radical singular base. Sometimes we will use the term reduplication for any of the three processes. When we make the distinction, reduplication takes the form of dropping the final vowel, copying the two rightmost syllables and imposing the plural tone pattern and vowel sequence; gemination takes the form of copying the last radical; repetition involves copying the last radical plus inserting a vowel between this radical and the copied radical; these are illustrated in table 3:

Table 3. Reduplication, Repetition and Gemination

Singular	Plural Reduplication	Repetition	Gemination
<b>gàfàa</b> 'joint'	* <b>gàfgàbuu</b> > <b>gàggàbuu</b> <sup>5</sup>	* <b>gàfuḡàa</b> > <b>gàfuḡḡàa</b> <sup>6</sup>	<b>gàḡḡai</b>

We shall argue (2.2.2) that the motivation for choosing reduplication, gemination or repetition is essentially the same. We argue further that these developments were integrated into Hausa plurals at a later stage only, following an idea suggested by Wolff (1992) which he did not elaborate on.

The last pattern to be found in Hausa plural formation is suffixation (principle iv). It is a new development, restricted to a few classes only:

(4)	Singular	Plural Base	Plural Formation	Plural form
	' <b>àkwàati</b> 'box'	*' <b>akwaat</b>	SUFFIX - <b>unaa</b>	' <b>akwaatunàa</b>
		*' <b>akwaat</b>	SUFFIX - <b>ai</b>	' <b>àkwàatai</b>

On the surface these plurals are no different to those involving determiners as an additional consonant (principle ii). In fact, the suffix plurals shown in (4) developed from plurals involving determiners. The boundary between the two plural classes is not always clear but we will show (2.3.1) that there are criteria that help us distinguish between them.

### 1.3. *Historical development*

In this section we attempt to relate the four principles of plural formation to each other diachronically – in historical sequence. Crucial to our description is the establishment of independent criteria which allow us to determine the relative ages of different plural classes. We believe that such independent criteria exist and that we can show that plural classes of the same age make use of the same typological principles and that these four principles developed at different historical stages. These criteria are elucidated here.

Four clues indicate that the present system of Hausa plurals developed over time: the first is the fact that the singular forms of some plurals no longer exist. This can be illustrated with **zuuciyyaa** (example 3 above). While the plural form **zuuciyooyii** clearly has **zuuciyyaa** as a formative base – reduplicating the consonant **y** in the feminine ending **-iyaa**, the plural form **zukoocii** ignores this ending

5. Here, the **ḡ** assimilates completely to the following consonant. This phonological change is restricted to reduplicated forms (P. Newman 1986).

6. The additional gemination will be explained below (2.2.6).

and is formed from the presumed singular noun \***zuktì**; this noun no longer exists. A further morphophonological characteristic can be seen in the contrast between the actual form **zuuciyyaa** and the underlying form \***zuktì**: in the former, the long vowel **uu** is derived from a sequence of vowel plus consonant **uk**. According to Klingenberg's Law (1927/28), a velar (or labial) consonant in Hausa becomes a vowel **u** in syllable final position. The velar consonant survives in the plural **zukoocii** because, following resyllabification, it appears at the onset of the next syllable, where the law does not apply. We argue that this plural form originated at a time when Klingenberg's Law was not yet productive, forming the pair: \***zuktì** (singular) and **zukoocii** (class 5a). Later Klingenberg's Law applied, changing the (underlying) singular form to \***zuuti** which gave rise to the singular **zuuciyyaa** and the plural **zuuciyooyii** (class 15). Thus the plural class to which **zukoocii** belongs can be assumed to be older than the class to which **zuuciyooyii** belongs.

A second clue is that some plural classes are not productive in Standard Hausa: only a small number of such plurals is found and recent loanwords are not integrated into them. The class containing **zukoocii** is such a class: there are only six examples and no loanwords. Such classes contain only nouns which belong to the basic vocabulary and thus can be assumed to be very old (Parsons 1975). Other classes are more productive and incorporate numerous loanwords: the class containing **zuuciyooyii** is the most productive class in present-day Hausa. Given what we have explained above, such classes can be considered to be younger.

The third clue is repluralization, i.e. plurals formed not on the basis of a singular noun but on the basis of another (older) plural form. Compare for instance the various plural forms of the singular noun **màataa** 'woman':

(5)	Singular	Plural 1 (class 1)	Plural 2 (class 8b)	Plural 3 (class 12a)
	<b>màataa</b>	<b>maataa</b>	<b>maatàayee</b>	<b>màatàikuu</b>

Plural 1, **maataa** (HH), is formed on the basis of the singular noun **màataa** (LH). From what we know about the singular/plural relationships in classes 8 and 12, the singular **màataa** cannot be the basis for plurals 2 and 3. Instead, they are formed on the basis of the preceding plural form and not on the basis of the singular noun. We are thus able to determine the relative ages of the three forms: plural 1 is an older form than plural 2 and plural 2 an older form than plural 3. Sometimes only one noun in an already existing plural class has been repluralized. This may be true for the pair **maataa** (plural 1) / **maatàayee** (plural 2). In the case of plural 3, however, we are able to show that the whole class originated from instances of repluralization. Thus we regard the class containing **màatàikuu** as younger than the classes containing **maataa** and **maatàayee** (for a more detailed discussion of this noun see sections 2.2.1 and 2.2.5).

The fourth clue is a corollary of the third: some plurals have lost their plural reading and have become singulars. A typical example is the word **gidaa** 'house',

now used as a singular in modern Hausa but actually an old plural form (class 1) of the word **gijii** still found in the compound **Ùbangijii** 'Lord (God)'.

We relied on these clues to determine the relative ages of plural formatives and plural classes. Classes of approximately the same age make use of similar formatives; classes whose ages differ either use different formatives or have reinterpreted an older formative as part of a suffix. Classes using the same formative(s) can be grouped into systems; the relationship between formatives and systems is summarized in table 4:

*Table 4.* Plural formation systems

System	Label	Principle(s) of plural formation
1	semantic	change in tone pattern/vowel sequence
2a	prosodic	for singular nouns with 3 radicals: change in tone pattern/vowel sequence for singular nouns with 2 radicals: change in tone pattern/vowel sequence plus addition of determiner
2b		like 2a, but: reduplication introduced for singulars with 2 radicals and light first syllable
2c		like 2b, but: two new determiners introduced
3	suffix	syllable(s) containing determiner reanalyzed as suffix reduplication develops into general plural formative

## 2. The three systems

In this section we describe the development of Hausa plurals through the three systems. The systems did not develop independently of each other. Close relationships can be traced between them, and these relationships can be described within tone-vowel groups. Table 5 presents an overview of the Hausa plural systems, tone-vowel (Tone-Vowel) groups and classes.

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7. The following plural formatives are found in table 5:
- tone pattern (H\* = a series of high tones and L\* = a series of low tones)
  - VS (change in vowel sequence): final vowel (always long: -aa, -ee, -ii, -uu); the internal vowels A (<aa>, a(a), <ee> and oo) and U (<u>, u) (these vowels appear in <brackets> when they are found between two different consonants of the base; they are not in brackets when they precede a determiner or a reduplicated consonant of the base)
  - DET (determiner K<sup>1</sup>, K<sup>2</sup>, N)

Table 5. Overview plural classes<sup>7</sup>

System	Tone-Vowel group	class	Vowel sequence	DET	RED	
1	?1 (H*)	1	-aa			
	1 (H*)	2a, b	-uu <aa> -uu			
	?2 (HLH)	3			-aaC <sup>f</sup> uu	
	3 (LH)	4a, b	-ii <aa> -ii			
2	1 (H*)	5a, b 6	<aa> -ii	-aaK <sup>1</sup> ii -ooK <sup>2</sup> ii		
	2 (HLH*)	7a, b	<aa> -aa		-aC <sup>f</sup> C <sup>f</sup> aa	
		8a, b	<aa> -ee	-aaK <sup>1</sup> ee		
		9a, b		-aK <sup>1</sup> iiC <sup>f</sup> aK <sup>1</sup> ii	-aaC <sup>f</sup> ee	
	3 (L*H)	10a, b, c	<ee> -aNii	-aK <sup>1</sup> C <sup>f</sup> aK <sup>1</sup> ii	-aC <sup>f</sup> C <sup>f</sup> aC <sup>f</sup> ii	
		11		-C <sup>f</sup> aK <sup>1</sup> ii		
		12a, b		-aK <sup>2</sup> uu -aN(N)ii		
		4 (H*L)	13a, b, c	<u> -aa	-uK <sup>2</sup> aa -uNaa	
			14a, b		-uK <sup>2</sup> CfuK <sup>2</sup> aa -aaCfuK <sup>2</sup> aa	
	3	1 (H*)	15			-ooC <sup>f</sup> ii
3 (L*H)		16a, b	-uu/ii	-ai		
4 (H*L)		17		-unaa		

Each system is presented in turn. At the beginning of each section the typological principle(s) of plural formation introduced into this system is (are) discussed; this is followed by a discussion of how the classes that belong in the particular system are formed. In the discussion of the second and third systems, tone-vowel group membership plays an important role in showing the developments of, and the relationships between, the various plural classes and the two systems. In the discussion of the first system however, tone-vowel group membership is ignored because such a presentation would destroy the unity of this system. Each section is concluded by a discussion of the relative ages of the classes in the system.

d) RED (reduplicated final consonant (C<sup>f</sup>))

2.1. *System 1: The semantic system*

The first system is a collection of several classes which, according to the principles outlined in section 1.3, have to be regarded as old classes. Unlike classes in the other two systems, where phonological characteristics are the only determining factor, the singular forms in this system belong in a semantic class whose singular (and plural) has (have) particular phonological characteristics: in class 1, we find basic vocabulary ('house', animals) and a HL singular tone pattern; the nouns in classes 2 and 3 are body parts and have a HL singular tone pattern; in class 4 we find animals and a LH singular tone pattern.

class 1:	H* -aa			
	Singular	Plural		
	<hr/>			
		<b>gijii</b> 'house'	<b>gidaa</b>	
		<b>kuurèè</b> 'hyena'	<b>kuuraa</b>	
class 2:	(a) H* -uu		(b) H* <aa> -uu	
	Singular	Plural	Singular	Plural
	<hr/>		<hr/>	
	<b>gaashii</b> 'hair'	<b>gaasuu</b>	<b>gwiiwàa</b> 'knee'	<b>gwiyaayuu</b>
	<b>yaatsàa</b> 'finger'	<b>yaatsuu</b>	<b>miikii</b> 'ulcer'	<b>miyaakuu</b>
class 3:			HLH -aaC <sup>f</sup> uu	
			Singular	Plural
			<hr/>	
			<b>kafàa</b> 'leg'	<b>kafàafuu</b>
class 4:	(a) LH -ii		(b) L*H <aa> -ii	
	Singular	Plural	Singular	Plural
	<hr/>		<hr/>	
	<b>fàaraa</b> 'locust'	<b>fàarii</b>	<b>tsàakoo</b> 'chicken'	<b>tsiyàakii</b>
	<b>tsàakoo</b> 'chicken'	<b>tsàakii</b>		

2.1.1. *Principle i: Change in tone pattern and vowel sequence.* The plural formative associated with this system is change in tone pattern and vowel sequence (principle i). The change in vowel sequence only affects the final vowel. This is peculiar to this system; in the second plural system, the plural form adds at least one more syllable to the (underlying) singular form. Compare how phonologically similar singulars are treated in the two different systems:

(6)	semantic system		prosodic system	
	singular	plural	singular	plural
(a)	<b>gijii</b> (*gidii)	<b>gidaa</b> 'house'	<b>kibiyàa</b> (*kibii)	<b>kibaawuu</b> 'arrow'
(b)	<b>gaashii</b> (*gaasii)	<b>gaasuu</b> 'hair'	<b>dookii</b> (*dawkii)	<b>dawaakii</b> 'horse'

In the semantic system, tone pattern and final vowel are changed. In the prosodic system, on the other hand, plurals are formed by changing the tone pattern *and* the final vowel and by inserting an additional vowel, the “Internal A”, between the final and the penultimate consonant; here, singular nouns having two syllables have to either add a third consonant or split a sequence of two vowels into vowel plus consonant. In such a system we would have expected forms such as \***gidaawuu** (for **gijii**) and \***gawaashii** (for **gaashii**) respectively. Instead, only the final vowel is changed.

However, eight singular nouns are found in this system with a plural form in which the Internal A is inserted, either splitting two vowels (classes 2b and 4b) or repeating the final radical (class 3). They thus resemble plural forms found in later plural classes (compare classes 7 to 9 in the prosodic system) but neither the singular form (HL, light first syllable) nor the final plural vowel **-uu** fit these other classes. They look like hybrid forms, with some elements (final vowel) characteristic of the semantic system and others (HLH tone pattern, Internal A, repetition of final radical) found in the prosodic system. We consider class 3 to be a transitional class.

This first principle, change in tone pattern and vowel sequence, is found in all plurals. Given the widespread distribution of this feature across Chadic languages this is not surprising. There has been extensive discussion of this formative for Hausa (see Newman 1975, Pilszczikowa-Chodak 1972 and 1975, Wolff 1993) and we do not discuss it further. We view it as the oldest principle in Hausa plural formation because it is the only identifiable principle in the oldest plural classes.

2.1.2. *Plural formation.* Plurals in classes 2 and 4 are formed by changing the tone pattern (H\* in class 2 and L\*H in class 4) and by adding a final vowel **-uu** in class 2 and **-ii** in class 4. These different final vowels can be analyzed in terms of Pilszczikowa-Chodak’s (1972 and 1975) “final vowel contrast”: singular nouns of class 2 end in **-ii** or **-aa** and form a plural by adding **-uu**; singular nouns of class 4 end in **-uu**<sup>8</sup> or **-aa** and form a plural by adding **-ii**.

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8. P. Newman (1990b) was able to derive the final vowel **-oo** of singulars in this class from an underlying **-uu**.

(7)	Class	Singular	Plural
	2a	<b>yaatsàa</b> 'finger'	<b>yaatsuu</b>
	4a	<b>fàaraa</b> 'locust'	<b>fàarii</b>

The plural of class 1 is formed in all cases by imposing a tone pattern H\* and adding a final vowel **-aa**. One exceptional feature deserves comment: in the following singular form, a change in the length of the first vowel can be observed:

(8)	Singular	Plural (class 1)
	<b>màcè, màataa</b> 'woman'	<b>maataa</b>

The plural form, (HH) **maataa**, is probably formed on the basis of the singular noun (LH) **màataa**. But the existence of the singular form **màcè** (\***màtè**) with a short first vowel is puzzling. These forms are related but we are not able to explain the difference in vowel length. In this respect it is interesting to note that all singular nouns in classes 2a and 4a have a long first vowel <**aa**>. Perhaps we are confronted with derived forms here, a possibility which is suggested by a corresponding form in class 4b, indicating that this <**aa**> might not be the basic vowel, e.g.:

(9)	Singular	Plural (class 4a)	Plural (class 4b)
	<b>tsàakoo</b> 'chicken'	<b>tsàakii</b>	<b>tsiyàakii</b>

The 4b plural **tsiyàakii** would seem to be formed on the basis of a singular form \***tsiikoo** (rather than **tsàakoo**). If this is true then this would mean that **tsàakoo** is not basic but rather derived from a form \***tsiikoo** via the insertion of a formative <**aa**>. Corresponding forms are found in class 2b:

(10)	Singular	Plural (class 2b)
	<b>gwiiwàa</b> 'knee'	<b>gwiyaayuu</b>
	<b>miikii</b> 'ulcer'	<b>miyaakuu</b>

These features suggest that some singulars in the semantic system are derived; but there is no conclusive evidence of this and they are treated here as basic singular forms.

As mentioned above, classes 2b, 3 and 4b deviate from the pattern described so far in that they insert an internal vowel **-aa-**. In classes 2b and 4b we find only three nouns (examples 9 and 10 above). Class 3 contains only five nouns:

(11)	Singular	Plural (class 3)
	<b>gwiiwàa</b> (* <b>guwàa</b> ) 'knee'	<b>guwàawuu</b>
	<b>tsuwèè</b> 'testicles'	<b>tsuwàawuu</b>
	<b>ɖuwainiyaa</b> 'buttocks'	<b>ɖuwàawuu</b>
	<b>kafàa</b> 'leg'	<b>kafàafuu</b>
	<b>'idòo</b> (?*'idòn) 'eye'	<b>'idàanuu</b>

The Internal A appears here as a regular plural formative between the final lexical consonant and the repetition of the same consonant. The presence of the **n** in 'idàanu is difficult to explain (see note 18).

2.1.3. *Age of classes.* All four classes can be considered to be very old, each contains only a small number of plural forms; none of them is productive; (feminine) endings play no role (e.g., **ɗuwainiyaa**, singular, **ɗuwàawuu**, plural). There are some additional indications of their age. Class 1 can be considered to be the oldest. Firstly, the nouns found here are nouns denoting basic words such as persons, animals and plants (see Parsons 1975). Secondly, in most cases the old plural form has lost its plural reading and acquired a singular reading instead. The old singulars are generally lost but a few can still be found either in compounds or with a special meaning, e.g., **giwaa**, 'elephant' still has a corresponding noun **giyè(e)** (epithet of a chief). This reanalysis of plural nouns as singular may well explain why a number of nouns ending in **-aa** are now felt to be masculine singular.<sup>9</sup> Thirdly, this reanalysis made repluralization possible, i.e., new plurals (in class 9) were formed on the basis of old plurals (class 1), e.g.:

(12)	Singular	Plural (class 1)	Plural (class 9b)
	<b>gijji</b> (* <b>gidii</b> ) 'house'	<b>gidaa</b>	<b>gidàajee</b> (* <b>gidàadee</b> )

Classes 2, 3 and 4 also contain basic nouns which again have strong semantic connections (see Parsons 1975): classes 2 and 3 contain nouns referring to body parts and class 4 contains animals. All class 3 nouns have a repluralized form in classes 13 or 14 based on the class 3 plural, e.g.:

(13)	Singular	Plural (class 3)	Plural (class 13c)
	<b>'idòò</b> (?* <b>'idòn</b> ) 'eye'	<b>'idàanu</b>	<b>'idandunàa</b>

In all three classes most singular nouns have secondary plurals in other, more productive, classes, mainly in class 15 (singulars ending in a final vowel **-aa**) and class 17 (those not ending in a final vowel **-aa**), e.g.:

(14)	Singular	Plural (class 2a)	Plural (class 17)	Plural (class 15)
	<b>kwàaɗoo</b> 'frog'	<b>kwàaɗii</b>	<b>kwaadunàa</b>	
	<b>fàaraa</b> 'locust'	<b>fàarii</b>		<b>faaroorii</b>

But, unlike the nouns of class 1, these nouns have not lost their plural reading, and the old singular forms are still present.

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9. Both masculine singular and plural nouns are found with the same copula (**nèe**) and linker (**-n**). In modern Hausa, nouns ending in **-aa** normally have feminine gender. Words such as **gidaa** 'house' are exceptional in being masculine; many such exceptions have HH tone pattern. The reason is probably as follows: they do not occur with the feminine (singular) copula **cèe**, or with the feminine (singular) linker **-F**, because they are not feminine *singular* – they are, originally, *plural*.

2.2. *System 2: The prosodic system*

Most plural classes belong in this system. Two principles of plural formation (principle ii, addition of a third consonant, and principle iii, reduplication) are introduced, and the system is divided into three sub-systems, see Tables 4 and 6.

The second system is termed the prosodic system, a system in which syllable structure is the defining criterion; it differs from the semantic system, firstly, in the way plural nouns are formed and, secondly, in the relationship between singular and plural nouns. With regard to the latter, it is the phonological characteristics of the singular noun (tone pattern, consonant quality, final vowel) which determine the choice of plural class; however the number of radicals has special significance. In the case of tri-radical singular nouns tone pattern and vowel sequence of the plural are changed. Di-radical singulars are augmented in various (systematic) ways: they either add another consonant not found in the singular form (system 2a), or they reduplicate a final consonant/syllable (system 2b). The same principles are found again in system 2c. The prosodic system is summarized in Table 6:

Table 6. Prosodic system

	Singular: 3 radicals		Singular: 2 radicals			
	singular	plural	syllable 1 = heavy		syllable 1 = light	
			singular	plural	singular	plural
System 2a	<b>garkèè</b>	<b>garàakee</b>	<b>kiifi</b>	<b>kiifàayee</b>		
System 2b					<b>gidaa</b>	<b>gidàajee</b> (*gidàadee)
System 2c	<b>gàatarii</b>	<b>gaaturàa</b>	<b>ràaffi</b>	<b>raafukàa</b>	<b>gàarii</b>	<b>garuurukàa</b> (*garukrukàa)

Before introducing the classes belonging in this system, we discuss the principles of plural formation of this system (2.2.1: addition of an extra consonant and 2.2.2: reduplication). For ease of presentation we discuss systems 2a, 2b and 2c together within the framework of tone-vowel groups. As mentioned in the introduction, tone-vowel groups are a construct used to facilitate the description of the development of plural classes; they are especially useful in the description of the second system.

2.2.1. *Principle ii: Addition of an extra consonant (determiner).* A number of plural forms add an extra final consonant to the underlying singular form. This consonant is either **k** or **n**:

(15)	Class	Singular	Plural
	6	yaaròo 'boy'	yaarookii
	10a	garkaa 'garden'	garèekanii
	10b	maataa 'women'	maatàttakii
	12a	goonaa 'farm'	gònàkii
	12b	wàasaa 'game'	wàasàn(n)ii
	13b	ràafi 'stream'	raafukàa
	13c	bàakii 'mouth'	baakunàa
	13b	gàrii 'town'	garuurukàa (*garukrukàa)
	13c	jikii 'body'	jikunkunàa

While the tone patterns/endings could be interpreted as different suffixes (HH-oki, HLH-ani, HLH-aki, LLH-aki, LLH-ani, HHL-uka, HHL-una), such an interpretation would ignore generalizations which can be shown to hold across different classes.

In this section we will argue that the extra consonant at the onset of the final syllable in the plural form is a remnant of an old determiner. Such an analysis was hinted at by Frajzyngier (1977) and Schuh (1983); they had already drawn attention to the occurrence of phonetically similar forms (containing **k** or **n**) in various Chadic languages, marking definiteness, gender, plurality, etc. and arguing that these were reflexes of proto-Chadic demonstratives that had become grammaticalized with different functions.<sup>10</sup> In modern Hausa the consonants **k** and **n** are still found in plural forms;<sup>11</sup> Wolff (1993: 146) calls them determiners. These authors agree that similar forms were once present in the singular noun, where they functioned as determiners in word final position. Later, these consonants underwent lenition, leaving a trace as a long final vowel. In plural forms, on the other hand, they occur in non-final position, an environment where lenition was originally blocked. In present-day Hausa, determiners survive in plurals only as parts of frozen suffixes, having lost their determiner function (2.3.1).

Besides **k** and **n** two other consonants appear in plural forms: **w** (or diphthong **au**) and **y** (or diphthong **ai**):

10. See Greenberg (1978) for details of the grammaticalization process involved.

11. The consonants **k** and **n** have retained determiner functions: i) **k**: in North Hausa **kîn** (= Standard Hausa **ɗin** the definite marker); ii) **n**: in **na** 'of'; as the linker **-n** 'of'; as the definite marker **-n** (with low tone); in **wani** 'a' and in **wannàn/wancàn** 'this/that'. Present day Hausa still has a determiner **n**, but it is not the same as the one contained in the plurals, compare the following singular/plural pair: **gàrmaa/garmunàa**. The plural **garmunàa** cannot be formed on the basis of the present day determiner **n** because **gàrmaa**, being a feminine noun, takes the present-day determiner **ɓ** (< t), not the determiner **n**.

(16)	Class	Singular	Plural
	5b	<b>kibiyàa</b> (*kibì) 'arrow'	<b>kibau, kibaawuu</b> <b>kibai</b>
	8b	<b>maataa</b> 'women'	<b>maatàayee</b>
	9a	<b>mazaa</b> 'husband'	<b>mazàizai</b>
	11	<b>gwànni</b> 'expert'	<b>gwànnai, gwànàayee</b> <sup>12</sup>
		<b>marinaa</b> 'dye-pit'	<b>màrìnai, màrìnàyèe</b> <sup>13</sup>

While the status of **k** and **n** as determiners is widely accepted, the status of **w** and **y** is far from clear. Newman (1972) and Leben (1977) argue that **y** is epenthetic; Wolff (1993: 163, fn. 9, and 170) suggests that **y** derives from a determiner \***i**. Both analyses are possible and further analysis is needed; the present authors argue that **w** and **y** are determiners rather than epenthetic.

The reason for this choice is that there is some evidence that **w** and **y** derive from a consonant **k**. Such a derivation is consistent with the interpretation of **k** as a determiner but makes the epenthetic interpretation rather difficult to uphold (as an epenthetic plosive). Firstly, there are some dialectal indications for this derivation: whereas in Standard Hausa singular nouns having a high tone pattern and a heavy, open, first syllable, usually form their plural by adding the **y**; in some Hausa dialects, a **k** is used instead (examples from Wolff 1993: 205), e.g.:

(17)	Singular	Plural (Hardawanci)	Plural (Standard) <sup>14</sup>
	<b>gaawaa</b> 'corpse'	<b>gaawàakii</b>	compare: * <b>gaawàayee</b>
	<b>geeroo</b> 'millet'	<b>geeràakii</b>	compare: * <b>geeràayee</b>
	<b>sauroo</b> 'mosquito'	<b>sauràakii</b>	compare: * <b>sauràayee</b>

Secondly, an underlying **k** would allow us to explain how the reduplicated plurals of class 10b are formed.

(18)	Singular/Plural	Plural (class 8b)	Plural (class 10b)
	<b>maataa</b> 'women' <sup>15</sup>	<b>maatàayee</b>	<b>maatàttakii</b>

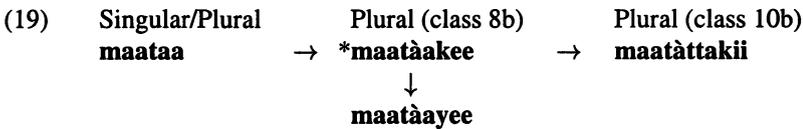
12. Other authors (Abraham 1962:352, Bargery 1934: 424, Newman and Newman 1977:47, R. Ma Newman 1990 under 'expert', Wolff 1993:171) give the plural of **gwànni** as HLH **gwànàayee**. McIntyre has heard the L\*H form **gwànàayee**; this form parallels other L\*H forms given by Abraham and Bargery: **gwànàssai, gwànnai**.

13. The plural form **màrìnàyèe** is the regular plural for all nouns of place and instrument in West Hausa; the fact that the /y/ is geminated in these plural forms is typical for these dialects.

14. These HLH plural forms would be expected on the basis of the phonology of the singular. In Standard Hausa, the nouns **geeroo** and **sauroo** have no plural; **gaawaa** has the plural **gaawàiwai** (probably derived from **gaawàayii-wàayii**, see 2.2.4). We do not know if there is a regular **k/y** alternation in Hardawanci.

15. The noun **maataa** (HH) 'women', is already a plural (of LH **màataa**) so that the other plurals here are all reduplicated forms.

The reduplicated class 10b plural (**maatàttakii**) cannot derive directly from the singular (**maataa**); however, since all singulars of class 10b are also found in class 8b, it is not unreasonable to look to **maatàayee** as the base of **maatàttakii**. There is however a small problem: if **maatàayee** is the base of the class 10b plural, we would expect the plural **\*maatàytakii** not **maatàttakii**.<sup>16</sup> If, on the other hand, we hypothesize an underlying **k** we are able to explain the relationship: originally, a plural **\*maatàakee** was formed with the consonant **k** from which the present-day **maatàayee** evolved through a process of lenition. The same plural **\*maatàakee** formed the plural base of **maatàttakii**, giving the derivation: **maatàttakii** < **\*maatàktakii** < **\*maatàakee**. These relationships are shown in the following:



The argument that **w** derives from a consonant **k** has a parallel in Hausa: the development **k** > **w** > **u** is independently attested (Klingenheben's Law) and is also found in some plural classes having alternate forms:

(20)	Class	Singular	Plural
	13b	<b>gàrii</b> 'town'	<b>garuurukàa</b> <b>garuuruwàa</b>
	12a	<b>kàree</b> ( <b>*kàrnee</b> ) <sup>17</sup> 'dog'	<b>kàrnàwuu</b> <b>kàrnau</b>

However, the **k** > **y** development still needs to be explained since it is not motivated phonetically. We propose that **k** changed to **w** through a process of lenition, and only then did **w** change to **y** – through a process of assimilation in the environment of front vowels, i.e., **y** preceding a front vowel **-ii** or **-ee** (as in **\*kibaayii**) and **w** preceding the back vowel **-uu** (as in **kibaawuu**). Non-conditioned alternations between **-ii** and **-uu** are common in Hausa and can also be found in some plural classes:

16. Newman (1986) has shown that, in reduplicated forms, **y** never assimilates to the following consonant. The assimilation of a **-kt-** sequence as in, e.g., **\*maatàktakii** to **-tt-** in **maatàttakii** is normal.

17. We do not know the origin of **n** in **kàrnàwuu**; it is tempting to see it as a reflex of an old determiner **n** (**n<sup>1</sup>**, analogous to **k<sup>1</sup>**), but analogy is the only argument in favour of such an interpretation, there is no independent evidence. The **n** appears in three other plural words: 'eye' **'idòo** (sg.), **'idàanu** (pl.), 'head' **kâi** (sg.), **kaanuu** (pl.) and 'ox' **sâa** (sg.), **shaanuu** (pl.). This **n** may have been a radical. Newman (1979b) argues this for **sâa/shaanuu**, referring to the feminine form **saaniyaa**.

(21)	Class	Singular	Plural
	16b	<b>kujèeraa</b>	<b>kùjèerii</b>
		'chair'	<b>kùjèeruu</b>

Parallels for the w/y alternation before back/front vowels are also found in the verbal system, e.g., **hayèe** 'mount, climb' vs. **hawaa** 'mounting, climbing'.

After this determiner **k** (referred to as **k**<sup>1</sup>) had lost its function and phonetic substance the process of grammaticalization repeated itself and younger determiners appeared: we refer to them as **k**<sup>2</sup> and **n**, e.g. (22). Such cycles are common in processes of grammaticalization; see Heine and Reh 1984.

(22)	Class	Singular	Plural
	13b	<b>ràafii</b> 'stream'	<b>raafukàa</b>
	13c	<b>bàakii</b> 'mouth'	<b>baakunàa</b>

The fact that **k**<sup>2</sup> and **n** are younger than **k**<sup>1</sup> can be argued as follows: firstly, we find instances of repluralization where a plural (containing **k**<sup>2</sup>) is formed not from a singular base but from a plural base (containing **k**<sup>1</sup>):

(23)	Singular/Plural	Plural 1 (class 8b)	Plural 2 (class 12a)	Determiner
	<b>màataa/maataa</b>	<b>maatàayee</b>		<b>k</b> <sup>1</sup> → <b>y</b>
	'woman'	<b>maatàayee</b>	<b>màatàikuu</b>	<b>(k</b> <sup>1</sup> → <b>y</b> + <b>k</b> <sup>2</sup>

Plurals such as **màatàikuu**, containing the determiner **k**<sup>2</sup>, were formed on the basis of plurals such as **maatàayee** (section 2.2.4). As we suggested above, the **y** in such plurals is the determiner **k**<sup>1</sup> after it underwent lenition. A second reason is that, while **k**<sup>1</sup> usually surfaces as **w** or as **y**, **k**<sup>2</sup> surfaces as **k**; lenition of **k**<sup>2</sup> is not common and has occurred much later.

Thus we suggest the following development: Old Hausa had one determiner, **k**<sup>1</sup> which appeared within the vowel sequence **aa-ii** ~ **aa-uu**, leading to the forms **aakii** and **aakuu** respectively. Through grammaticalization, its functional status as a marker of definiteness was lost and it was reanalyzed as part of the plural formative. The phonetic substance of **k**<sup>1</sup> underwent lenition to a point where only traces suggest the presence of the (former) determiner. Lenition proceeded via **aayii** and **aawuu** to **-ai** and **-au** respectively. The same consonant reappeared later as **k**<sup>2</sup>, together with **n**. Thus in present day Hausa, **k**, **n**, **y** and **w**, which ultimately derive from determiners, are found as plural formatives.

2.2.2. *Principle iii: Reduplication, gemination and repetition.* The forms involved in processes of reduplication, gemination and repetition have been mentioned in the introduction (1.2). In this section we are concerned with the age of this typological principle.

Paul Newman (1972) has noted for one of the plural classes that gemination and reduplication coincide with a light first syllable in the singular form.<sup>18</sup> The same is true for almost all classes where singulars with a light first syllable are found. In the following examples the first of each pair has a light first syllable and is contrasted with a singular with the same tone pattern but a heavy first syllable (long vowel):

(24)	Class	Singular	Plural
	9b	<b>mazaa</b> 'husbands'	<b>mazàajee</b> (*mazàazee)
	8b	<b>maataa</b> 'women'	<b>maatàayee</b>
	11	<b>ràboo</b> 'portion' <b>jàakii</b> 'donkey'	<b>ràbbai</b> <b>jàakai</b>
	13a	<b>daḥàsii</b> 'lesson' <b>gàatarii</b> 'axe'	<b>daḥussàa</b> <b>gaaturàa</b>
	13b	<b>gàrii</b> 'town' <b>ràaḥii</b> 'stream'	<b>garuurukàa, garuuruwàa</b> <b>raafukàa</b>
	13c	<b>jìkii</b> 'body' <b>jàakii</b> 'donkey'	<b>jikunkunàa, jikkunàa</b> <b>jaakunàa</b>

Whether reduplication, gemination or repetition is chosen depends largely on the plural class. But the phonological characteristics of the singular noun are always the same (light first syllable), and the basic motivation remains the same: to augment the plural base.

This rule applies in all but a few plural forms, e.g.:

(25)	Class	Singular	Plural
	5b	<b>birii</b> 'monkey'	<b>birai</b>

In such cases we would expect a geminated plural (here: \***birrai**). Interestingly, all these apparently irregular plural forms are old plurals according to the criteria presented in section 1.3; see 2.2.5 for a more detailed discussion of this class. This suggests that gemination was not always present in Hausa plurals and, for this reason, we argue that gemination is a younger plural formative.

Many of these non-geminated plural forms are lost; some have been reanalyzed and survive as singular forms (compare note 23). But at least for some of them there are morphological indications that a non-geminated plural form of the **birai** type once existed, compare:

18. Authors working within Optimality Theory Framework (e.g., Rosenthal 1999) elaborate on this observation.

(26)	Class	Singular	Plural
	1	<b>mijii</b> 'husband'	<b>mazaa</b>
	9a		<b>mazàizai</b>
	9b		<b>mazàajee</b> (*mazàazee)

This example lists all attested plural forms of the singular noun **mijii**; of interest here is the reduplicated class 9a form **mazàizai**: This plural could not have been formed on the basis of any of the other forms, singular or plural; it must be formed from a base \***mazai** or \***mazàayii** (see note 22), which suggests the parallel to the attested singular/plural pair **birii/birai**: it is likely that there was once a non-geminated plural of the form \***mazai**, now lost. A similar analysis would hold for all forms found in class 9a (compare section 2.2.4).

If reduplication was originally introduced into Hausa plurals to augment singular nouns having a light first syllable, the pattern was later expanded regardless of syllable weight so that instances of sporadic reduplication are now found in almost all classes, e.g.:

(27)	Singular	Plural (simple)	Plural (reduplicated)
	<b>littaafii</b> 'book'	<b>littàafai</b>	<b>littàttàafai</b> (class 16)
	<b>bàakii</b> 'mouth'	<b>baakunàa</b>	<b>baakunkunàa</b> (class 13c)

Only a few nouns are affected by sporadic reduplication. The reduplicated plural was formed on the basis of a simple plural, and is thus younger. In two cases (where there is a reasonable number of singular nouns and where only a few examples have alternative forms), reduplication has advanced to a point where we are justified in assuming new classes:

(28)	Singular	Plural (simple)	Plural (reduplicated)
	<b>maataa</b> 'women'	<b>maatàayee</b> (*maatàakee)	<b>maatàttakii</b> (class 10b)
	<b>ràafii</b> 'stream'	<b>raafukàa</b>	<b>raafuffukàa</b> (class 14a)

And finally, in the most productive class (class 15) the plurals are formed entirely by repetition of the last radical, regardless of the syllable weight or number of syllables of the singular form (see 2.3.3). Thus reduplication has developed from a phonological rule applying to singulars having a light first syllable into a morphological plural formative.

We do not know why or how reduplication, gemination and repetition were introduced into Hausa plurals.<sup>19</sup> Wolff (1992) suggests that it may have been caused by language contact. In the Northwestern dialects we find a tendency to geminate

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19. Reduplication is widespread in Chadic; however, Newman (1990a) says that it cannot be reconstructed with any confidence for Proto-Chadic. We think that the forms and functions of reduplication in Hausa plurals described in this section must have originated at a later stage.

plurals. From these dialects it may have spread into Standard Hausa. Al-Hassan (1998) suggests a semantic reason: simple plurals have a meaning of ‘more than one’, whereas reduplicated plurals have a meaning of ‘very many’ or ‘many and varied’. This discussion, however, is beyond the scope of the present study.

We now turn to the classes in system two. They are analyzed within tone-vowel groups (henceforth: Tone-Vowel group). The subclasses 2a, 2b, 2c refer to stages in the prosodic system, see Table 4.

2.2.3. *Tone-Vowel Group 1 (H\*)* The plurals of this group share the common tone pattern H\* with a high final vowel (-ii) and a low penultimate vowel (-aa-), the Internal A.

class 5 (system 2a):

(a) H* <aa> -ii		(b) H* -aaK <sup>1</sup> ii	
Singular	Plural	Singular	Plural
<b>tunkiyaa (*tumki)</b>	<b>tumaakii</b>	<b>birii</b>	<b>birai (*biraayii)</b>
‘sheep’		‘monkey’	
<b>zuuciyaa (*zuktì)</b>	<b>zukoocii</b>	<b>kibiyàa (*kibì)</b>	<b>kibai (*kibaayii)</b>
	‘heart’	‘arrow’	<b>kibau, kibaawuu</b>

class 6 (system 2c):

H* -ooK <sup>2</sup> ii	
Singular	Plural
<b>yaarò</b> ‘boy’	<b>yaarookii</b>

In class 5 the Internal A generally takes the form -aa-; however, following a velar plosive or ejective it appears as -oo-:

(29)	Singular	Plural (class 5)
	<b>zuuciyaa (*zuktì)</b> ‘heart’	<b>zukoocii</b>
	<b>haurèe (*hafrè)</b> ‘tooth’	<b>hafoorii</b>
	<b>jijiyaa (*jigjì)</b> ‘vein’	<b>jigoojii</b>
	<b>riijiyaa (*rigjì)</b> ‘well’	<b>rigoojii</b>

In class 6 an -oo- appears regardless of the phonetic environment. Because of the allophonic relationship between -aa- and -oo- in class 5, we consider the -oo- in class 6 to be a reflex of the same Internal A. We agree here with Parsons (1975) and Wolff (1993) who independently derive the -oo- from \*aa. The Internal A is always inserted between the penultimate and final radicals of tri-radical nouns (class 5a) and between the final radical and added determiner in the case of di-radical nouns (classes 5b, 6).

The k<sup>1</sup> determiner of class 5b has been discussed extensively in section 2.2.1; in class 6 a k<sup>2</sup> determiner appears. We are not sure about the status of this class,

mainly because we find only two nouns here. There is another singular noun **hantoonii** (Sokoto Hausa, 'dried mucus') which may be an old plural (< **hancii** 'nose') and may belong in this class, adding the determiner **n**. However, such plural formations are sporadic. Class 6 perhaps never established itself as a productive class.

Classes 5a and 5b are definitely very old, exhibiting all the features indicating age: (i) lenition of the determiner **k**<sup>1</sup> through **y** to a diphthong **ai** (**\*kibaakii** > **\*kibaayii** > **kibai**); (ii) ignoring the feminine suffix in the plural (**kibiyàa** (**\*kibi**) > **kibai**); (iii) singular/plural alternations following Klingenberg's Law (**zuuciyaa/zukoocii**); (iv) some plurals (e.g., **hafoorii** in (29) above) have lost their plural reading in favour of a singular reading; (v) they have only a few members.

The age of the two plurals in class 6, **yaarookii** (< **yaarò** 'boy') and **tsummookii** (< **tsùmmaa** 'rags'), is difficult to establish. They may be repluralized forms (from class 7 plurals); **tsùmmaa** 'rags' has both a plural form and a plural reading; **yaarò** has another plural form **yàaraa**.

2.2.4. *Tone-Vowel Group 2 (HLH\*)* The classes in this group are grouped together because of their HLH\* plural tone pattern and the Internal A (-aa-, -a- or -ee-). Two different final vowels are found in this group, a low vowel -aa (class 7) and a non-low vowel -ee or -ii (classes 8–10); we have classified them together on the basis of the tone pattern. Much of the variation found in this Tone-Vowel group is due to different kinds of reduplication. Furthermore, many plurals in this group are formed on the basis of plural rather than of singular nouns. It is thus possible to set up a historical sequence between the classes of this group.

class 7 (system 2a/2b):

(a) HLH <aa> -aa

Singular	Plural
<b>garkèe</b>	<b>garàakaa</b>
'herd'	

(b) HLH -aC<sup>f</sup>C<sup>f</sup>aa

Singular	Plural
<b>geefèe</b> ( <b>*gayfèe</b> )	<b>gyâffaa</b>
'side'	

class 8 (system 2a/2b):

(a) HLH <aa> -ee

Singular	Plural
<b>garkaa</b>	<b>garàakee</b>
'garden'	

(b) HLH -aaK<sup>1</sup>ee

Singular	Plural
<b>kiifi</b>	<b>kiifàayee</b>
'fish'	

class 9 (system 2b):

(a) HLH -aaK<sup>1</sup>iiC<sup>f</sup>aaK<sup>1</sup>ii

Singular	Plural
<b>mazaa</b>	<b>mazàizai</b>
'husbands'	

(b) HLH -aaC<sup>f</sup>ee

Singular	Plural
<b>mazaa</b>	<b>mazàajee</b>
'husbands'	

class 10 (system 2c):

(a) HLH* <ee> -aNii		(b) HLH* -aK <sup>1</sup> CfaK <sup>1</sup> ii		(c) HLH* -aC <sup>f</sup> C <sup>f</sup> aC <sup>f</sup> ii	
Singular	Plural	Singular	Plural	Singular	Plural
<b>garkaa</b>	<b>garèekanii</b>	<b>maataa</b>	<b>maatàttakii</b>	<b>gidaa</b>	<b>gidàddajii</b>
'garden'		'women'		'house'	

The status of class 7 is difficult to determine. Its singular forms have a HL tone pattern – more like the nouns of Tone-Vowel group 1 and unlike the predominant H\* tone pattern in this group. Its plural form shares the HLH tone pattern and the Internal A, but its final vowels **-aa** and **-uu** differ from others in this group.<sup>20</sup>

Di-radical nouns in class 7 are treated as if they had three radicals. This is again similar to class 5 (Tone-Vowel group 1):

(30)	Singular	Plural (class 5)
	<b>dookii</b> (*dawki) 'horse'	<b>dawaakii</b>
	<b>zuuciɣaa</b> (*zuktì) 'heart'	<b>zukoocii</b>

The same pattern is found in class 7 where we find real tri-radical singulars (example a) alongside apparent di-radical singulars (examples b to d):

(31)	Singular	Plural (class 7)
(a)	<b>garkèe</b> 'herd'	<b>garàakaa</b>
(b)	<b>geefèe</b> (*gayfèe) 'side'	<b>gyâffaa</b> (*gayàafaa)
(c)	<b>taurèe</b> (*tawrèe) 'goat'	<b>tâuraa</b> (*tawàaraa)
(d)	<b>kwiifii</b> (*kwiɣfii) 'side of body'	<b>kwiɣàafaa</b>

The Internal A is inserted between the last two radicals (example a). In example (b) the singular noun has apparently only two radicals; however, because of the plural tone pattern we suppose that, underlyingly, three radicals are present: the second radical, being a semi-vowel, has merged with the preceding vowel. In some nouns remnants of the original consonants are still visible in the form of a diphthong (example c). Traditionally forms like **gyâffaa** were often analyzed as originating from a form \*g<sup>y</sup>eefàafaa (with a repeated second consonant) via \*gyêeffaa (P. Newman 1997). We do not adopt such an analysis here partly because we have forms with a diphthong (example c) or even the underlying consonant (example d) rather than with a repeated second consonant.<sup>21</sup>

20. We treat the **-aa** as the basic final vowel; class 7 plurals ending in **-uu** usually have an alternative form ending in the regular vowel **-aa**. Compare the following forms:

Singular	Plural a	Plural u
(a) <b>kurmi</b>	<b>kuràamaa</b>	<b>kuràamuu</b>
(b) <b>geebèe</b>	<b>gyàbbaa</b>	<b>gyàbbuu</b>

These forms ending in **-uu** should not be confused with the forms found in class 3 (semantic system). In class 7, we have an example of phonological assimilation: it affects nouns having either i) an u or i as first vowel (example a) or ii) a labial consonant as final radical (example b).

The other classes in this Tone-Vowel group, however, behave differently with regard to nouns having two radicals. Compare the following forms:

(32)	Class	Singular	Plural
	8a	<b>garkaa</b> 'garden'	<b>garàakee</b>
	8b	<b>kiifi</b> 'fish'	<b>kiifàayee</b>

In class 8a the Internal A is inserted, as expected, between the last two radicals. But in 8b we find an extra consonant *y* which we have analyzed as being the reflex of determiner **k**<sup>1</sup> (section 2.2.1). We would have expected a form **\*kiyàafee**, parallel to the forms found in class 7, the semantic system and Tone-Vowel group 1:

(33)	Class	Singular	Plural
	2b	<b>miiki</b> ( <b>*miyki</b> ) 'ulcer'	<b>miyaakuu</b>
	5a	<b>dookii</b> ( <b>*dawki</b> ) 'horse'	<b>dawaakii</b>
	7a	<b>kwiifii</b> ( <b>*kwiyfii</b> ) 'side of body'	<b>kwiyàaḃaa</b>

The differences between class 7 (and classes 5 and 2) on the one hand and class 8 on the other, lead us to think that, at a certain point in time, plural formation quite literally underwent a radical reorganization, i.e., a reorganization of the radicals. Up to this point, singular nouns having two radicals and a long first vowel (i.e. a heavy, open first syllable) patterned with nouns having three radicals inserting an Internal A without adding another consonant; columns 2 and 3 of Table 7, whereas singular nouns having two radicals and a light first syllable had to add a determiner **k**<sup>1</sup> (column 1):

Table 7. Initial situation in the prosodic system

	(1) S <sup>1</sup> : light, open		(2) S <sup>1</sup> : heavy, open		(3) S <sup>1</sup> : heavy, closed	
	Singular	Plural	Singular	Plural	Singular	Plural
class 5	<b>kibiyàa</b> ( <b>*kibii</b> )	<b>kibai</b> <b>*kibaayii</b>	<b>dookii</b> ( <b>*dawki</b> )	<b>dawaakii</b>	<b>tunkiyaa</b> ( <b>*tumkii</b> )	<b>tumaakii</b>
class 7	–	–	<b>kwiifii</b> ( <b>*kwiyfii</b> )	<b>kwiyàaḃaa</b>	<b>garkèe</b>	<b>garàakaa</b>

In a later development (Table 8), the plural formation of di-radical singulars changed (columns 1 and 2) while the formation of tri-radical singulars remained the same (column 3). Di-radical singulars formed their plural by adding a deter-

21. We see the repetition of the final radical (**gyàḃfaa**) as a later addition, made necessary by the loss of one syllable.



The /-ee-/ in **garèkanii** seems to be an Internal A; however, we cannot explain why it surfaces as /-ee-/. It is an idiosyncratic form, repluralizing and adding the determiner **n**.

Class 7 is clearly an old class: it is not productive, there are only a small number of nouns, and, in some cases, an underlying consonant surfaces (Klingenheben's Law). However these characteristics do not clarify its age relative to the other classes in this Tone-Vowel group. Our main evidence comes from comparing class 7 with classes outside this group, viz., classes 2b and 5a, whose pattern of plural formation differs from the one found in classes 8 to 10 and is probably older.

The relative ages of classes 8 to 10 are easier to establish. Class 8 is the oldest of these three classes: the determiner **k**<sup>1</sup> has weakened to **y**, **kiifàayee** < \***kiifàakee**; feminine suffixes do not form part of the plural, e.g., **amàaree** < **amaryaa** 'bride'; and the consonant correspondences between singular and plural have been obscured by the application of Klingenheben's Law, e.g. **bugàajee**, plural < \***bugzuu** > **buuzuu**, singular 'Tuareg'. Most such singulars also have a secondary plural not exhibiting this alternation, e.g.: **buuzàayee** < **buuzuu**. This class was probably still productive when singulars changed from \***bugzuu** to **buuzuu**. Class 8 (taking all singular nouns with a H\* tone pattern and heavy first syllable) and class 9 (taking all singular nouns with H\* tone pattern and light first syllable) are in complementary distribution. This leads us to believe that class 9 must have originated around the same time. Class 10 is a later addition, repluralizing classes 8 and 9.

Regarding their historical status in the overall system, it is interesting to note that classes 8, 9 and 10 offered the possibility for nouns from old classes (class 1, class 5b<sup>23</sup>) to build new plurals and redefine their old plurals as singulars. Class 9 consists almost exclusively of such (former) plural nouns; and at least some singulars with a plural in class 8b come from the same source, e.g.:

(37)	Singular	Plural (class 1)	Plural (class 8b)
	<b>kuurèe</b> 'hyena'	<b>kuuraa</b>	<b>kuuràayee</b>
	<b>màcè/màataa</b> 'woman'	<b>maataa</b>	<b>maatàayee</b>
	<b>giyèe</b> 'elephant'	<b>giiwaa</b>	<b>giiwàayee</b>

2.2.5. *Tone-Vowel Group 3 (L\*H)*. This Tone-Vowel group is a collection of classes which share the same tone pattern L\*H and the same final vowel -ii in the plural. Apart from these features, the group hardly presents a unified picture.

23. A number of singular forms are found in class 9 that look suspiciously like class 5b plural forms (recall that we derive **ai** and **au** from the same source, section 2.2.1): **duwai** 'buttocks', **kac'au** 'metal anklet', **karau** 'glass bangle, phial', **kwai** 'egg', **tagwai** 'twin'. They may be plurals which have acquired their singular reading at a later stage only.

class 11 (system 2b):

LH -C<sup>f</sup>aK<sup>1</sup>ii

Singular	Plural
<b>tudùu</b> 'hill'	<b>tùddai</b>

class 12 (system 2c):

(a) L\*H -aK<sup>2</sup>uu

Singular	Plural
<b>raanaa</b> 'sun'	<b>ràanàkuu</b>
<b>goonaa</b> 'farm'	<b>gòonàkii</b>

(b) L\*H -aN(N)ii

Singular	Plural
<b>wàasaa</b> 'game'	<b>wàasàn(n)ii</b> <sup>24</sup>

The tone pattern and the final vowel hold this group together. But historical developments can be traced to classes found in other Tone-Vowel groups.

Class 11 shares several characteristics with class 5b:

(38)	Class	Singular	Plural
	11	<b>tudùu</b> 'hill'	<b>tùddai</b>
	5b	<b>zumùu</b> 'friend'	<b>zumai</b>

These two classes differ in tone pattern and in the presence or absence of gemination. It is not possible to determine which singulars go to class 11 and which go to class 5b on the basis of the singular form (HL tone pattern and light first syllable) alone. Moreover, we find a few nouns having characteristics of both plural classes (the LH tone pattern of class 11 and the absence of gemination of class 5b):

(39)	Singular	Plural (class 5b)	Plural (class 11+5b)
	<b>dii</b> (*diyì) 'canoe-pole'	<b>diyai</b>	<b>diyai</b>
	<b>batsiyàa</b> (*batsì) 'gazelle'	–	<b>bàtsai</b>

There is probably a connection between the two classes; perhaps they formed one single class in the past (in system 2a). If this is true, the split into two classes must have occurred after the introduction of gemination, i.e., in system 2b. Most of the plurals augmented their bases, either by gemination (GEM) or by reduplication (RED):

(40)		Singular	Plural
	(GEM)	<b>tudùu</b> 'hill'	<b>tùddai</b>
	(RED)	<b>'àbù</b> 'thing'	<b>'àbàibai</b>

Only a few plurals retained their simple form. The introduction of gemination may have preceded the change in tone pattern from H\* to LH. Newman (1997) was able

24. A few such plurals are found with a final diphthong -ai, e.g., **tùdùnnai**, **gòonàkai**; these singular nouns always have (an)other plural(s) in this Tone-Vowel group. Very probably, such plurals are formed in analogy to (suffix) plurals in class 16. We did not set up a separate class.

to show for some groups of nouns a correlation between weight of the first syllable (S<sup>1</sup>) and tone pattern:

(41)		S <sup>1</sup> : heavy	S <sup>1</sup> : light
	Ethnonym:	<b>Hàusàawaa</b>	<b>Kanaawaa</b>
	Name:	<b>Làadiidi</b>	<b>'Inuunu</b>

The tonal differences between plurals in classes 11 and 5b may have a similar explanation. Today's plurals of class 11 far outnumber those of class 5b. It is possible that old plurals from class 5b were gradually shifted to class 11; this would explain why we find alternate forms for some plurals, e.g., **diyai** (5b) and **dìyai** (11).

The status of class 12b is also questionable. It shares more characteristics with class 4 (semantic system) than with the other classes in this Tone-Vowel group:

(42)	Class	Singular	Plural
	12b	<b>wàasaa</b> 'game'	<b>wàasàn(n)ii</b>
	4a	<b>fàaraa</b> 'locust'	<b>fàarii</b>

It is not possible to predict whether a singular noun (disyllabic, LH tone pattern, vowel sequence A-A) takes a class 12b or a class 4 plural. We consider 12b to be younger, mainly because it adds the determiner **n** which, in the other Tone-Vowel groups, was first introduced in system 2c.<sup>25</sup>

And class 12a shows more similarities to class 8b (Tone-Vowel group 2), e.g:

(43)	Class	Singular	Plural
	12a	<b>raanaa</b> 'sun'	<b>ràanàkuu</b>
	8b	<b>maatāa</b> 'women'	<b>maatāayee</b>

Again it is not possible to decide which singular forms (disyllabic, H\* tone pattern, vowel sequence A-A) go to class 12a and which go to class 8b, but a relationship can be established: class 12a plurals were repluralized on the basis of class 8b plurals. Compare for instance the following alternation found in several plural forms:

(44)	Singular	Plural
	<b>raanaa</b> 'sun'	<b>ràanàikuu</b>
		<b>ràanè(e)kuu</b>
		<b>ràanàkuu</b>

25. The gemination found in class 12b is unusual in so far as it applies to the determiner and not to a radical. As suggested by Wolff (1993) it is probably a dialect feature that spread into Standard Hausa; compare other plurals found in West Hausa: sg. **marinaa** → pl. **màrinayyèe** 'dye-pit', sg. **'àdùdù** → pl. **'àdùdinnèe** 'basket'.

What appears to be an Internal A was probably derived from a form **-ai-**: the diphthong **-ai-** changed to **-ee-** (a common change in Hausa), was shortened and changed to **-a-** – because short medial **-e-** is very unusual in Hausa (P. Newman 1979a). Thus it is possible that **ràanàikuu** was derived not from **raanaa** but from another plural of the form **\*raanàayee**. Some nouns have two such forms:

- (45)      Singular                      Plural (class 8b)      Plural (class 12a)  
           **maataa** ‘women’      **maatàayee**            **màatàikuu**

We are dealing here with a class formed entirely by repluralization; it is younger than class 8b.

This whole Tone-Vowel group is held together only by its plural formatives and it is difficult to compare the classes in terms of their relative age. However, because of the many instances of repluralization and the large number of loanwords, their ages with respect to classes outside this group are easier to establish. The strong ties between classes inside of this Tone-Vowel group (L\*H) and classes outside of the group are shown in Table 9: i) ties to the semantic system (LH plural, final vowel **-ii**), ii) ties to Tone-Vowel group 1 (H\*, final vowel sequence **-ai**) and iii) ties to Tone-Vowel group 2 (repluralization):

Table 9. Comparison of (LH) classes 11, 12 with older classes

Development	Systems			
	1	2a	2b	2c
i) LH <b>-ii</b>	4 <b>fàarii</b>			12b <b>wàasànnii</b>
ii) H* <b>-ai</b>		5b <b>zumai</b>	11 <b>tùddai</b>	
iii) repluralization		8b <b>maatàayee</b>		12a <b>màatàikuu</b>

2.2.6. *Tone-Vowel Group 4 (H\*L).* The classes in this group present a more unified picture. This is due to the fact that this Tone-Vowel group is younger than the other groups and so developments within the group are easier to grasp. The plural is formed by imposing a H\*L tone pattern and a vowel sequence **u-aa** on the singular base.

class 13 (system 2c):

(a) H*L <u> -aa		(b) H*L -uK <sup>2</sup> aa			
Singular	Plural	Singular	Plural	Singular	Plural
-RED					
<b>gàatarii</b>	<b>gaaturàa</b>	<b>ràafii</b>	<b>raafukàa</b>	<b>bàakii</b>	<b>baakunàa</b>
'axe'		'stream'		'mouth'	
+RED:					
<b>daḞasii</b>	<b>daḞussàa</b>	<b>gàrii</b>	<b>garuurukàa</b>	<b>jìkii</b>	<b>jikkunàa</b>
'lesson'		'town'		'body'	
		<b>gàrii</b>	<b>garuuruwàa</b>	<b>jìkii</b>	<b>jikunkunàa</b>

class 14 (system 2c):

(a) H*L -uK <sup>2</sup> C <sup>f</sup> uK <sup>2</sup> aa	
Singular	Plural
<b>ràafii</b>	<b>raafuffukàa</b>
'stream'	
(b) H*L -aaC <sup>f</sup> uK <sup>2</sup> aa	
Singular	Plural
<b>gidaa</b>	<b>gidaaduwàa</b>
'house'	

Class 13 shows much internal variation, most of which can be explained by reference to the phonological characteristics of the singular noun. Nouns having three or more radicals (class 13a) insert an Internal U between the last two radicals. This is the first time that plural formation makes use of Internal U instead of the Internal A familiar from the classes discussed above. Nouns having two radicals only (classes 13b and 13c) add a determiner **k<sup>2</sup>** or **n** and insert the Internal U between this determiner and the final radical. The choice of the determiner depends on the nature of the final radical: if it is a plosive or a **w** the determiner is **n**, otherwise it is a **k<sup>2</sup>** (by way of dissimilation; compare P. Newman 1972):

(46)	Class	Singular	Plural
	13c	<b>riigaa</b> 'gown'	<b>riigunàa</b>
	13b	<b>ràafii</b> 'stream'	<b>raafukàa</b>

As already mentioned by Newman (1972) /k/ commonly weakens to /w/ in reduplicated forms:

(47)	Singular	Plural <b>k<sup>2</sup></b>	Plural <b>w</b>
	<b>gàrii</b> 'town'	<b>garuurukàa</b>	<b>garuuruwàa</b>

Variation is also due to reduplication (RED) and gemination (GEM) which occur regularly in the plurals of singular nouns having one (disyllabic nouns) or two (trisyllabic nouns) light first syllable(s):

(48)	Singular (2-syllabic): <b>jàakii</b> 'donkey' <b>jìkii</b> 'body' (3-syllabic): <b>gàatarii</b> 'axe' <b>dařàsii</b> 'lesson'	Plural <b>jaakunàa</b>  <b>gaaturàa</b>	Plural (RED)  <b>jikunkunàa</b>	Plural (GEM)  <b>jikkunàa</b>  <b>dařussàa</b>
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Reduplication as a means of augmenting singulars with a light first syllable was introduced in system 2b. Its introduction into productive classes caused some variation, with older forms (without reduplication) surviving alongside younger ones (with reduplication), e.g.:

(49)	Class	Singular	Plural (older)	Plural (younger)
	5b	<b>zumùu</b> 'friend'	<b>zumai</b>	
	11	<b>tudùu</b> 'hill'	<b>tùddai</b>	
	5b/9a	<b>mijji</b> 'husband'	<b>*mazai</b>	<b>mazàizai</b>

But in class 13 we do not find such variation. Here the pattern of reduplication was already well established, suggesting that this Tone-Vowel group came into existence either simultaneously to, or after the introduction of reduplication as a plural formative. The presence of the determiners **k<sup>2</sup>** and **n** which were first used as formatives in system 2c also indicates that it is a younger class.

After class 13 was established, several new developments occurred, leading to a new class – class 14 – where we find instances of repluralization:

(50)	Singular <b>ràafii</b> 'stream'	Plural (class 13) <b>raafukàa</b>	Plural (class 14a) <b>raafuffukàa</b> (* <b>raafukfukàa</b> )
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The reduplicated plural was formed on the basis of the simple plural. This shift may well be still in progress, with most nouns having both forms; only a few have lost the simple plural and some have not yet acquired the reduplicated plural. The following sub-class (14b) is also a later addition:

(51)	Singular/Plural <b>gijii/gidaa</b> 'house'	Plural (class 9b) <b>gidàajee</b>	Plural (class 14b) <b>gidaaduwàa</b>
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The plural in class 14b is formed on the basis of the plural in 9b. Compare the following examples where the first exhibits the regular plural form of class 13, i.e., containing the **-uu-**, while the second has the vowel **-aa-** in place of **-uu-**. The **-aa-** found in the new plural form comes from a base containing **-aa-** (here, from **gidàajee** < \***gidàadee**):

(52)	Class	Singular	Plural 1 (class 9b)	Plural 2
	13a	<b>'ajii</b> 'class'	–	<b>'ajuujuwàa</b>
	14b	<b>gijii/gidaa</b> 'house'	<b>gidàajee</b> (* <b>gidàadee</b> )	<b>gidaaduwàa</b>

The regularity of plural formation in class 13 and introduction of the Internal U strongly suggests that all the classes in this group are younger. Moreover none of the singulars found shows characteristics of age, e.g., Klingenheben's Law plays no role. Class 14 is formed entirely by repluralization and is thus younger than class 13.

### 2.3. *System 3: The suffix system*

The third system is the suffix system. We call it 'suffix system' to draw attention to the main principle of plural formation, i.e. suffixation. The suffixes in this system developed from the first and second systems, and, on the surface, there is no difference between some of the plural forms in the three systems. The **-ooC<sup>f</sup>ii-** plurals (class 15) also belong in this third system, although it is questionable to call this ending (with its repeated final consonant) a suffix. The reason for classifying the **-ooC<sup>f</sup>ii-** plurals in the suffix system is the relationship between the singular and plural forms. This relationship, common to all classes in the system, is such that the phonological characteristic of the singular noun determining the choice of plural class is now vowel sequence and no longer tone pattern, consonant quality or the number of radicals, as in the prosodic system.

2.3.1. *Principle iv: Suffixation.* The last pattern to be found in Hausa plural formation, suffixation (SUF), is a new development. On the surface the suffix plurals are no different to those changing their vowel sequence (VS) and adding determiners:

(53)	Singular	Plural Base	Plural Formation	Plural form
	'àkwàatì 'box'	*'akwaat	SUF <b>-unaa</b>	'akwaatunàa
	bàakii 'mouth'	*baakin	VS <b>u-aa</b>	baakunàa
	'àkwàatì 'box'	*'akwaat	SUF <b>-ai</b>	'àkwàatai
	gwàanii 'expert'	*gwaniy	VS <b>aa-ii</b>	gwànnai (*gwànnàayii)

Indeed, suffix plurals developed from plurals involving determiners. The boundary between the two plural classes is not always clear; nevertheless, different classes must be posited and must be understood as a historical development. We argued in section 2.2.1 that a determiner is only added in order to make the insertion of an internal vowel possible, i.e., when a singular noun consists of only two radicals, the determiner is added, whereas a singular noun with three radicals will never add a determiner. Yet we now have a whole class of singular nouns having three or more radicals which apparently form determinative plurals, e.g., 'akwaatunàa, 'àkwàatai.

The majority of three-radical singular nouns in the suffix classes consist of recent loanwords from English or Arabic. At the time these loanwords were introduced into Hausa, these ‘determiners’ had ceased to function as determiner, and had been reanalysed as plural morphemes. The short final vowel in many of these loanwords supports this claim: if, as has been suggested, a long final vowel is the result of an old determiner having undergone lenition, then the final vowel in loanwords such as *'àkwààti* is short for the simple reason that the singular form *\*'àkwààtiy* (with the determiner *y*) never existed.<sup>26</sup> The plural is formed directly from the base: *\*akwaat-*, not *\*akwaatiy*.

2.3.2. *Singular/plural relationship in the third system.* As mentioned above, the strategy for assigning singular nouns to plural classes has changed. We will show these changes in the following tables.

Table 10. Vowel sequence for system 3 compared

Singular	Example	Plural class	Plural form in System		
			1	2	3
LH(L)					
V(?A)-A	<b>fàaraa</b>	4a/15	<b>fàarii</b>	–	<b>faaroorii</b>
	<b>wàasaa</b>	12b	–	<b>wàsànnii</b>	–
V(?A)-U	<b>kwàadfoo</b>	4a/17	<b>kwàadfi</b>	–	<b>kwaadunàa</b>
	<b>mànzoo</b>	12b	–	<b>mànzànnii</b>	–
HL					
V(?A)-A	<b>laayàa</b>	2a/15	<b>laayuu</b>	–	<b>laayooyii</b>
	<b>koofàa</b>	15	–	–	<b>koofooftii</b>
V(?A)-I	<b>raamii</b>	2a/13b	<b>raamuu</b>	<b>raamukàa</b>	–

In the first two systems tone pattern (and final vowel) of the singular were important; in the third system the most important characteristic of the singular is vowel sequence. The examples in table 10 show that in system one, singular nouns with a final (underlying) *-uu* or *-aa* vowel take a LH-*-ii* plural, those with *-ii* and *-aa* take a HH-*-uu* plural. Tone pattern, however, overrules vowel sequence, determining assignment in the case of final *-aa* singulars. A similar pattern is found in system two where, again, the choice of plural class is largely determined by tone pattern. This pattern changes gradually as we approach the third system: singular nouns

26. Compared to older Hausa nouns, many modern loanwords have a short final vowel. The long final vowel found in other modern loans may be due to analogy to these older Hausa nouns.

*Table 11. Vowel sequence and system 3 plural classes*

Singular	Example	Plural class	Plural form
attested tone patterns: LLL, LLH(L), LHL(H), LHH(H), HHH, HHL, HLH			
V*-ii/-uu	<b>maalàm(ii)</b>	16a	<b>màalàmai</b>
attested tone patterns: LLH, LHH			
aa*-ii/-uu	<b>'àgoogo</b>	17	<b>'agoogunàa</b>
attested tone patterns: LLH, LHL(H), LHH, HHH, HHL, HLH			
V*-aa	<b>dàbaaràa</b>	16b	<b>dàbàaruu</b>
attested tone patterns: LLH(L), LHL(H), LHH, HHH, HHL(H), HLH(L), HLL			
V*-aa	<b>zuuciyyaa</b>	15	<b>zuuciyooyii</b>

ending in **-aa**, regardless of tone pattern, take a class 15 plural; those not ending in **-aa** take a class 17 plural.

In the case of trisyllabic singular nouns it is even more evident that tone pattern has lost its importance; it is vowel sequence that determines assignment to a plural class (Table 11).<sup>27</sup>

In the first two systems, only a few trisyllabic singulars were found – they were treated like disyllabic singulars with a closed first syllable (CVC) – and differently from those having an open first syllable (CVV, CV). This is seen in table 12.

In the third system, however, trisyllabic nouns are treated differently from trisyllabics in other systems. Syllable weight and the number of syllables have lost their importance; nouns assigned to classes in the third system allow all numbers of syllables and all syllable structures (CV, CVV and CVC), e.g. table 13.

In tables 10 and 11, we see that tone pattern has lost its importance; in tables 12 and 13, we see that syllable weight has lost its importance; in system three vowel sequence determines assignment to a plural class. We may now look at the classes (in Tone-Vowel groups).

#### 2.4. *Tone-Vowel Group 1 (H\*)*

The single class in this system and Tone-Vowel group is class 15; it is linked to classes 5 and 6 in the prosodic system (same tone pattern/vowel sequence). The plural is formed by repeating the final radical. Strictly speaking this is not a suffix. It is included in the third system because of its singular/plural relationship.

27. There is some overlap between the plural classes of system 3: most trisyllabic nouns with a **-una** plural (class 17) also form an **-ai** plural (class 16a), and most nouns forming an **-uu** plural (class 16b) also form the **oo-ii** plural (class 15).

Table 12. System 2: trisyllabic singulars compared

Singular	Example	Plural class	Plural form (system 2)	
<b>H*</b>				
3-syllabic	<b>kwalabaa</b>	8a	<b>kwalàabee</b>	–
CVC	<b>garkaa</b>	8a	<b>garàakee</b>	–
CVV	<b>maataa</b>	8b	–	<b>maatàayee</b>
CV	<b>gidaa</b>	9b	–	<b>gidàajee</b> (*gidàadee)
<b>HL(H)/LH(H)</b>				
3-syllabic	<b>hankàlii</b>	13a	<b>hankulàa</b>	–
CVC	<b>tafkii</b>	13a	<b>tafukkàa</b>	–
CVV	<b>bàakii</b>	13c	–	<b>baakunàa</b>
CV	<b>gàrii</b>	13b	–	<b>garuurukàa</b>

Table 13. System 3: quadri- and trisyllabic singulars compared

Singular	Example	Plural class	Plural form (system 3)
4-syllabic	<b>tàatsuuniyaa</b>	15	<b>taatsuuniyooyii</b>
3-syllabic	<b>zuuciyyaa</b>	15	<b>zuuciyooyii</b>
CVC	<b>fuskàa</b>	15	<b>fuskookii</b>
CVV	<b>fàaraa</b>	15	<b>faaroorii</b>
CV	<b>dilaa</b>	15	<b>diloolii</b>

class 15:

H\* -ooCfii

Singular	Plural
<b>taagàa</b> ‘window’	<b>taagoogii</b>

The plural is formed by repeating the final radical plus inserting an **-oo-**. This **-oo-** can be traced back to the Internal A (section 2.2.3). Unlike the other classes in this Tone-Vowel group (2.2.3) we find the Internal A between the final radical and the repeated radical, regardless of the number of consonants in the singular form. In this class we find repetition with singulars having two, three and even four consonants (table 13 above). Class 15 is unique in this respect. It has departed from the general rule that repetition only appears in certain restricted environments, viz., di-syllabic nouns having a light first syllable (section 2.2.2). Instead, repetition has become a morphological plural formative.

Class 15 is definitely a young class. Firstly, the underlying consonants are ignored in plural formation while feminine suffixes are treated as part of the singular stem; in this respect there is a clear contrast between classes 5 and 15:

(54)	Singular	Plural (class 5a)	Plural (class 15)
	<b>zuucìyaa</b> (*zuktì)	<b>zukoocii</b>	<b>zuuciyooyii</b>
	'heart'		

Secondly, class 15 is the most productive Hausa plural class, taking almost every noun "on board", including many recent loanwords.

2.4.1. *Tone-Vowel Group 3 (L\*H)*. The single class in this Tone-Vowel group (L\*H), class 16, is linked to classes 11 and 12 (same final vowel **-ii**, same L\*H tone pattern). But as mentioned above (2.2.5), this Tone-Vowel group hardly presents a unified picture.

class 16:

(a) L*H -ai		(b) L*H -uu	
Singular	Plural	Singular	Plural
'àkwààtì 'box'	'àkwàatai	kujèeraa 'chair'	kùjèeruu/-ii

This class forms its plural entirely by suffixation of **-ai** (class 16a) or **-ii** (class 16b) plus imposing a L\*H tone pattern. Class 16 probably developed analogously to classes 4 and 11.<sup>28</sup>

(55)	Class	Singular	Plural
	11	<b>tudùu</b> 'hill'	<b>tùddai</b> (*tùddàayii)
	16a	'àkwààtì 'box'	'àkwàatai
	4a	<b>fàaraa</b> 'locust'	<b>fàarii</b>
	16b	<b>kujèeraa</b> 'chair'	<b>kùjèeruu/-ii</b>

Class 16a has developed by reanalyzing the vowel sequence plus determiner in class 11 **-aayii** as a suffix: **-ai**. A similar reanalysis accounts for class 16b: the vowel sequence **-aa-ii** in class 4 was reanalyzed as a suffix vowel **-ii**. In most plurals this **-ii** appears today as **-uu**. Some plurals however have both forms, compare example 21, section 2.2.1.

Class 16 can be considered to be younger for two reasons: firstly, a large number of loanwords is found in these classes (many Arabic loans having three or more syllables; class 16a is very productive here); secondly, many plurals from the second system repluralize in class 16. A number of plurals in class 16 exhibit

28. It is difficult to determine when exactly the semantic/prosodic classes ceased to be productive and were replaced by the suffix classes. We see classes 4, 11 and 16 as a continuum; classes 4 and 11 have to be placed closer to the semantic/prosodic end, class 16 closer to the suffix end.

an Internal A. These are instances of repluralization, formed on the basis of Tone-Vowel group 2 plurals: many singular nouns have a H\* tone pattern (characteristic of Tone-Vowel group 2, but not of Tone-Vowel group 3) and all have alternative plurals in Tone-Vowel group 2, e.g.:

(56)	Singular	Plural (Tone-Vowel 2)	Plural (class 16)
	<b>gwarzoo</b> ‘energetic person’	<b>gwaràajee</b>	<b>gwàràajii</b> <b>gwàràzzai</b>
	<b>guzumaa</b> ‘cow’	<b>guzàamee</b>	<b>gùzàamai</b>
	<b>gumkii</b> ‘fetish’	<b>gumàakaa</b>	<b>gùmàakai</b>
	<b>diddigèe</b> ‘heel’	<b>digàadigii</b>	<b>dìgàadìgai</b>
	? ‘paddle’	<b>filàafilii</b>	<b>filàafilai</b>

2.4.2. *Tone-Vowel Group 4 (H\*L).* The only class in this system and Tone-Vowel group, class 17, is linked to classes 13 and 14: Final vowel sequence **u-aa**, H\*L tone pattern.

class 17:

H\*L -unaa

Singular	Plural
<b>kàntii</b> ‘shop’	<b>kantunàa</b>

Except for sub-class 13c, which is the forerunner of class 17, the other classes (13, 14) in this Tone-Vowel group are no longer productive. Again the relationship between them is ambiguous and is perhaps best described as a continuum. By far the largest number of nouns assigned to this Tone-Vowel group are found in 13c/17. The plurals look similar on the surface but they are formed differently.

(57)	Singular	Plural Base	Plural Formation	Plural form
	<b>bàakii</b> ‘mouth’	<b>*baakin</b>	VS <b>u-aa</b>	<b>baakunàa</b> (class 13c)
	<b>kàntii</b> ‘shop’	<b>*kant</b>	SUF <b>-unaa</b>	<b>kantunàa</b> (class 17)

The difference lies in the relationship between singular and plural: class 13c contains older singular nouns; most singulars in class 17 are either loanwords or secondary plurals from classes 7 and 10. Loanwords include, e.g.:

(58)	Singular	Plural
	<b>‘àkwàatì</b> ‘box’	<b>‘akwaatunàa</b>
	<b>lèemoo</b> ‘lemon’	<b>leemunàa</b>
	<b>kàntii</b> ‘shop’	<b>kantunàa</b>

Most nouns of classes 7 and 10 have additional plurals in this class:

(59)	Singular	Plural (class 7)	Plural (class 10a)	Plural (class 13c/17)
	<b>tarkòò</b> 'trap'	<b>taràakaa</b>		<b>tarkunàa</b>
	<b>harshèè</b> 'tongue'	<b>haràasaa</b>		<b>harsunàa</b>
	<b>gàrmaa</b> 'hoe'		<b>garèemanii</b>	<b>garmunàa</b>

Many of these singulars deviate from the pattern we find elsewhere in this Tone-Vowel group (section 2.2.6). They take the determiner **n** despite the fact that they do not end in a plosive consonant. We would have expected the forms \***leemukàa**, \***harsukàa** and \***garmukàa** respectively. That such nouns were not incorporated into sub-class 13b suggests that this sub-class ceased to be productive. Moreover, many of these forms have three radicals, which is incompatible with the addition of a determiner. We would have expected the third consonant to act in the place of the determiner, i.e., \***taruk(k)àa** and \***garum(m)àa** respectively. A few such forms do exist:

(60)	Singular	Plural (class 7)	Plural (class 13a)	Plural (class 13c/17)
	<b>harshèè</b> 'tongue'	<b>haràasaa</b>	<b>harussàa</b>	<b>harsunàa</b>

This new development occurred after the determiners ceased to be productive and involves the reanalysis of the sequence **unaa** with its determiner as a suffix **-una**. Despite the identical surface forms of class 13c and class 17, we argue for two separate classes.

### 3. Conclusion

The primary aim of this article is to shed light on the sheer quantity of plural forms and formatives and to explain why so many singulars have more than one plural form. We believe that the structures (systems and Tone-Vowel groups) outlined above make chronological sense of Hausa plural classes, i.e., of the various plural formatives, their developments and combinations. In this section, we bring the various strands of the argument together.

The fact that various formatives began to function at various times explains the quantity of plural forms. While new formatives developed (often on the basis of older ones), older plural forms continued to be used. Table 14 illustrates developments inside and between the Tone-Vowel groups<sup>29</sup> and through the three systems:

29. The HLH plurals (Tone-Vowel group 2) are not included because the kinds of development shown here did not occur in this group.

Table 14. Developments within the Tone-Vowel groups

System 1	System 2		System 3
(1) Tone-Vowel group 1			
singular noun: HL tone pattern, final vowel A:			
class 2	class 6	–	class 15
<b>laayàa/laayuu</b>	<b>yaaròo/yaarookii</b>	–	<b>yaaròo/yaaroorii</b>
(2) Tone-Vowel group 3			
singular noun: LH tone pattern, final vowel A:			
class 4	–	class 12b	class 16b
<b>fàaraa/fàarii</b>	–	<b>wàasaa/wàasànnii</b>	<b>dàbaaràa/dàbàaruu</b>
(3) Tone-Vowel group 1 → 3			
singular noun: HL tone pattern, final vowel I or U:			
–	class 5b	class 11	class 16a
–	<b>zumùu/zumai</b>	<b>tudùu/tùddai</b>	<b>maalàm(ii)/màalàmai</b>
(4) Tone-Vowel group 4			
singular noun: LH tone pattern, final vowel I or U:			
–	class 13	–	class 17
–	<b>bàakii/baakunàa</b>	–	<b>kàntii/kantunàa</b>

The development shown in table 14 is not arbitrary; it follows predictable patterns: singulars and plurals in each of the Tone-Vowel groups share phonological characteristics (tone pattern and vowel sequence).<sup>30</sup> Each plural modifies the previous one to some extent; in each Tone-Vowel group the same formatives are found. All leftmost plurals (classes 2 and 4) are formed by changing tone pattern and final vowel. Plurals in the next column (classes 6, 5b, 13) use the Internal A or U as a productive plural formative; the determiners **k<sup>1</sup>**, **k<sup>2</sup>** and **n** are added to augment di-radical singular nouns. This pattern is retained in the third column (classes 12b, 11) where plurals add various forms of reduplication to augment singular bases. Finally, in the last column, the determiner is either reanalyzed as a suffix (16b, 16a, 17) or replaced by a repeated radical (class 15). The developments found in these Tone-Vowel groups reflects the three plural systems we have established.

Many singular nouns have more than one plural form, usually from different systems. Two general tendencies can be observed here: firstly, old plural forms

30. The change in the plural tone pattern H > LH (Table 13, example 3) is explained in 2.2.5; the alternation in the plural final vowel -ii ~ -uu (Table 14, examples 1 and 2) is explained in 2.2.1.

serve as the basis for new plural forms (repluralization); secondly, older singular nouns whose plurals were no longer productive often take a younger plural (secondary plural).

Several patterns of repluralization are attested and are shown in Table 15:

*Table 15. Patterns of reduplication*

Singular	Plural 1 (classes 1–4)	Plural 2 (class 5)	Plural 3 (classes 8, 9)	Plural 4 (various classes)
1a) <b>gijii</b>	<b>gidaa</b>		<b>gidàajee</b>	<b>gidàddajii</b> (class 10c)
1b)				<b>gidaaduwaà</b> (class 14b)
2a) <b>mijii</b>	<b>mazaa</b>		<b>*mazai</b>	<b>mazàizai</b>
2b)				<b>mazàajee</b>
3a) <b>màcè/màataa</b>	<b>maataa</b>		<b>maatàayee</b>	<b>maatàttakii</b> (class 10b)
3b)				<b>màatàikuu</b> (class 12a)
4) <b>laayàa</b>	<b>laayuu</b>		<b>laawàayee</b>	
5) <b>garkaa</b>			<b>garàakee</b>	<b>garèekanii</b> (class 10a)

The first pattern of repluralization is one in which plural forms were taken from the first system (classes 1 to 4). Given the fact that all these plural forms have a H\* tone pattern, it is not surprising that they were all integrated into the HLH\* Tone-Vowel group 2 (classes 8, 9) – the preferred tone pattern for singular nouns in this Tone-Vowel group. The second pattern of repluralization is one in which the plurals of classes 8 and 9 serve as the basis for further plurals in other Tone-Vowel groups. They are either formed by reduplication (examples 1a, 3a) or by adding a younger determiner (examples 1b, 3b, 5). They are not integrated into pre-existent classes, instead, new classes emerge which consist entirely of these repluralized forms. Moreover, the old plural (with its plural reading) survives alongside the younger plural. Thus systematic repluralization mainly affects nouns from the first (semantic) system and from the HLH\* Tone-Vowel group. In other groups and classes repluralization is sporadic, affecting few nouns only.

Repluralization is one reason why many singular nouns have several plural forms. The other reason is the emergence of secondary plurals. Many singular nouns have additional plurals in younger classes, usually from the (most productive) third system; older plural forms exist in classes that are no longer productive. These developments are shown in Table 16.

In Table 16, example (1), the original plurals of the singular nouns are in different classes and Tone-Vowel groups; they were assigned to these classes mainly on the basis of their tone patterns. However, in the third system they were assigned to class 15 on the basis of their final vowel *-aa*. In example (2) the same pattern is found but is less obvious; here, the original plurals appear in different classes: tone pattern is the most important criterion; vowel sequence is less important. The

Table 16. Several plurals through repluralization and secondary plurals

(1)	Plural in older classes	Plural in class 15 (third system)
<b>laayàa</b>	<b>laayuu</b> (class 2a)	<b>laayooyii</b>
<b>fàaraa</b>	<b>fàarii</b> (class 4a)	<b>faaroorii</b>
<b>kibiyàa</b>	<b>kibai</b> (class 5b)	<b>kibiyooyii</b>
<b>faunaa</b>	<b>faakàanee</b> (class 8a)	<b>faunoonii</b>
(2)	Plural in older classes	Plural in classes 13/17 (second/third system)
<b>raamii</b>	<b>raamuu</b> (class 2a)	<b>raamukàa</b> (class 13b), <b>raamunàa</b> (13c/17)
<b>tudùu</b>	<b>tùddai</b> (class 11)	<b>tudundunàa</b> (class 13c/17)
<b>harshèè</b>	<b>haràasaa</b> (class 7a)	<b>harussàa</b> (class 13a), <b>harsunàa</b> (class 13c/17)
<b>kòotsoo</b>	<b>kòotsànnii</b> (class 12b)	<b>kootsunàa</b> (class 13c/17)

secondary plurals appear in classes 13 and 17 (recall that we regard classes 13 and 17 as a continuum); the dominant tone pattern of the original plurals of class 13c is LH – but through the integration of loanwords and secondary plurals this gradually changed so that singulars in class 17 no longer have a single tone pattern; we find both LH and HL (and some HH). The vowel sequence is more important for the integration of secondary plurals, i.e., for singular nouns not ending in *-aa*. These changes also explain why singulars which originally belonged to one class appear in different classes in younger systems (for example, **laayàa** and **raamii** above).

The existence of several plural forms for one singular noun can be explained in terms of the existence of three separate plural systems and their chronological development: in the first system few nouns, if any, had more than one plural; in the second system the original plurals were retained and/or repluralized; in the third system we find both original and repluralized plural forms alongside secondary plurals. To sum up, understanding the development of the three systems and the relationships between them allows us to understand i) why so many plural forms exist, ii) the relationships between one plural form and another and iii) the relationships between singulars and plurals.

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