

A typological perspective on Bantu nominal tone: the case of Ikoma-Nata-Isenye in western Tanzania

Lotta Aunio

Department of World Cultures, University of Helsinki, Finland

E-mail: lotta.aunio@helsinki.fi

Abstract: This paper compares the nominal tone systems of three Bantu language varieties, Ikoma, Nata, and Isenye, spoken in the southern part of the Mara region in western Tanzania. These varieties are classified as dialects of a single language (JE45), and altogether they have approximately 30 000 speakers. All three varieties are mutually intelligible, if only with minor difficulties and adaptation. The nominal tone patterns in these varieties look very similar. However, when comparing the nominal tone systems, we see that the systems of assigning nominal tones in these three varieties are typologically different. Moreover, it has been suggested that the lexical tonal contrasts of the southern Mara languages have been greatly reduced or lost altogether, but the data presented in this paper shows that lexical tone systems are still functional in several of these languages and that the area shows great variety in the nominal tone systems.

Introduction

Ikoma, Nata, and Isenye are three South Mara Bantu varieties spoken in the south-east part of the Mara region in western Tanzania.¹ They are often referred to as dialects of a single language, and they have a single classification code (Maho 2009: JE45; ISO [ntk]). These varieties are spoken by a total of approximately 30 000 speakers: Ikoma has about 19 000 speakers and the two others far fewer.

There are more than 20 Bantu varieties in the Mara region representing two branches (Figure 1), 'Mara' and 'Suguti', under the East Nyanza branch of Great Lakes (Walker 2013). The history of the Bantu languages in the area goes back at least a thousand years (Schoenbrun 1990; Shetler 2007). In addition to the Bantu languages, there are also languages from all three branches of the Nilotic languages. Of these, Southern Nilotic Datooga and Eastern Nilotic Maa have been in the area for hundreds of years, whereas Western Nilotic Luo is a more recent addition. With interdependent ecologies, the different language groups have had close contacts for centuries (Shetler 2007). This long history of co-existence has created an intriguing puzzle about the history of the Mara languages and their internal relationships. The massive changes in the living areas and livelihoods during the past hundred years, of which the establishment of Serengeti National Park has probably been the most significant, have made the situation even more complex. Those living in the area of what is the National Park today were forced to move out of the Serengeti area to the west, and with the creation of the National Park they lost a great part of their traditional grazing and hunting areas. With people moving their languages also have rapidly moved to new areas and contacts between languages have been intensified.

The speakers of Ikoma-Nata-Isenye varieties use these names as ethnonyms and identify themselves with these names. All three varieties seem to be mutually intelligible, if only with minor difficulties and adaptation. However, areal and personal differences are significant, and, quite contrary to expectations, younger Isenye speakers seem to have more difficulties in understanding Ikoma than their older relatives (Holly Robinson, personal correspondence 2015). The classification of the three varieties as dialects of the same language is based almost exclusively on lexicostatistics (Hill et al. 2007). Phonological and morphological evidence show more variation, and tonal systems in these varieties vary considerably. Also, historical evidence does not lump these three varieties as a single branch of the Eastern Mara Bantu languages, and thus lexical

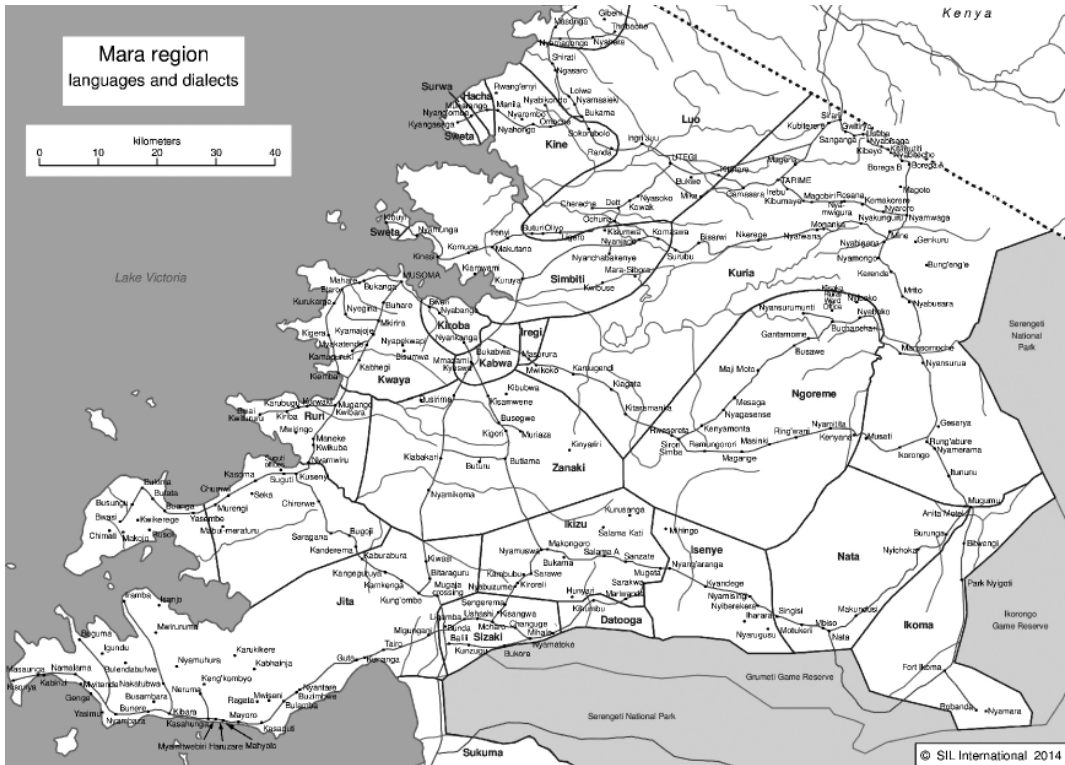


Figure 1: Mara region languages and dialects

similarities are likely to be a result of long-term contact. Recent findings show that Ikoma and Nata are closer to each other and Isenye varies more from the other two (Smith et al. 2008; Aunio 2013b).

In this paper, I will compare the nominal tone systems of Ikoma, Nata, and Isenye (henceforth INI). Many nouns in all three varieties have the same tonal patterns, giving the impression that these varieties have the same tonal systems of lexical tones. The JE40 languages have been described as ‘accentual’ or ‘two type’ languages in which lexical tones on nouns are conditioned or have been reduced to a two-way contrast (Bastin 2003). When comparing the nominal tone systems in more detail we will see that, despite similar tonal patterns, the systems for assigning the nominal tones in these three varieties are different and indeed more complex than what has been proposed for JE40 languages.

I have conducted field work mainly on Ikoma, but collected some Nata and Isenye data as well. The Ikoma database consists of more than 500 tone-marked nouns, and for Isenye about 300 nouns were analysed. For the analysis of Nata nominal tone, I rely on Angheliescu’s analysis (Angheliescu 2013a); my data on Nata verifies his analysis. There are some differences in the details of the data (see below), probably showing variation within what is called the Nata variety. All Ikoma and Isenye data in this presentation come from my field notes; Nata data marked with ‘∅’ are from Angheliescu (2013a, 2013b).

In the following, I will first describe the tonal basics of Ikoma, Nata, and Isenye and compare the tone patterns between the varieties. Then I will take a closer look at the nominal tone systems of each variety and relate them to some definitional properties of stress and tone systems after which the nominal tone systems will be compared to each other and to Proto-Bantu. In the concluding

section, I will show that these systems are typologically different not only from each other but also from many of the geographically close Bantu languages.

Segmental structure of Ikoma-Nata-Isenye nouns

Ikoma, Nata, and Isenye have a canonical Bantu noun structure: nouns consist of a noun stem, preceded by a lexically defined noun class prefix, generally of the shape CV-. The noun class prefix (NPx) is preceded by a predictable pre-prefix or augment (Pre-Px) vowel (1).

- (1) Canonical noun in Ikoma-Nata-Isenye
- | | | |
|--------|------|------|
| V- | CV- | stem |
| PrePx- | NPx- | stem |

The class 5 prefix in Nata and Isenye as well as classes 9 and 10 prefixes in all three varieties deviate from the canonical form: In Nata, the class 5 prefix has a long vowel, as in *rii-guhá* ‘bone’ and the pre-prefix occurs only with monosyllabic noun stems, as in *erii-só* ‘eye’ (Angheliescu 2013a: 90). In Isenye, the class 5 prefix occurs usually without the pre-prefix (*ri-*), as in *ri-hárara* ‘grasshopper’. In class 9, the pre-prefix (*a-* in Ikoma and Nata, *i-/e-* in Isenye) occurs with a prefix which is a homorganic nasal or without the prefix, as in Ikoma and Isenye *a-suná/e-súna* ‘mosquito’ and *an-chera/en-chira* ‘path’. In addition, the vowel of the prefix *a(N)-* of class 9 is lengthened with monosyllabic stems in Nata (Angheliescu 2013a: 90). In all three varieties, the class 10 prefix is of the form CVV- or CVN-, as in Ikoma *chaa-síri* ‘ropes’ and *chanchera* ‘paths’.

In the following examples, pre-prefixes are not separated from the noun class prefixes. The prefix vowels are subject to vowel harmony, e.g. class 3 prefix is either *omo-* or *omu-* depending on the vowels of the nominal stem; the details of the vowel harmony are different in all three varieties (Higgins 2012; Gambarage 2013; Laine forthcoming).

Ikoma-Nata-Isenye nominal tone systems: background

All three INI varieties have two level tones, which are analysed as H and Ø (toneless), since only the H tones are active in the tonal rules (Aunio 2010). L tone is assigned as a default tone to any syllable that is not associated with a H after the tonal rules; this adheres to the privative tone systems (Hyman 2001). H tones are marked with an accent (e.g. *á*) on the examples below, while unmarked vowels are pronounced with the default L tone.

The tone bearing unit (TBU) is the syllable, that is, each syllable can carry at most one H tone and there are no underlying falling or rising tones and the surface rising and falling tones are in free variation with level high tones (Aunio 2010; Angheliescu 2013a); only level H tones are marked in this paper. Furthermore, monomoraic and bimoraic syllables both show only two tonal contrasts, and in tonal rules syllables, not moras, are counted when assigning grammatical tones (see Aunio (2013a).

Languages with these restrictions in their tonal systems are sometimes called pitch-accent languages. However, pitch-accent is not considered a typological category here, following for example Odden (1999) and Hyman (2009). The tonal systems are analysed as combining both tone- and stress-like features. Odden (1999) lists the following as diagnostics of tone: multiple distinctive levels, spreading, floating, syllable internal contrasts, and mora-counting, but also notes that there are many Bantu tone languages that do not display these properties; in fact, none of the three varieties discussed in this paper shows any of these five properties. Hyman (2009) evaluates obligatoriness, culminativity, privativity, and metricality as definitional properties of stress systems, which, however, can all be found in tone languages as well. All varieties discussed in this paper (and probably all Bantu languages in the area) have privative systems, i.e. only two distinctive levels of which only one level (H) needs to be specified underlyingly (Aunio et al. forthcoming), but these varieties differ in how they make use of the other three properties, i.e. obligatoriness, culminativity, and metricality.

While obligatoriness (at least one syllable with the highest prominence) and culminativity (at most one syllable with the highest prominence) can be rather unambiguously defined, metrical structure is often equalled with stress (see Hyman 2009 for discussion) or metrical restrictions refer to any

positional restrictions on tone realisation (Downing 2004). In this paper, two positional restrictions which are relevant to the languages in question are considered, namely tone alignment with domain edges and weight-sensitivity. All these properties are discussed in more detail below with each variety of INI, and in the conclusions INI varieties are compared to some other Bantu languages in the area.

In INI, there is a rather direct relationship between the lexical tones of nouns and their surface realisations (Aunio et al. forthcoming), i.e. most lexical H tones are realised on the same TBU with which they are lexically linked. For example in Ikoma nouns, the only context in which two H tones become adjacent across morpheme boundaries is with the class 2a prefix *báá-*, the only H toned noun class prefix; in this context the latter of the adjacent H tones deleted by Meeussen's Rule, as in *báá-máámé* → *báámaamé* 'brothers-in-law' (Aunio 2010: 11–13).

The direct correspondence between lexical tones and their surface realisations also apply at the phrasal level: the majority of lexical H tones are realised on the TBU with which they are lexically linked, and lexically toneless TBUs are realised with a L tone. As discussed in Aunio (2010) and (2013) for Ikoma, some lexically toneless TBUs are pronounced with a surface H tone, for example, word-finally when the following word has an initial H tone, as in *eme-kérá* 'gíire' 'those tails' (lexical TBUs underlined; ' indicates downstep). However, these differences between the lexical tones and their surface realisations do not neutralise the lexical tonal contrasts. Therefore, in the following examples all the tones are underlyingly tones.

Ikoma-Nata-Isenye tonal patterns

Ikoma, Nata, and Isenye have many nouns that have the same tonal patterns, as in the set of data in (2).

(2)	Ikoma	Nata	Isenye	
	<i>oro-síri</i>	<i>oro-síri</i>	<i>oro-síri</i>	'rope'
	<i>omo-kéra</i>	<i>omo-kéra</i>	<i>omo-kíra</i>	'tail'
	<i>omu-témi</i>	<i>omu-témi</i>	<i>omu-témi</i>	'chief'
	<i>oru-sá</i>	<i>oru-shá</i>	<i>oru-sá</i>	'branch'
	<i>am-bwé</i>	<i>aam-bwé</i>	<i>im-bwé</i>	'wild dog'
	<i>an-dá</i>	<i>aan-dá</i>	<i>in-dá</i>	'louse'
	<i>chan-dá</i>	<i>chan-dá</i>	<i>chin-dá</i>	'lice'

When looking at a wider set of data, many differences are found in the tonal patterns. The differences in these patterns do not seem to be regular since there are word triplets where two of the varieties have the same tonal pattern, but the third variety has a different pattern—and the one which is different can be any of the three. In (3), Nata and Isenye patterns are identical, whereas Ikoma tones are different. In (4), Ikoma and Nata have the same patterns, and Isenye is different. And finally in (5), Ikoma and Isenye tones are the same, whereas Nata differs from the other two.

(3)	Ikoma	Nata	Isenye	
	<i>an-gíbo</i>	<i>an-gíbo</i>	<i>en-gíbo</i>	'cloth'
	<i>an-chera</i>	<i>an-chéra</i>	<i>en-chíra</i>	'path'
	<i>a-bugusi</i>	<i>a-búgusi</i>	<i>e-búgusi</i>	'upper arm'

(4)	Ikoma	Nata	Isenye	
	<i>a-suná</i>	<i>a-soná</i> ◊	<i>e-súna</i>	'mosquito'
	<i>omu-gáruka</i>	<i>omu-gáruka</i> ◊	<i>omu-gárúká</i>	'old man'
	<i>eke-hureró</i>	<i>eke-hureró</i> ◊	<i>eki-húrérá</i>	'pot'
	<i>a-shíshíta</i>	<i>a-sisííta</i> ◊	<i>e-shíshíta</i>	'toothbrush'

(5)	Ikoma	Nata	Isenye	
	<i>chaa-síri</i>	<i>chaa-síri</i>	<i>chen-síri</i>	'ropes'
	<i>omo-róki</i>	<i>omó-róki</i>	<i>omo-róki</i>	'weaver'

<i>am-bééchi</i>	<i>am-bεεchi</i>	<i>em-bééche</i>	'pig'
<i>eri-búróngé</i>	<i>rii-burúnga</i>	<i>ri-búróngá</i>	'egg'
<i>ama-búróngé</i>	<i>ama-búrunga</i>	<i>ama-búróngá</i>	'eggs'
<i>am-bérété</i>	<i>am-beréte</i>	<i>em-bórité</i>	'goat'
<i>cham-béérété</i>	<i>cham-beréte</i>	<i>chem-bórité</i>	'goats'

Finally, there are word triplets that have different tones in all three varieties, as in (6).

(6)	Ikoma	Nata	Isenye	
	<i>a-kánga</i>	<i>a-kangá</i>	<i>in-kángá</i>	'guinea fowl'
	<i>omo-remi</i>	<i>omó-remi</i>	<i>omo-rémi</i>	'farmer'
	<i>an-da</i>	<i>áán-da</i>	<i>in-dá</i>	'stomach'
	<i>chan-da</i>	<i>chán-da</i>	<i>chin-dá</i>	'stomachs'
	<i>chan-gibo</i>	<i>chán-gibo</i>	<i>chen-gíbo</i>	'clothes'

Some differences in the distribution of tones in these three varieties are obvious from the data presented above: Ikoma and Isenye never show tone on noun class prefixes, whereas in Nata tones are found on the noun class prefixes, but not with all nouns. Furthermore, Nata does not have multiply linked H tones (or H tone on more than one syllable per word), whereas in Ikoma and Isenye this occurs. Nata is also the only variety in which singular and plural forms sometimes have different tonal realisations. However, Nata and Isenye differ from Ikoma in the sense that these two varieties do not have toneless words, whereas in Ikoma toneless words are allowed. Before comparing the three systems in more detail, let us have a look at each of these systems individually.

Isenye

Isenye has only two tonal patterns, namely a H tone on the first syllable of the stem or a H tone linked to all syllables of the stem (7). The domain of the lexical tone is the nominal stem; noun class prefixes are toneless. Isenye nouns satisfies the stress-related criterion of obligatoriness (every word has at least one syllable with the highest prominence) but not culminativity, since multiply linked H ('all H') tones are allowed. Both H tones are aligned with the left edge of the stem, which can be viewed as a metrical restriction (Downing 2004).

(7)	Stem-initial H		Multiply linked H	
	<i>oru-sá</i>	'branch'	→ ?	
	<i>im-bwé</i>	'wild dog'	→ ?	
	<i>in-dá</i>	'louse'	→ ?	
	<i>in-dá</i>	'stomach'	→ ?	
	<i>oro-síri</i>	'rope'	<i>in-kángá</i>	'guinea fowl'
	<i>omo-kíra</i>	'tail'	<i>obu-béré</i>	'millet'
	<i>omu-témi</i>	'chief'	<i>omu-gárúká</i>	'old man'
	<i>e-shíshita</i>	'toothbrush'	<i>eki-húrérá</i>	'pot'

With monosyllabic noun stems, these two types coincide, and therefore it is not possible to have tonal minimal pairs with monosyllabic stems or to assign monosyllabic stems to one of the groups. For instance, the words for 'louse' and 'stomach' are reconstructed as a tonal minimal pair in Proto-Bantu and are tonally contrastive in many modern Bantu languages, for example in Ikoma (see (8) below), but this contrast has been lost in Isenye.

With bisyllabic stems, by far the most common tonal type is with a H on the first syllable of the stem, whereas the multiply linked H pattern occurs only in about 10 per cent of the words. Trisyllabic stems show a very different distribution: the two tonal types are almost equally represented. There are not enough nouns of more than three syllables in my data to make any conclusions about them.

With this rather restricted tonal system it is possible that Isenye is changing from a tonal system towards a system with regular stress, possibly under the influence of the national language Swahili, which has regular penultimate stress. The tonal patterns of bisyllabic noun stems in particular point in this direction, since the vast majority of these nouns have the H tone on the first syllable of the stem which is also the penultimate syllable. However, while mono- and trisyllabic noun stems also show reduction of tonal distinctions, in these nouns the reduction does not match the pattern of penultimate stress: monosyllabic nouns have the H tone on the final syllable and trisyllabic on the antepenultimate syllable.

Ikoma

The Ikoma nominal tone system is less restricted than the Isenye system (see Aunio (2010) for a more comprehensive account of Ikoma nominal tone). Unlike Isenye, Ikoma has retained the Proto-Bantu tonal distinction of monosyllabic noun stems; therefore there are monosyllabic noun stems with a H tone and without a H tone (8).

(8)	H		Ø	
	<i>oru-sá</i>	'branch'	<i>ege-gi</i>	'mud wasp'
	<i>am-bwé</i>	'wild dog'	<i>an-gwe</i>	'leopard'
	<i>an-dá</i>	'louse'	<i>an-da</i>	'stomach'
	<i>chan-dá</i>	'lice'	<i>chan-da</i>	'stomachs'

Bisyllabic noun stems have a three-way distinction which is very common across Eastern Bantu languages: there is a H tone on one of the stem syllables or no tone at all (9) (Philipsson 1998). Therefore, Ikoma monosyllabic and bisyllabic noun stems have the n+1 pattern, i.e. the number of possible tonal patterns is the number of stem syllables plus 1.

(9)	HØ		ØH		ØØ	
	<i>oro-síri</i>	'rope'	<i>a-suná</i>	'mosquito'	<i>omo-remi</i>	'farmer'
	<i>omo-kéra</i>	'tail'	<i>omu-gendi</i>	'traveller'	<i>chan-gibo</i>	'clothes'
	<i>omu-témi</i>	'chief'	<i>eke-huuhé</i>	'butterfly'	<i>an-gibo</i>	'cloth'
	<i>chaa-síri</i>	'ropes'			<i>an-chera</i>	'path'
	<i>a-kánga</i>	'guinea fowl'				
	<i>omo-róki</i>	'weaver'				
	<i>am-bééchi</i>	'pig'				

With trisyllabic and longer noun stems the Ikoma patterns deviate from the expected patterns of the area: Ikoma trisyllabic stems have one further tonal pattern in addition to the expected four patterns (HØØ, ØHØ, ØØH, ØØØ), namely a pattern in which a H tone is linked to all stem syllables (10). Therefore, trisyllabic and longer noun stems have n+2 possible tonal patterns, n being again the number of stem syllables.

(10)	ØØØ:	<i>a-bugusi</i>	'upper arm'
	HØØ:	<i>omu-gáruka</i>	'old man'
	ØHØ:	<i>a-shishiíta</i>	'tooth brush'
	ØØH:	<i>eke-hureró</i>	'metal pot'
	HHH:	<i>eri-búringé</i>	'egg'

Interestingly, this multiply linked H pattern is also found in Isenye, although Isenye does not have the three other tonal patterns of Ikoma trisyllabic nouns. Ikoma quadrisyllabic noun stems also have the patterns in which there is a H tone on one of the stem syllables, no tone at all, or the multiply linked H pattern, which makes six tonal patterns altogether.

Since Ikoma has a contrast between H-toned and toneless stems, the criterion of obligatoriness is not met in Ikoma, and multiply linked H tones rule out culminativity. Metrical structure does not

play a role in Ikoma nominal tone assignment, but in Nata nominal tones are aligned with domain edges.

Nata

Angelescu (2013a) analyses Nata nominal tone system ‘as a stress system where high tone represents the most prominent syllable in a word’. Therefore, in a Nata noun, there must be a H tone (obligatoriness), but multiple H tones or multiply linked H tones are not possible (culminativity). In addition, Nata makes use of metrical processes in assigning tones relative to both edges of the word. Tone type is a lexical property of the noun stem, although the H tone can be realised on the prefix as well. Nata has three types of nominal tones, as exemplified in (11).

(11) I: H on σ_2	II: H on σ_3	III: H on final σ
Monosyllabic noun stems		
<i>egé-gi</i> ‘wasp’		<i>aam-bwé</i> ‘wild dog’
<i>áán-da</i> ‘stomach’		<i>aan-dá</i> ‘louse’
<i>chán-da</i> ‘stomachs’		<i>chan-dá</i> ‘lice’
Bisyllabic noun stems		
<i>an-gíbo</i> ‘cloth’	<i>oro-síri</i> ‘rope’	<i>a-kangá</i> ‘guinea fowl’
<i>chán-gibo</i> ‘clothes’	<i>chaa-sirí</i> ‘ropes’	<i>am-bεεchí</i> ‘pig’
<i>an-chéra</i> ‘path’	<i>omo-kéra</i> ‘tail’	<i>cham-bεεchí</i> ‘pigs’
<i>omó-remi</i> ‘farmer’	<i>omu-témi</i> ‘chief’	<i>egi-saré</i> ◊ ‘twin’
<i>abá-remi</i> ‘farmers’	<i>a-soná</i> ◊ ‘mosquito’	<i>rii-saré</i> ◊ ‘twin (dim.)’
<i>omó-roki</i> ‘weaver’		<i>omu-gongó</i> ‘back’
<i>abá-roki</i> ‘weavers’		
Trisyllabic noun stems		
<i>a-búgusi</i> ‘upper arm’	<i>omu-gáruka</i> ◊ ‘old man’	<i>eke-hureró</i> ◊ ‘pot’
<i>cháá-bugusi</i> ‘upper arms’	<i>a-sisíita</i> ◊ ‘toothbrush’	<i>a-nyakwaahá</i> ◊ ‘armpit’
	<i>rii-burúnga</i> ‘egg’	
	<i>ama-búrunga</i> ‘eggs’	
	<i>am-beréte</i> ‘goat’	
	<i>cham-beréte</i> ‘goats’	

Type I includes the nouns in which the tone can be realised on the noun class prefix. This is because the H tone is realised on the second syllable of the word (not the stem). Therefore, with VCV-prefixes the H tone is realised on the prefix vowel, as in *omó-remi* ‘farmer’. Also, this tone type is sensitive to syllable weight: if the first syllable of the word is heavy, the tone is retracted to the heavy syllable. Both CVV- (*chaa-*) and CVN- (*chan-*) syllables are considered heavy by this rule. This tone retraction also explains the differences between some singular and plural pairs: when the noun class prefix is a heavy syllable, the H is shifted, as in *a-búgusi/cháá-bugusi* ‘upper arm/upper arms’ whereas it is not shifted to a noun class prefix with a light syllable, as in *omó-remi/abá-remi* ‘farmer/farmers’.

In Type II the H tone is assigned to the third syllable of the word that is often the first syllable of the noun stem. This is seen most clearly in the nouns in which the noun class prefix has two syllables in the singular but only one in the plural: the tone is realised either on the first or the second syllable of the stem, depending on the length of the prefix. In this type, the H is always on the stem syllable, but in singular and plural forms the H can be on a different stem syllables if singular and plural prefixes have a different number of syllables, as in *rii-burúnga/ama-búrunga* ‘egg/eggs’.

Type III assigns the H tone to the last syllable of the word. Angelescu (2013a) uses the diminutive prefixes (*rii-* and *ama-* of classes 5 and 6) to change the number of syllables and to highlight the difference between Types II and III since changing the prefix does not change the tonal Type of nouns. In Angelescu’s (2013a) analysis, the change of the prefix still leaves the ambiguity between Types II and III for monosyllabic noun stems since these nouns are maximally

trisyllabic together with the noun class prefix. However, my data reveals another difference between Types II and III: Type III tone is always anticipated already on the penultimate syllable whereas Type II tone, even when assigned to the final syllable, is not anticipated. Therefore, for example *chaa-sirí* ‘ropes’ and *cham-bɛɛchi* ‘pigs’ have different tonal realisations: in *cham-bɛɛchi* ‘pigs’ the H tone is anticipated, i.e. the pitch starts rising, already on the first stem syllable, indicating Type III whereas in *chaa-sirí* ‘ropes’ there is no anticipation, as is typical for Type II nouns.

Comparing the tone patterns of INI and Proto-Bantu

Although the nominal tone patterns are partly identical in Ikoma, Nata, and Isenye, a closer look at the data reveals that there are no one-to-one correspondences between the tonal patterns. Isenye and Nata have a fixed number of tonal distinctions regardless of the number of stem syllables, whereas in Ikoma longer noun stems have more tonal distinctions than short noun stems. The tone patterns of the three systems can be summarised in Table 1.

In the reconstructed Proto-Bantu, tones are specified for each vowel of the noun stem.³ Therefore, monomoraic noun stems have two different tonal patterns (H and L), bimoraic noun stems have four patterns (HH, HL, LH, LL), and so on. The Great Lakes Bantu languages—and Eastern Bantu languages more generally—often have more restricted tonal systems. In these systems, for example, the four-way contrast of Proto-Bantu bimoraic noun stems has been reduced to a three-way contrast, where the HH pattern has merged with either the HL or the LH pattern, yielding a system in which at most one H tone is allowed per stem (Philippon 1998). This means that monosyllabic stems have two tonal patterns (H and \emptyset), bisyllabic stems have three tonal patterns (H \emptyset , \emptyset H, $\emptyset\emptyset$), that is, the number of possible tonal patterns is the number of stem syllables plus one (n+1).

Ikoma and Nata have retained the tonal opposition of Proto-Bantu monosyllabic noun stems: in Ikoma the contrast is between H and toneless stems whereas in Nata the contrast is between Types III (H on final σ) and I (H on σ_2), respectively (12). Isenye has lost the tonal distinction on monosyllabic stems. The correspondences for monosyllabic noun stems are illustrated in Figure 2.

(12)	PB	Nata	Ikoma	Isenye	
	*-dá	<i>aan-dá</i>	<i>an-dá</i>	<i>in-dá</i>	‘louse’
	*-dà	<i>áán-da</i>	<i>an-da</i>	<i>in-dá</i>	‘stomach’
		<i>aa-ká</i> ◊	<i>a-ká</i>	<i>i-ká</i>	‘home’
		<i>áá-ka</i> ◊	<i>a-ka</i>	<i>in-ká</i>	‘lion’

When looking at bisyllabic noun stems, the situation is this (Figure 3): Nata Type I nouns correspond to Ikoma H \emptyset and $\emptyset\emptyset$ stems. Nata Type II corresponds to only H \emptyset stems, and Type III to Ikoma \emptyset H and H \emptyset . Looking at the two systems from the Ikoma side, the picture makes more sense: All Ikoma $\emptyset\emptyset$ noun stems in the database are Type 1 in Nata (H on σ_2 , i.e. often the prefix syllable), all Ikoma \emptyset H nouns are Type III in Nata (H on the final σ , as in the corresponding Ikoma pattern), and Ikoma H \emptyset noun stems are found in all three types in Nata (H on σ_3 , i.e. often the first syllable of the stem).

Table 1: Ikoma-Nata-Isenye tone patterns

	The System	The Patterns
Ikoma	n+1 or n+2 tonal types	no H H on any stem σ multiply linked H in trisyllabic and longer stems
Nata	3 tonal types	I: H on σ_2 II: H on σ_3 III: H on final σ
Isenye	2 tonal types	stem-initial H multiply linked H

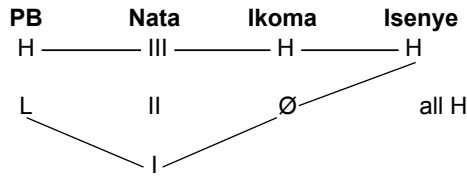


Figure 2: Ikoma-Nata-Isenye monosyllabic tone patterns compared

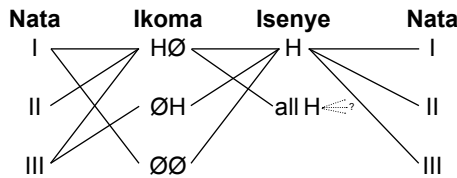


Figure 3: Ikoma-Nata-Isenye bisyllabic tone patterns compared

Isenye bisyllabic patterns differ more from the other two. Isenye bisyllabic noun stems with the multiply linked H tone are all HØ in Ikoma, but Isenye bisyllabic stems with the H on the first syllable of the stem are found in all three tonal types in Ikoma. Isenye bisyllabic nouns with the H on the first syllable of the stem are also found in all three tonal types in Nata. The data available for Nata does not allow stating direct correspondences between the Isenye all H pattern and Nata tonal types of bisyllabic noun stems.

Proto-Bantu LL stems are mostly realised as toneless (ØØ) stems in Ikoma ((13); Figure 4; see more details in Aunio 2010). The Ikoma ØH pattern is probably a later invention and does not match Proto-Bantu tone patterns. Furthermore, Ikoma HØ pattern encompasses Proto-Bantu patterns HH, HL, and LH and it is the most common (almost 70% of the noun stems). Isenye multiply linked H pattern has corresponding Proto-Bantu words with HL and HH patterns, whereas Isenye stem-initial H corresponds to all four Proto-Bantu patterns. Angheliescu (2013a; 2013b) does not compare Nata data to Proto-Bantu.

(13)	PB	Ikoma	Isenye	
	*bókò	<i>oku-bóko</i>	<i>okubóko</i>	'arm'
	*kángà	<i>an-kánga</i>	<i>in-kángá</i>	'guinea-fowl'
	*kókó	<i>an-góko</i>	<i>in-góko</i>	'chicken'
	*búdu	<i>am-bóro</i>	<i>em-bóro</i>	'lizard'
	*bògó	<i>am-bógo</i>	<i>im-bógo</i>	'buffalo'
	*jànjá	<i>a-nyáncha</i>	<i>i-nyáncha</i>	'lake'
	*gùdu	<i>ogo-goro</i>	<i>ogo-góro</i>	'leg'
	*jùni	<i>eki-nyonyi</i>	<i>eki-nyónyi</i>	'bird'

Isenye trisyllabic noun stems are almost equally distributed between the two tonal patterns, i.e. stem-initial H and multiply linked H. These two patterns do not correspond regularly to the three tonal types in Nata or the five patterns found in Ikoma trisyllabic noun stems. With the data currently available, it seems that there are no one-to-one correspondences between Nata and Ikoma tonal patterns either. Furthermore, the multiply linked H pattern corresponds to both Isenye patterns (14). Also, in Ikoma the Swahili loans do not show the multiply linked H pattern, but in Isenye they do (15). More data might show regular tendencies, but at the present it seems that these sub-systems have developed independently from each other.

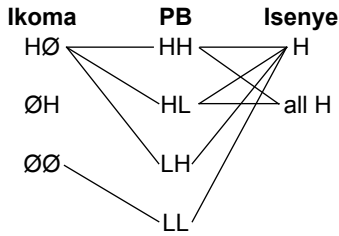


Figure 4: Ikoma and Isenye bisyllabic tone patterns compared to Proto-Bantu

- (14) **Ikoma** *eri-búrúngé*
a-tíkéré
- Isenye** *ri-búrúngá*
en-tíkere
- ‘egg’
 ‘donkey’
- (15) **Ikoma** *eri-babayó*
eri-sandéko
- Isenye** *ri-bábáyó*
ri-sándíko
- Swahili** *papai*
sanduku
- ‘papaya’
 ‘box’

Comparing the systems and conclusions

In all three varieties studied in this paper, Ikoma, Nata, and Isenye, tone is a lexical property of nouns, but the underlying organisation and surface realisation rules of the tones are different. Moreover, the systems are not derivable from each other. Taking into account that ‘prosody seems to be more prone to cross-linguistic replication in contact situations than segmental phonology’ (Matras 2009: 231), it is interesting that these three varieties show that much variation, while on the segmental level—at least lexically—they are so similar that they are considered dialects of the same language. More research—both on Ikoma, Nata, and Isenye as well as on other comparable contact contexts—is needed before it can be stated if these kind of prosodic differences in systems that combine properties from both prototypical tone and stress systems indicate genetic distance.

As presented above, Nata satisfies the obligatoriness and culminativity definitional properties of stress systems. Interestingly, Ikoma and Isenye differ from Nata—as well as from each other—in relation to these properties. All three varieties have the syllable as the TBU, but Ikoma nominal tone satisfies neither obligatoriness (Ikoma has toneless nouns) nor culminativity (Ikoma has multiply linked H tones). Isenye is between Nata and Ikoma in that it satisfies only obligatoriness (all nouns have at least one syllable marked for the highest degree of prominence). Therefore, three of the possible four combinations are attested in what are called dialects of the same language (16).

(16)

	+Culm(H)	-Culm(H)
+Oblig(H)	Nata	Isenye
-Oblig(H)		Ikoma

Ikoma nominal tones are not weight-sensitive nor aligned with the domain edges. In Isenye, both tonal patterns are aligned with the left edge of the nominal stem. Nata differs from the other two in that the tonal domain of the nominal tone is the word—the noun stem together with the prefix—whereas in Ikoma and Isenye the domain is the stem. Nata also aligns nominal tones with both the left and the right edge of the noun. Of these, the H tone assigned to the second syllable (Type I) is sensitive to syllable weight as it is retracted to a heavy initial syllable.

Although this paper compares only nominal tone systems, it is worth pointing out that both Ikoma and Isenye melodic tones—tones that play a role in verbal inflection—are assigned relative to domain edges and they are sensitive to syllable weight (Aunio 2013; forthcoming). Nata melodic tones are also aligned with domain edges, but they are not syllable weight sensitive (Lam forthcoming). With regard to the criteria of obligatoriness and culminativity, Ikoma melodic tones

behave like the nominal tones: both multiple tones and toneless words are allowed. Whereas Isenye cannot have toneless nouns, but toneless verbs are allowed. On the other hand, Nata satisfies culminativity in nominal tone system, but multiple H tones are allowed in verbs.

Since Ikoma, Nata, and Isenye combine tonal and stress features in different ways, it is of interest to briefly compare these varieties to the other geographically proximate JE40 Bantu languages in the area. Research on the tone systems of the varieties is far from completed, but some features can be compared to the INI systems.

Ngoreme (JE401 [ngq]) borders with both Isenye and Nata. Some Ngoreme speakers have contrastive lexical tone (SIL 2011), but in the Ngoreme variety with which I have worked, the lexical tones are completely conditioned by syllable structure (Aunio forthcoming). All nouns, including the infinitive forms of verbs, have one syllable with highest prominence (obligatoriness). For example with trisyllabic infinitives, the H is assigned to the heavy stem syllable (*ku-ráágera* ‘to eat’), or to the second of two adjacent heavy syllables (*ku-saasáama* ‘to pray’). As with Nata nominal tone, in Ngoreme syllables with both contrastive and conditioned long vowel are considered heavy (Aunio forthcoming). In case there are no heavy syllables, the H is realised on the final stem syllable or alternatively also on any other adjacent stem syllable (*ko-higamá/ko-higámá/ko-higámá* ‘to kneel’), i.e. culminativity is not necessarily satisfied. While Isenye also features as [+Oblig(H), -Culm(H)], tone assignment is very different in these two varieties, since in Ngoreme the defining factor is the syllable structure which does not play a role in Isenye nominal tone.

Ikizu (JE402 [ikz]) differs from all the other varieties discussed in this paper in that it aligns nominal lexical tones in relation to the right edge of the stem whereas in the other varieties the H tone is aligned with the left edge, with the exception of Nata Type III (H on the final σ). Ikizu nouns are toneless (*umu-rimi* ‘farmer’) or the tone is assigned to either the penult (*omo-rámu* ‘brother-in-law’) or the antepenult (*umú-βisa* ‘enemy’) (see Aunio et al. forthcoming for a description of Ikizu nominal tone system). Ikizu has a systematic H spread of nominal tones which spreads them to the end of the noun, except utterance-finally (*omo-rámú* ‘brother-in-law’, *umú-βisá* ‘enemy’). It also appears that toneless utterances are not allowed in Ikizu since the toneless nouns are pronounced with an antepenultimate H or stem-initial H in isolation (*umúrimi* ‘farmer’). Therefore, Ikizu phrase-medial surface forms pair with Ikoma in regard to obligatoriness [-Oblig(H)] and culminativity [-Culm(H)], while underlyingly the nominal tones are culminative.

Simbiti (JE431 [ssc]) is underlyingly very different from INI as well as from Ngoreme and Ikizu, since in Simbiti the TBU is the mora and not the syllable. Although lexical tones are assigned to one mora only, on the surface there is always one syllable with the highest prominence (obligatoriness) since a tone doubling rule links a H tone associated to only one mora of a long vowel to both moras of the long vowel. On the other hand, trimoraic and longer nominal stems are not culminative since the H tone can be realised on two syllables.

What we know about the JE40 languages now shows that these languages differ more from each other than has been expected (Aunio et al. forthcoming). It has been demonstrated in this paper that Ikoma, Nata, and Isenye—varieties considered as dialects of a single language—have fundamentally different lexical tonal systems that also differ from the surrounding languages. The most striking of these differences are the Nata nominal tone domain (word in Nata vs. stem in all other varieties) and Ikoma’s contrast between stems with all-H and all-L stems. These results call for a more detailed study of the JE40 languages that goes beyond lexicostatistics and compares the grammatical systems found in each variety. Only a more in-depth study of these languages will make it possible to reconstruct the linguistic history of the area and describe the paths along which the individual varieties have emerged.

Notes

¹ The term *variety* is used here as a neutral term, instead of *dialect* or *language*, since the status of these varieties is far from clear as they form part of a large continuum. Therefore, *variety* covers both regional variations as well as variation between different groups of people.

³ References for Proto-Bantu forms (marked with *) are from Bantu Lexical Reconstructions 3 (BLR 3, www.africamuseum.be/collections/browsecollections/humansciences/blr/).

Abbreviations

C	consonant
H	high tone
L	low tone
NPx	noun class prefix
Pre-Px	pre-prefix
N	nasal
V	vowel

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