# Gestalt Iiconicity in Ekegusii Aadjective Vvowel Llengthening

**Abstract**

*In this paper, I seek to demonstrate three key points. That vowel lengthening in EkeGusii, a Kenyan Bantu language, is iconized. That the extent of vowel lengthening in the adjectives shows isomorphic relations between it and the meaning impressions in the sense of structural degrees of intensity. That iconic vowel length cannot be accounted for without appealing to theoretical arguments of durativity being a matter of time and not mora positions. To achieve this, I explain the concept gestalt iconicity, explore vowel lengthening explaining why I take long vowels and concepts of chronemity, and highlight the structure of EkeGusii adjectives following Nash (2011). I then present data as analysed in tabular form, discuss iconized vowel lengthening, and finally use spectrographic analyses to show why vowel lengthening may not be a matter of mora positions in iconized forms, or explainable under syllabic weight for that matter. The detailed argument around iconic lengthening in EkeGusii can be found in Mariera (2021a).*

**Key words:** *Gestalt iconicity, vowel lengthening, moraic phonology, chroneme*



## 1 Introduction

The prosodic structure of adjectives gives clue to the spatial dimensions of the nouns they qualify. This is gestalt iconicity discussed in relation to adjectives in which prosodic features like vowel lengthening, and other changes in pitch, resonance and stress placement signal the structural shapes nouns. The analysis of vowel lengthening in adjectives could be described using various approaches such as syllabic weight by MacCawley (1968) or the recent moraic phonology but these approaches may not satisfy certain contextual needs in EkeGusii where speakers and hearers tap exclusive and contextually dictated gradients of meaning only afforded by factors of common ground. To address this problem, Odden's (2011) approach to vowel length is explained in the perspective of older views of vowel length by Jones ([1944]1967) and

Abercrombie, (1964). This allows us to perceive lengthening as an expandable feature that spans over time rather than a matter of mora positions. This position is supported by spectrographic analysis of vowel lengthening in the roots of EkeGusii adjectives.

## 2 Gestalt Iiconicity

This is a type of diagrammatic iconicity in lexical items where structures reveal something about the structural, aspectual and spatial parameters of what the isomorphic lexical items depict. In particular, vowel lengthening is an iconized prosody that is simultaneously accompanied by other equally iconized features, including variations in fundamental frequency, voicing, resonance and others (see Mariera, 2021b). On a wider scale, by examining the structure of lexical long vowels in specified word classes and in deictic, spatial and temporal expressions, we find isomorphic information that correlates to notions such as size, intensity or degree, geographical distance, and novelty, among others. Structure and the prosodic correlates of segments mirror grammatical information. Apart from adjectives, our focus here, iconic lengthening, is attestable in other word classes including verbs, adverbs, and in deictic expressions of time and space, as detailed in Mariera (2021b).

## 3 Vowel Llengthening

At this early point, I wish to address the question of what long vowels are in a situation where vowels span over time showing correspondence with meaning impressions being conveyed, varying from context to another. The findings herein pose a challenge to the definition of the mora being "one of what heavy syllables have two of" (MacCawley, 1968:525-6). This challenge is extended to moraic phonology where a heavy syllable is perceived as having two mora positions. A spectrographic analysis of data (see § 8 below) reveals that a different approach to the description of long vowels is needed to explain what long vowels are. My argument will be a little retrogressive, inclining towards the prosodic conception of length by Jones (1944; 1967), and Abercrombie (1964), who treat long and short vowels as being identical, and the length difference between them as a chroneme, a separate feature independent of the vowels. This implies that a long vowel is that which is stretched over a time-span. The second timing slot is therefore, an indicator of extra time, but not just an additional mora position. Such an explanation looks more satisfying for our purposes as compared to moraic phonology which

follows the mora count approach, as adopted in (Hayes, 1989), Bickmore, (1995b), Nash (2011) and others.

If moraic phonology were applied in the representation of lengthening in *ekenyere::re* (very narrow/thin/slim indeed), two mora positions would not account for what speaker actually imply in varying contexts, so a customized application would result in the following unsustainable representation in Figure 1.

Comment [A1]: All examples should be tone marked.

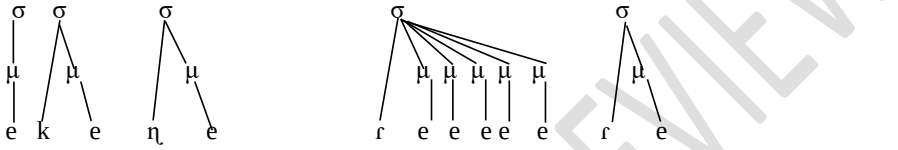


Figure1. A customised moraic representation of *ekenyere::re* (very narrow/thin/slim indeed)

The challenges facing this kind of representation are not only obvious, but also pose the following questions. (1)What is it that informs the presentation of five mora positions? (2) What if more or less positions were presented? (3) Does moraic phonology allow for such positions apart from two positions for the long vowels? (4) Is this representation tenable for generalizations? (5) Does the stretch of the long vowel really meet contextual demands? Since this looks simply cumbersome and theoretically unsound, Odden's (2011) view of a long vowel as being 1+infinity looks more plausible, but the question that remains unaddressed is, what is this 'one,' to which infinity is added. Treating long and short vowels as one and the same elastic or autonomously spreadable segment over time spans looks more convincing. Of course, this captures the sense of infinity. Therefore, Jones' (1944, 1967) and Abercrombie's (1964) views may be found more seminal in this study, where the length difference between short and long vowels is a chroneme, a separate feature to do with time, most likely dependent on contextual demands. Though neither Jones nor Abercrombie addresses contextual issues, the role of context is cannot be ignored. This is mainly because speakers in EkeGusii lengthen vowels, on the basis of contextual understanding. This is shared knowledge between speaker and hearer. Regardless,

issues of syllable weight remain unaddressed as it appears that a vowel can stretch to any context-determined extent, rendering root syllabic weight to be inevitably relative.

Elsewhere, Simard (2013) observes that lengthening indicates durativity in Australian languages, with particular examples from Jaminjung. For instance, the intonation units *yirrurra-wardagara-nyi=ngardi:::* means "catching the goats took quite some time" while *waya=wung ga-yingi:::* means "the callout continued for some time," (2013, p. 67). Similar language features (iconic lengthening), are observed in Japanese (Iwasaki, 2002), and Zulu (Childs, 1994). In the analysis of Kisi ideophones, Childs notes that prolonged ideophones have an iconic component so that vowel elongation is associated with extension in time or space.

## 4 The Mmorphological Sstructure of EkeGusii Aadjectives

Following Nash (2011), the morphological structure of adjectives is considered to take the form PREFIX+STEM. This is analyzable as follows:

[[nominal pre-prefix-adj agreement prefix]$_{APX}$ Adjective stem]$_{ADJ}$.

Table 1, adopted from (Nash 2011) gives an outline of the classes of adjectives and their analyses as shown. It is clear that that the adjective agreement prefix actually agrees with the noun class prefix prefix; the adjective agreement prefixes tend to copy the noun class prefixes. For instance, example (b) from Table 2 below if mapped from Table 1 (listing class pre-prefixes and prefixes) is, therefore, analyzable as follows:

| e | ge | sinini | (small – inanimate) |
|---|---|---|---|
| (nom pre-prefix) | (adj agr prefix) | (adj stem) | |

This falls under class 7, only that the voiceless stem initial consonant requires a voiced consonant in the adjective agreement prefix for ease of articulation. In fact, the possible noun that can be qualified by the adjective will have the noun class prefix being ke- or ge- as in (a) and (b) below:

| a) | e- | ge- | kombe | e- | ge- | sinini |
|---|---|---|---|---|---|---|
| | pre-pref | pref | cup | nom pre-pref | adj agr pref | small |
| | /e | ɣe | kɔmbɛ | e | ɣe | sinini/ |

'small cup'

b) e- ke- moni e- ge- sinini
pre-pref pref cat nom pre-pref adj agr pref small
/e ke moni e ɣe sinini/
'small cat'

Table1. EkeGusii class pre-prefix and class prefix (Source Nash 2011:67)

| Class | nominal pre-prefix (pp) | noun class prefix | adjective agreement prefix |
|---|---|---|---|
| **1** | **ó-** | **mo-** | **mo-** |
| **1b** | **Ø** | **Ø** | |
| **2** | **á-** | **ba-** | **ba-** |
| **3** | **ó-** | **mo-** | **mo-** |
| **4** | **é-** | **me-** | **me-** |
| **5** | **é-** | **ri-** | **ri-** |
| | **H** | **rii-** | **rii-** |
| **6** | **á-** | **ma-** | **ma-** |
| **7** | **é-** | **ke-** | **ke-** |
| **8** | **é-** | **bi-** | **bi-** |
| **9** | **é-** | **Ø** | **n-** |
| **9a** | **é-** | **n-** | |
| **10** | **H** | **chi-** | **chin-** |
| **10a** | **H** | **chin-** | |
| **11** | **ó-** | **ro-** | **ro-** |
| **12** | **á-** | **ka-** | **ka-** |
| **14** | **ó-** | **bo-** | **bo-** |
| **15** | **ó-** | **ko-** | **ko-** |
| **16** | **á-** | **Ø** | **Ø** |
| **21** | **H** | **nya-** | **nya-** |



## 5 Data Ssources and Aanalysis

For our purposes, the data presented here was developed first by introspection. This approach has been supported by various scholars including Talmy (2018, cited in Mariera, Barasa and Gesura 2024) among others. The data was then exposed to four purposively selected native speakers who were asked to examine, understand and later read the adjectives to bring out the various impressions of intensity. The respondents were recorded and the reading later analysed using

Praat version 6036. This program allowed retrieval, filtration (denoising) of recorded material, and truncation of unrecorded parts. The initial recording was done in silent rooms to increase efficiency and reliability. The analyses herein represent one out the three respondents since no substantive variations were realized between the four respondents.

## 6 Data Presentation

Table 2 (below) introduces a list of adjectives with the transcriptions done down the first columns, the glosses given once for each different adjective on both sides of the contrasts, and function of the intensified meaning exemplified once across row (a) to avoid redundancy. The adjective agreement prefixes for all the adjectives relate to inanimate subject prefixes of class 7 in the relevant nouns' subject prefixes. All the adjectives, therefore, qualify inanimates in both negative and positive aspects. Change of the adjective agreement prefix, say from class 7 to 6 or 3, does not affect the target vowel lengthening in the agreement prefix or adjective stem, or rather, the changes in relative pitch and other prosodies in the adjective string.

Though languages like English spell out a particular order of adjectives determined by semantic sets (Quirk, Greenbum, Leech, & Svartvik, 1972:267), the features listed in (a) to (g) of Table 2 are not in any way ordered, as this is of no immediate priority, but they help explain the contrasted feature between the two sides of negative and positive attributes. The increasing degree of the attributes in the negative and positive aspects is represented by increasing colons across Table 2 instead of sequencing vowels as elsewhere in the study, unless sequences are used for exemplification. However, the use of single or double colons is not an accurate representation of lengthening whatsoever.

Table 2. Iconic vowel lengthening in adjectives

| | | **Increasing negativity** ⟶ | | | **Increasing positivity** ⟶ | | |
|---|---|---|---|---|---|---|---|
| | ***attribute*** | ***Absolute adj*** | ***Very…*** | ***Very …. indeed*** | ***Absolute adj*** | ***Very…*** | ***Very… indeed*** |
| a | Quality | ekebe<br>[ekeβe]<br>(bad) | eke:be<br><br>(very bad) | eke::be<br><br>(very bad indeed) | ekiya<br>[ekija]<br>(good) | eki:ya<br><br>(very good) | eki::ya<br><br>(very good indeed) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| b | Size | egesinini [egesinini] (small) | egesini:ni | egesini::ni | ekenene [ɛkɛnɛnɛ] (big) | ekene:ne | ekene::ne |
| c | Weight | ekegusu [ekeɣusu] (light) | ekegu:su | ekegu::su | ekerito [ekeritɔ] (heavy) | ekeri:to | ekeri::to |
| d | Breadth/ thickness | ekenyerere [ekeɳerere] (thin/slim/narrow) | ekenyere:re | ekenyere::re | ekegare [ekeɣare] (wide) | ekega:re | ekega::re |
| e | Height /length | ekieng'e [ekieŋe] (short) | ekie:ng'e | ekie::ng'e | egetambe [eɣetambe] (long) | egeta:mbe | egeta::mbe |
| f | Quantity | egeke [eɣeke] (little) | ege:ke | ege::ke | ekenge [ekenŋe] (much) | eke:nge | eke::nge |
| g | Taste | ekeroro [ekeroro] (bitter) | ekero:ro | ekero::ro | egiansu [eɣiansu] (sweet) | egia:nsu | egia::nsu |

**7 A Dediscussion of Iconicity in EkeGusii AT badjectives**

The first question to address is which part of the adjective is actually affected by lengthening. Using examples (a) and (b), it can be observed that both prefixal and adjective stem vowels can be lengthened; the adjective agreement prefix vowel lengthens in (a) while the adjective stem vowel lengthens in (b). In adjectives that lack the agreement prefix (following their absence in the noun) as in *ase a:be* (very bad place), it is the noun pre-prefix that lengthens as shown.

*a* *se* *a:* *be* (very bad place)
(nom pre-pref) (nom stem) (nom pre-pref) (adj stem)
Place very bad

Secondly, in all the examples (a-g), and from the example above, it is clear that it is the penultimate vowel that lengthens. Therefore, the rules of vowel lengthening in the adjective are insensitive to morpheme categories; they apply non-selectively to penultimate vowels.

Having established where the rules of lengthening apply, the second question to address is the function of the said lengthening. Using the example above, *ase a:be* (a very bad place), naturally ellipted as *as'a:be* , it turns out that the intensifier "very" is conveyed by lengthening which applies to the nominal pre-prefix. This morpheme therefore serves both morphological and phonological functions where the latter communicates emphasis. The durative aspect of the vowel spans over time implying that there is motivated adverbial meaning in duration.

For us to ascertain whether lengthening is motivated, analysis of more examples from Table 2 is warranted. Example (a) has lengthening of the nominal prefix in two different degrees, apart from the absolute, where *eke:be* means "very bad," and *eke::be* can be glossed as "very bad indeed" or "extremely bad." The contrast with the positive attribute equally displays up to three relative degrees of comparison where *ekiya* glosses as "good," *eki:ya* "very good" and *eki::ya* as "very good indeed." If tone is varied in example (g), the word can be a noun meaning 'local brew' but the contrastive tones are not needed for our purposes here. The adjective *ekeroro* glosses as "bitter," or as *ekero:ro* "very bitter," and as *ekero::ro* "very bitter indeed." Clearly, lengthening rules apply on the adjective stem's penultimate vowel. Generally, the more the vowels on the adjective, the higher the degree of the attribute is. By examining the form of the adjective, we can get information about its meaning. There is sure correspondence between form and meaning in the sense of comparison.

While languages like English can express comparison in gradable adjectives morphologically (Quirk, Greenbum, Leech, & Svartvik, 1972), one way in which EkeGusii expresses such comparison is by prosodic means as shown. Other ways of expressing gradability could be grammatical by use of post-modifiers as in *ekeroro mono* (so bitter), but the iconic value of such phrases cannot be established here. Certainly, lengthening in a considerable number of EkeGusii adjectives is a signal of adjective intensification, which is motivated by the linguistic necessity on the speaker's part to convey particular impressions. Since lengthening is informative, it is, therefore iconized.

## 8 A spectrographic Aanalysis of Vowel Llengthening in Aadjectives

A few more questions solicit answers. How far can vowels lengthen in iconized adjectives? Does context play any role in such lengthening? Which other prosodies are motivated in iconized

adjectives? To address these questions, Figures 2-4 below display a spectrographic analysis of example (d) from Table 2 focusing on the negative attributes though the positive would equally turn out with fairly similar patterns.

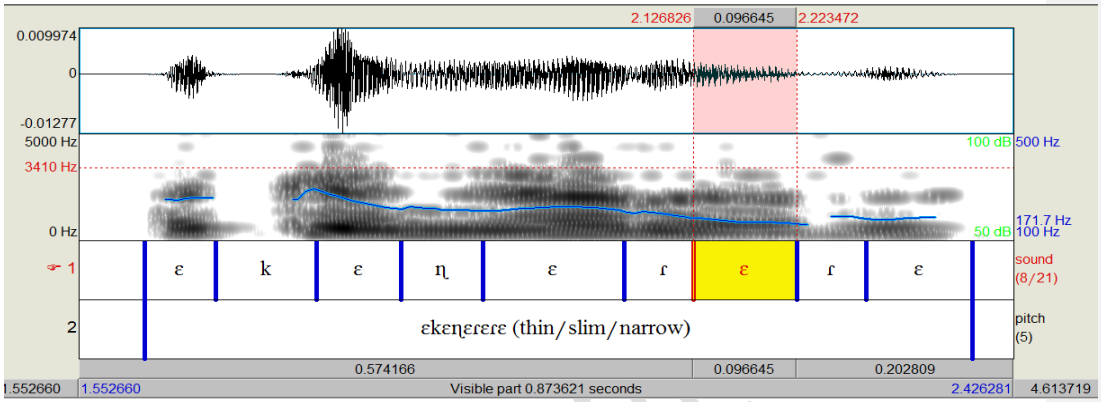

Figure 2. Spectrograph for *ekenyerere* (thin/slim/narrow)

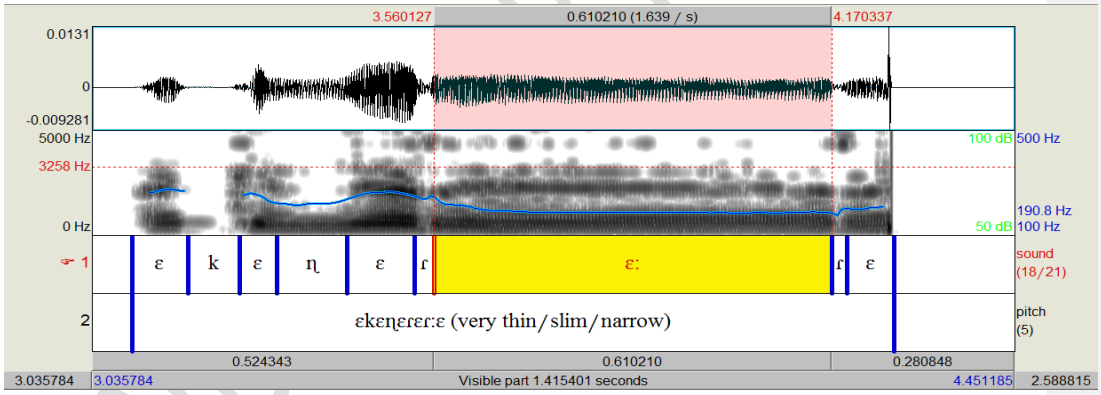

Figure 3. Spectrograph for *ekenyere:re* (very thin/slim/narrow)

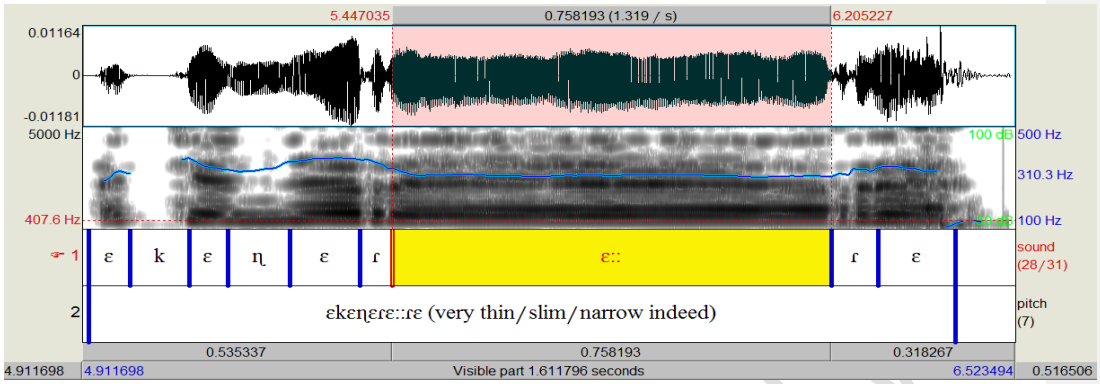

Figure 4. Spectrograph for *ekenyere::re* (very thin/slim/narrow indeed)

In the three spectrographs in Figures 2-4, the spectrograms have been displayed to show the concentration of acoustic energy especially on the lengthened vowels, and justify the segment boundaries therein. For Figure 4, the end of the word boundary sticks inwards away from an unedited noisy scratch. The final vowel spectrograms clearly show the concentration of acoustic energy. The waveforms for the last consonant show it as a double sound because this sound comes out correctly as a flap.

How far the vowels lengthen can be read from the length values of the highlighted penultimate vowel in each spectrograph from Figure 2 to 4; 0.096645s, 0.610210s, and 0.758193s in that order. The values indicate that the short vowel in Figure 2 is by far shorter than the other two. The second vowel (the first long vowel) in Figure 3 is much closer to the third (second long) vowel in Figure 4. These values, checked against those of another respondent, give different values though the value gaps show similar patterns, but all the same, these are relative length values that cannot, whatsoever, be accurately represented by the single or double colons as shown in Table 2. The length marks (colons) only give a guide to which vowel is longer than the other. Therefore, it is a challenge to determine how far penultimate vowels can lengthen as speakers will stretch vowels guided by contextual parameters. The shared knowledge between the speaker and the addressee will dictate how conveniently speakers convey iconic meaning impressions. Further, it is a challenge to represent long vowels, as already noted, in moraic phonology or sequential representation. The colons cannot represent mora positions. All that can be consistently ascertained is that long vowels are characteristically durative in their iconic functions.

To determine which other iconic prosodies are affected, an examination of the spectrographs shows what happens along the pitch tracks. While the first absolute adjective displays falling pitch patterns, picking on highs of 259Hz dropping consistently to lows of 167Hz, the long vowels in Figures 3 and 4 display fall-rise pitches in both cases. Intensifier pitches, therefore, tend to rise suggesting their iconic characteristic. Notably, prosodies seem to apply simultaneously in adjectives, as they do in other word categories such as nouns and verbs (see mariera, $2021_b$ for detail).

## 9 Concluding Remarks

It is clear that iconic vowel lengthening is well accounted for if it is studied as a concept of time spans. This same picture is to be established in deictic expressions, adverbs, and verbs in EkeGusii. There seems to be a degree of iconic stress in EkeGusii adjectives but this needs a thorough examination using actual data collected from native speakers to establish this position. It only remains for research to be conducted in other Kenyan Bantu languages to establish the extent to which iconic lengthening is attestable, and whether other approaches could explain it better. As for our purposes, I posit that any analyses of vowel lengthening can only be established using speech analyzer programs such as praat as even native speaker impressions can be grossly misleading.

**Symbols and abbreviations**

| | |
|---|---|
| σ | -syllable node |
| μ | -mora position |
| adj agr pref | -adjective agreement prefix |
| nom pre-pref | -nominal pre-prefix |
| nom stem | -nominal stem |
| pre-pref | -pre-prefix |
| pref | -prefix |

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