



## Vowel Height Agreement in Ewe

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### Abstract

This paper seeks to give a descriptive account of a vowel height feature agreement process in Ewe. The paper establishes that the height agreement process is neither height harmony nor metaphony. The paper further demonstrates the systematic difference between the coastal dialects and the inland dialects of Ewe in relation to the vowel height agreement process. The height agreement occurs in the cliticization of diminutive marker to nouns and adjectives as well as the cliticization of the 3<sup>rd</sup> person singular object pronominal to verbs. While the agreement process is host controlled in the inland (Uedome) dialects of Ewe, it is enclitic controlled in the coastal (Aɲlɔ) dialects of Ewe. A synchronic analysis indicates that while [ɪ] is the underlying form of the enclitic for the 3<sup>rd</sup> person singular object pronominal as well as the diminutive marker in the coastal dialects of Ewe, [e] is the underlying representation of the 3<sup>rd</sup> person singular object pronominal as well as the diminutive marker in the inland dialects of Ewe.

**Keywords:** clitic, enclitic, metaphony, feature agreement

### BACKGROUND

The Ewe Language is a member of the Kwa sub-group of the Volta-Comoe branch of the Niger-Congo language family. Ewe is a member of the Gbe language cluster spoken within an area stretching from the southwestern corner of Nigeria, across southern Benin and Togo into the Volta Region of Ghana (Capo, 1985; Stewart, 1989, as cited in Kluge, 2000). The language is spoken predominantly in the Volta Region of Ghana. Ewe is used as a lingua franca by most of the native speakers of the Ghana-Togo Mountain languages, a group of about fourteen languages spoken in the mountains of the Ghana-Togo borderland. Additionally, Ewe is used in all activities of the native speakers, be it education, commerce, law, governance or entertainment.

In the Volta Region of Ghana, Ewe consists of many distinct dialects some of which include Aɲlɔ, Avenɔ, Tɔɲu, Dzodze, Kpedze, Ho, Awudome, Peki, Aɲfoe, Sovie, Kpando, Somè, Aflao and Gbi. However, for the sake of this paper, the dialects of Ewe will be grouped into two main geographical dialect blocks namely: Inland dialects (Ho, Awudome, Peki, Aɲfoe, Sovie, Kpando, Gbi) and Coastal dialects (Aɲlɔ, Avenɔ, Dzodze, Somè, Tɔɲu, Aflao). The Inland dialects are commonly referred to as Uedome by the

speakers of the Coastal dialects whereas the coastal dialects are generally referred to as Anɔ by the speakers of the inland dialects. This blanket labeling of the two geographical dialect blocks is due to the fact that the speakers of the various coastal dialects hardly perceive the dialectal nuances that exist among the different speech varieties making up the inland dialects. This holds true for the speakers of the inland dialects too. To the Inland dialect speakers, all the southerners speak just one dialect - Anɔ.

## **VOWEL HARMONY AND VOWEL HEIGHT AGREEMENT**

Vowel harmony refers to a system where all vowels agree in terms of their properties within a specific domain, which is usually said to be the prosodic word (van der Hulst & van de Weijer, 1995). The types of features that are generally spread in vowel harmony processes are [±high], [±front], [±round], and [±ATR]. Some manner features such as "nasal" and "r-coloring" can also spread. In any given harmony language, one or a number of these features can spread at a time. A standard approach to vowel harmony makes reference to distinctive features (with articulatory descriptions) and autosegmental theory (Goldsmith, 1985). However, it is worth noting that some phoneticians are suspicious about such an approach given that acoustic correlates of vowels are not the same for phonologically similar vowels across languages (Lindau & Ladefoged, 1986). An acoustic approach is therefore suggested. Some phoneticians have actually attempted to combine articulatory and acoustic constraints into one grammar (Boersma, 1997)

There are two main ways for features to spread in vowel harmony. A more common pattern is for the features in the root to spread to the affixes. This is known as root dominance, particularly when features spread in both directions as in the case of Japanese and Russian (Alderette, 1996, 2001). The second pattern is known as feature dominance. In feature dominance systems, one feature will spread regardless of whether it originates from a root or an affix and also regardless of the direction. Advance Tongue Root spreading is one of such feature dominance systems (van der Hulst & van de Weijer, 1995). Based on the general principles of 'autosegmental phonology' (Goldsmith, 1976), Clements (1977) presents a set of five defining characteristics of vowel harmony systems, some of which are closely related to the ones noted by Ultan (1973). These defining characteristics are given as:

- Vowel harmony involves the spreading of a phonetically definable feature.
- Vowel harmony is root-controlled.
- Vowel harmony is a bidirectional process. It affects both suffixes and prefixes.
- Vowel harmony applies in an unbounded manner.
- Root controlled vowel harmony is not optional.

Collinder (1965) uses the general term metaphony to describe both umlaut and vowel harmony. Traditionally, umlaut refers to partial, always regressive assimilation of vowel to vowel, being typically in a weak position (usually unstressed and or word final), while vowel harmony has often – but not always – been used to refer to the same but progressive assimilation.

However, according to Ultan (1973), the association of specific direction with vowel harmony is due to historical accident. Ultan explains that, vowel harmony happens to be particularly widespread in early described Uralic and Uralic languages which are predominantly suffixing languages and since in these languages, it is always the stem vowel that determines the shape of the harmonic vowel, the direction of the assimilation is usually progressive. Ultan adds that directionality cannot be a defining factor in analyzing vowel harmony languages and that the only criterion that may play a role in vowel harmony is the presence of two alternating sets of vowels in the inventory. Whenever it is evident in any language that a vowel from one set induces a vowel from another set to change, then vowel harmony exists in that language. Metaphony, on the other hand, is a change in the height of a stem vowel triggered by a suffix vowel. Even though earlier accounts of metaphony have treated metaphony as an example of vowel harmony, metaphony is clearly different from harmony in so many ways (Dillon, 2004).

As mentioned earlier, vowel harmony phenomena are either stem-controlled or "dominant recessive" (Bakovic, 2000). Stem-controlled harmony involves phonological characteristics in which a vowel in the stem induces a change in a vowel in the affix. However, in metaphony, it is the affix vowel that induces a change in the stem vowels. In dominant recessive harmony, a dominant-feature-valued vowel triggers a change in the recessive vowels within a morpheme, and sometimes across morphemes. In this kind of harmony, the dominant feature may spread from either the stem or the affix.

The vowel height agreement process in Ewe is neither a vowel harmony process nor metaphonic process in that it is not limited to any of the defining characteristics discussed in respect of either harmony or metaphony. Even though the target of the height agreement process is only one vowel just like in metaphony, the change is triggered by a host final vowel as well as an enclitic vowel unlike in metaphony. In metaphony, the stem vowels sometimes undergo change but still do not agree with the suffix vowel in height. However, the vowel height agreement process in Ewe ensures that the host final vowel and the enclitic vowel agree in height.

## **EWE VOWELS**

Evidence from the linguistics literature available on Ewe suggests that the language has sixteen phonemic vowels from which each dialect selects a slightly different set. These vowels are: [i, e, ε, ə, a, ɔ, o, u, ĩ, ẽ, ẽ̃, ã, õ, õ̃, û]. While the nasal vowels only occur with oral consonants, the oral vowels occur with both oral and nasal consonants. However, in the environment of nasal consonants, the oral vowels are nasalized. Thus, Ewe has both allophonic and non-allophonic nasalized vowels. Ewe is not a vowel harmony language since it does not satisfy the general principles of vowel harmony discussed above.

**Table 1.** Feature distribution for height

	i	e	ɛ	a	ɔ	o	u
High	+	-	-	-	-	-	+
Mid High	-	+	-	-	-	+	-
Mid Low	-	-	+	-	+	-	-
Low	-	-	-	+	-	-	-

Ewe contrast four values along the tongue-height dimension. The four values along the tongue height dimension are; [high], [mid-high], [mid-low] and [low]. According to Ladefoged, (1971) cited in Lindau, (1978), in describing phonological processes, the use of binary features to express movements along a single parameter mostly amounts to wrong claims about relationships between vowels. It is therefore very pertinent to multivalue the feature high for Ewe in order to fully account for the height agreement process. It is also important to note that Ewe does not have diphthongs and that whenever vowels occur in sequence, they constitute separate peaks of sonority.

## METHOD

The data for this study was collected from recordings of speeches of native speakers of Ewe who have lived all their lives within the respective dialect communities. In all, six (6) dialects of Ewe (Aɲɔ, Avenɔ and Tɔŋu from the Coastal dialect block and Kpando, Ho and Gbi from the Inland dialect block) have been used in the study. Five speakers were selected from each of the respective dialect communities. In all, thirty native adult speakers who were between the ages of 20 and 60 years were used in the study. All the speakers were semi-literates whose education did not go beyond primary school level.

The participants were each provided with five different sentences. In each sentence, the main verb was a transitive verb that ended with a different vowel such that each subject had verbs ending with [i, e, a, ɔ, o, u]. The researcher asked the participants to replace the object nouns in the given sentences with 3rd person singular pronouns. The speakers were also given a set of five adjectives. Each of the adjectives ended with a different vowel. The researcher then asked the speakers to provide the diminutivized forms of the given adjectives for the researcher to record. The recordings were done in quiet places within the various dialect communities. The researcher later subjected the data to a perceptual test by playing the tape to two phonologists who were non native speakers of Ewe for them to determine the vowel qualities of the vowels in the target words. The true qualities of the underlying vowels and their surface forms are ascertained for the study.

## RESULTS: HEIGHT AGREEMENT

The vowel height agreement process is what Stahlke (1971) referred to as "Equal-Height Condition". According to Stahlke (1971, p. 115), "In the Kpando dialect of Ewe, all vowel sequence at the systematic phonetic level must consist only of vowels which are identical at least as to tongue height and tongue root position". Among other things,

Stahlke explained that the condition produces /ii/ and /ui/ from vowel sequences such as /ie/, /ee/, /ue/, and /oe/ by raising /e/ or /o/ to /i/ and by assimilating a final /e/ to /i/. The vowel height agreement process is not exclusive to the Kpando dialect as suggested by Stahlke. As we shall soon illustrate, the vowel height agreement process involves more than just raising a final /e/ or /o/ to /i/. It is our argument that vowel sequences such as /ee/ and /oe/ as presented by Stahlke already meet the condition of "Equal-Height" and therefore may not require any further rising. Any further change in these sequences cannot be explained as being motivated by the need for tongue height agreement.

In Ewe, certain lexical units such as the 3<sup>rd</sup> person singular object pronominal and the diminutive marker are cliticized (treated as if they are affixes of the word that precedes them). A clitic is the class of units whose members exhibit syntactic characteristics of a lexical unit, but show evidence of being morphologically bound to another lexical unit (the host) by being unstressed or subject to word-level phonological rules (Crystal 1980; Hartmann & Stork, 1972; Klavans, 1982). According to Zwicky (1985), typological and theoretical speculations about clitics require that the clitic be adequately distinguished from the inflectional affix on one hand and from the independent word on the other hand. The two enclitics discussed in this study are: the 3<sup>rd</sup> Person Singular Object Pronoun /-i/ and The Diminutive Marker /-i/.

According to Amegashie (2011), the underlying form of the 3<sup>rd</sup> person singular object pronominal is /-i/. In examples (i) *tui*, there is the verb "tu" (grind) and its object "-i" (it) and in example (ii) *fui*, there is the verb

- (i) 

{	tu	i	}
	verb	3SG	
	grind	it	

tui
- (ii) 

{	fo	i	}
	verb	3SG	
	beat	it/him/her	

fui

"fo" (beat) and its object "-i" (it). The object /-i/ is a 3<sup>rd</sup> person singular pronoun which is morphologically bound to the verb that precedes it and therefore subject to certain word-level phonological processes.

The second clitic that also exhibits the vowel height agreement process is the diminutive marker /-i/. In Ewe, the basic diminutive form /-vi/ is sometimes contracted into /-i/. Thus, instead of attaching the form *-vi* to the noun or the adjective host, only /-i/ is attached to the host. The diminutive marker is considered a separate lexical unit since it is a grammaticalized derivation from "vi" the word for child in Ewe (Heine et al. 1991). The diminutive marker "-i" is also morphologically bound to either the noun or the adjective that precedes it and therefore subject to word-level phonological rules as seen in examples (iii) *atsui* and (iv) *kɔkoe*.

(iii)	$\left\{ \begin{array}{l} \text{atsu} \quad i \\ \text{N} \quad \text{DIM} \quad \text{tsui} \\ \text{male} \quad \text{small} \end{array} \right\}$	(iv)	$\left\{ \begin{array}{l} \text{kəkə} \quad i \\ \text{adj.} \quad \text{DIM} \quad \text{kəkoe} \\ \text{tall} \quad \text{slim} \end{array} \right\}$
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The word level phonological process is evident in examples (ii) and (iv) above where the clitic vowel and the final vowel of the host changes respectively. Coincidentally, the two clitics have a similar underlying form: the front high vowel [i]. The grammatical function of the enclitic is therefore determined by the lexical category of the host to which it is attached. The enclitic /-i/ functions as a 3rd person singular pronominal enclitic when it is attached to a verb host as can be seen in examples (v) and (vi) below.

- (v) **Kofi d̥u-i vevie.**  
**Kofi bit 3SG seriously.**  
**Kofi bit him/her/it seriously.**

- (vi) **Ama d̥o-i kplikpaa.**  
**Ama planned 3SG unfailingly**  
**Ama planned it unfailingly.**

However, whenever the same underlying form [-i] is attached to either a noun or an adjective host, it functions as a diminutive marker as in examples (vii) and (viii).

- (vii) **Dzakpasu fe gbɔnɔ-i la bu.**  
**Dzakpasu POSS N DIM Det V**  
**Dzakpasu's female kid is missing.**

- (viii) **Ama fe kutu-i la**  
**Ama POSS pot DIM DET**  
**Ama's little pot**

The close relationship between these two clitics (henceforth enclitic vowels) and the preceding words can be captured in the phonological process that is performed on them as a result of their attachment to the preceding words. Since these enclitics behave as suffixes, the phonological process is seen as occurring within the word domain.

According to Amegashie (2011), the 3<sup>rd</sup> Person Singular object pronoun is /i/ when the preceding verb ends with either /i/ or /u/. He added that whenever the verb ends with any other vowel, the pronoun changes from /-i/ to /e/. By the same token, we can assume that the diminutive marker is also [i] when the preceding host ends with either [i] or [u] but changes to [e] when the preceding host ends with any other vowel. This

statement oversimplifies the phonological rule that changes either the enclitic vowel or the host-final vowel from /i/ to /e/.

The vowel height agreement process in Ewe requires that, the enclitic vowel and the final vowel of the host agree with each other in terms of tongue height. According to Bakovic (2000), with the agreement constraint, the domain of evaluation is local and the agreement constraint performs a pair-wise comparison on adjacent vowels. In Ewe, the need for this featural agreement between adjacent vowel segments (the enclitic vowel and the final vowel of the host) sometimes result in vowel raising and or vowel lowering.

**Table 2.** Hosts with final high vowel /u/ or /i/ in Coastal and Inland dialects

Verb	Gloss	Dialects	
		Coastal	Inland
mù	fell	mùì	mùì
bù	respect	bùì	bùì
dù	eat	dùì	dùì
vù	open	vùì	vùì
fì	steal	fìì	fìì
dì	burry	dìì	dìì
tsrì	abhor	tsrìì	tsrìì

As can be observed in Table (2), when the host ends with either [i] or [u], both the enclitic vowel and the final vowel of the host remain unchanged in both dialects of Ewe similar to what Amegashie (2011) observed. We want to suggest that there is no change in either the enclitic vowel or the final vowel of the host because the two vowels automatically agree in the feature [high].

**Table 3.** Hosts with final mid-high vowel /o/ or /e/ in Coastal and Inland dialects

Verb	Gloss	Dialects	
		Coastal	Inland
kò	laugh at	kùì	kòè
fò	beat	fùì	fòè
dó	plan	dúì	dóè
tó	tell	túì	tóè
sè	hear	sìì	sèè
fé	split	fìì	fèè
gé	drop	gîì	gèè
lé	catch	lîì	lèè

It is observed in Table (3) that in the Coastal dialects of Ewe, whenever the host ends with either of the two mid-high vowels [e] or [o] the enclitic vowel [-i] remains unchanged while the final vowel of the host is raised one step to agree with the enclitic vowel in height. However, in the Inland dialects, the final vowel of the host remains unchanged while the enclitic vowel is rather lowered one step to agree in height with the final vowel of the host. We want to propose here that while the vowel height agreement process is triggered by the enclitic vowel in the Coastal dialects of Ewe, the process is triggered by the final vowel of the host word in the Inland dialects. Thus, while the enclitic vowel /-i/ is causing the final vowel of the host /o/ to raise to /u/ in the Coastal dialects, the final vowel of the host /o/ is rather causing the enclitic vowel /i/ to lower to /e/ in the Inland dialects. The process is neither limited to enclitic vowel as in metaphony nor the vowels in the host as in vowel harmony.

The data in Table (3) indicate a clear distinction in the pattern of the vowel height agreement process along dialectal lines. While the height agreement process is triggered by the enclitic vowel in the Coastal dialects, it is triggered by the host final vowel in the Inland dialects.

**Table 4.** Hosts with final mid-low vowel /ɔ/ in Coastal and Inland dialects

Verb	Gloss	Dialects	
		Coastal	Inland
fɔ̃	find	fòè	fɔ̃è
klɔ̃	wash	klóè	klɔ̃è
dɔ̃	send	dóè	dɔ̃è
nyɔ̃	wake up	nyòè	nyɔ̃è
lɔ̃	love	lòè	lɔ̃è
kplɔ̃	lead	kplòè	kplɔ̃è

It is observable from Table (4) that, when the host ends with the mid low back vowel /ɔ/, two things happen in the coastal dialects. In the first place, there is a change in the enclitic vowel and then the final vowel of the host also changes. We would like to propose here that this double change occurs in a systematic manner. First, the final vowel of the host is raised one step from the mid low level to a mid high level. Then, the enclitic vowel lowers one step from high to mid-high level. At this point, the two vowels agree in height. Considering this double movement, we again want to propose that segments do not lower or raise more than one step at a time. Thus, /ɔ/ cannot be raised from the mid-low position to a high position, hence the double movement. This is in line with Donegan's claim that lowering decreases the height of vowels by one degree (Donegan 1976). Parkinson (1996) adds that in the Incremental Constriction Model, a partial height assimilation of vowels involves a single instance of [closed] which corresponds to a single step or increment along the height continuum.

In the inland dialects, as illustrated by the data in Table (4), the final vowel of the verb once again remains the same confirming the proposal that the process is triggered by the final vowel of the host in the inland dialects. The enclitic vowel is rather lowered to the level of the triggering vowel /ɔ/. We want to argue that, if the enclitic vowel in the



inland dialects was /-i/, there would have been a double movement as seen in the case of the coastal dialects, since a segment cannot move more than one step at a time. Our assumption therefore is that, the 3<sup>rd</sup> person singular pronoun in the inland dialects is /e/ and not /i/. This assumption is in line with Stahlke (1971:87) that "in most works on Ewe, the third singular clitic pronoun is given as /é/ for subject and as /è/ for the object."

Working with this assumption, the interpretation of the Inland dialects data presented in Table (2) has to change. That is, the Inland dialects data in Table (2) rather indicate the raising of the enclitic vowel from the mid-high level to high instead of our initial claim that nothing changed. Following from this assumption, we want to argue that in Table (3) above, there is no raising or lowering of the enclitic vowel for the inland dialects since both the final vowels of the hosts /o,e/ and the enclitic vowel /e/ already agree in height. It is proposed therefore that, the differences between the speeches of the two dialect areas as far as the vowel height agreement process is concerned go beyond the triggering vowels. The underlying form of the enclitic vowel is not the same across the two dialect areas. While the underlying form of the enclitic vowel is the front high unrounded vowel /i/ in the Coastal dialects of Ewe, it is the mid-high unrounded vowel /e/ in the Inland dialects of Ewe.

**Table 5.** Hosts with final low vowel /a/ in Coastal and Inland dialects

Verb	Gloss	Dialects	
		Coastal	Inland
sà	knot	sèè	sèè
dà	cook	dèè	dèè
fà	mourn	fèè	fèè
dà	throw	dèè	dèè

Whenever the host ends with the low-central vowel /a/, a number of processes occur in the Coastal dialects. The enclitic vowel causes the host-final vowel /a/ which is a central-low vowel according to Duthie (1996), to move to a front mid-low position as /ε/ and the enclitic vowel also lowers one step to a mid-high position /e/. The host-final vowel is raised first because the process is triggered by the enclitic vowel in the coastal dialects as explained above. Even with double movement, the two vowels do not still agree in height. At this point, neither host-final vowel nor the enclitic vowel can move any further since segments cannot move more than one step at a time. Since the rule says that an enclitic vowel and the host-final vowel must agree in height, the final vowel of the host is deleted. According to Amegashie (personal conversation), in the Coastal dialects (especially Anlo), the front mid-high vowel /e/ rarely occurs in root words. The occurrence of this vowel in any word is therefore indicative of a phonological operation of some sort. The data in Table (5) illustrated therefore that the central-low vowel /a/ does not fully undergo the height agreement process in the Coastal dialects of Ewe.

The explanation for the raising of the low-central vowel /a/ to /e/ in the Coastal dialects as resulting from a combination of different processes is however not exclusive to Ewe. In Basaa, a Bantu language spoken in Cameroon, Schmidt (1996) reports a

similar raising. Schmidt explains this raising as a result of absolute neutralization. She states that the intermediate [ə] which is taken as the [+ATR] version of [a] merges with [e] where [ə] becomes [e]. In the Inland dialects, the final vowel of the host causes the enclitic vowel to lower from the mid-high level to a mid-low level. The host-final vowel also moves one step from the central-low position to a mid-low position in order to agree with the enclitic vowel in height. This is what we described earlier as double movement.

## CONCLUSION

The paper has shown that in cliticization in Ewe, the final vowel of the host word and the enclitic vowel must agree in height. This feature agreement phenomenon is neither a vowel height harmony process since the process does not involve two sets of vowels nor a metaphonic process since the trigger vowel in the process is not limited to affixes. The feature agreement process highlights one clear area of dialectal difference in the phonological systems between the Coastal dialects and the Inland dialects. While the process is triggered by the final vowel of the host in the Inland dialects of Ewe, it is triggered by the enclitic vowel in the Coastal dialects.

Strangely, even though Tɔŋu is geographically closer to Aŋlɔ and Avenɔ than to any of the Inland dialects, the process in Tɔŋu seems to follow the pattern of the Inland dialects rather than that of the Coastal dialects. We found that Tɔŋu seems to share in the phonology of the Inland dialects and should be classified as an inland dialect rather than a coastal dialect, at least in terms of phonology. This position, however, needs further investigation.

Also, it has been established that there are two underlying forms of the enclitic vowel for both the 3rd person singular object pronominal and the diminutive marker in Ewe. /i/ which is generally held as the enclitic vowel for the 3rd person pronominal and the diminutive marker in Ewe is rather the Coastal variety while /e/ is the Inland variety. /i/ and /e/ are therefore dialectal variants but not phonologically conditioned variants as suggested by Amegashie (2011). The central-low vowel /a/ does not undergo the feature agreement process in the Coastal dialects. When the host word ends with /a/, the host-final vowel gets deleted while the enclitic vowel is lowered one step. This is due to the fact that height agreement between /i/ and /a/ would involve moving one of the segments more than one step. However, since it is possible for the enclitic vowel /e/ and the final vowel of the host /a/ to agree in height through double movement, /a/ fully undergoes the process in the Inland dialects.

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