OCP effects: Elision and glide formation in Ewulu

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Abstract

This paper presents some notable aspects of phonological processes occurring at the CV tier which we observe are OCP-motivated. In Ewulu, a Western Igboid dialect spoken in Delta State, it is clearly revealed that the processes of syncope, apocope and glide formation result from the influence of the OCP, an acronym for Obligatory Contour Principle at first proposed by Leben (1973) to account for the fact that in tone languages identical tones cannot be adjacent to each other. Later studies (see McCarthy 1986, Yip 1988) have shown that, aside the OCP's effects on tones, it equally constrains segmental units in such that identical segments cannot be adjacent to each other. In Ewulu, it has been observed that where adjacency of identical phonological units occurs within the word or phonological phrase, the OCP induces the processes of elision and glide formation in order to avoid violation of the OCP. We shall discuss fully these processes by adopting the non-linear framework of the autosegmental theory.

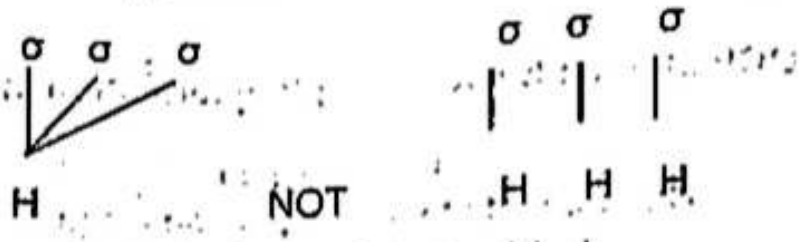
1.0 Introduction

This paper examines the processes of elision (the processes of syncope, apocope) and glide formation occurring within the word/syllable and at the juncture, which our data clearly reveal are governed by the Obligatory Contour Principle (OCP henceforth). The paper gives a vivid description of the mode in which the OCP triggers the reduction of consonant and vowel elements within the syllable and as well change major class features of certain sound segments or else the OCP as a constraint on output would be violated. These issues are presented as follows.

2.0 An overview of the obligatory contour principle (OCP)

The OCP is a principle proposed by Leben (1973) originally to deal with elements of autosegmental melody – tones. The principle absolutely prohibits the occurrence of adjacent identical elements (tones). This means that words/morphemes with successive identical autosegmental melody must accept the first derivation and rule out the second as in (1) below:

(1)



Following the rule in (1), Ewulu words such as, *igirigi*, 'dew' and *ọgɛlɛnya* 'affluence,' must be represented as spans of H and L over several syllables rather than successive Hs and Ls, as shown in (1, column 2). Derivations such as (2) apply in order to avoid adjacency of Hs or Ls, which obviously violate the OCP thus:

(2)



It is interesting to note that later works (see McCarthy 1986 and Yip 1988) have shown that the OCP covers more than tone to embrace hierarchy of larger prosodic categories. Thus how and why the OCP triggers elision process and induces glide formation process in Ewulu is treated in the following sections.

3.0 A note on Ewulu syllable structure

In order to account for how the OCP influences the elision process of syncope, apocope, and glide formation within the syllable and word/morpheme junctures in Ewulu, we would need to present the syllable types attested in the dialect in order to understand its workings on Ewulu segmental phonology. They are presented below:

(3)

Type 1	v	e.g.	í/ị; ó/ọ	'you/s/he'
Type 2	cv	e.g.	tá	'chew'
Type 3	N	e.g.	mbà	'no'
Type 4	vcv	e.g.	ónú	'neck'
Type 5	vcvcv	e.g.	òlúlú	'cotton'
Type 6	vcvcvcv	e.g	àgbàgìdì	'obesity'

Like the standard variety (cf. Clark 1990), Ewulu operates basically three syllable types as shown in Types1 to 3. Types 4 and 5 are predominantly nouns (or verbs) and occur via the process of affixation; the initial V in nouns is characteristically empty semantically with no existing contrastive vowel length. Clearly, what appears to be a CVV syllable structure in Ewulu (cf. section 3.1.3) is simply a sequence of C plus a semivowel and a V at the phonetic level. In the dialect, extensive compounding/reduplication and affixation can create long polysyllabic nouns and verbs as shown in Type 6 and are common with ideophones, a regular pattern well attested in Kwa/West Benue Congo group of languages (Welmers 1973).

3.1 The OCP effects on Ewulu phonological segments

OCP violations, as they affect the CV-tier and Quantity-tier, can be avoided by operating three strategies in Ewulu:

i. Deletion of identical c-elements within a vcvcv syllable structure
ii. Deletion of identical v-elements at word/morpheme boundary in associative construction
iii. Changing of major class features of vowels into glide

All of these are discussed in the following sections.

3.1.1 OCP-triggered c-element deletion

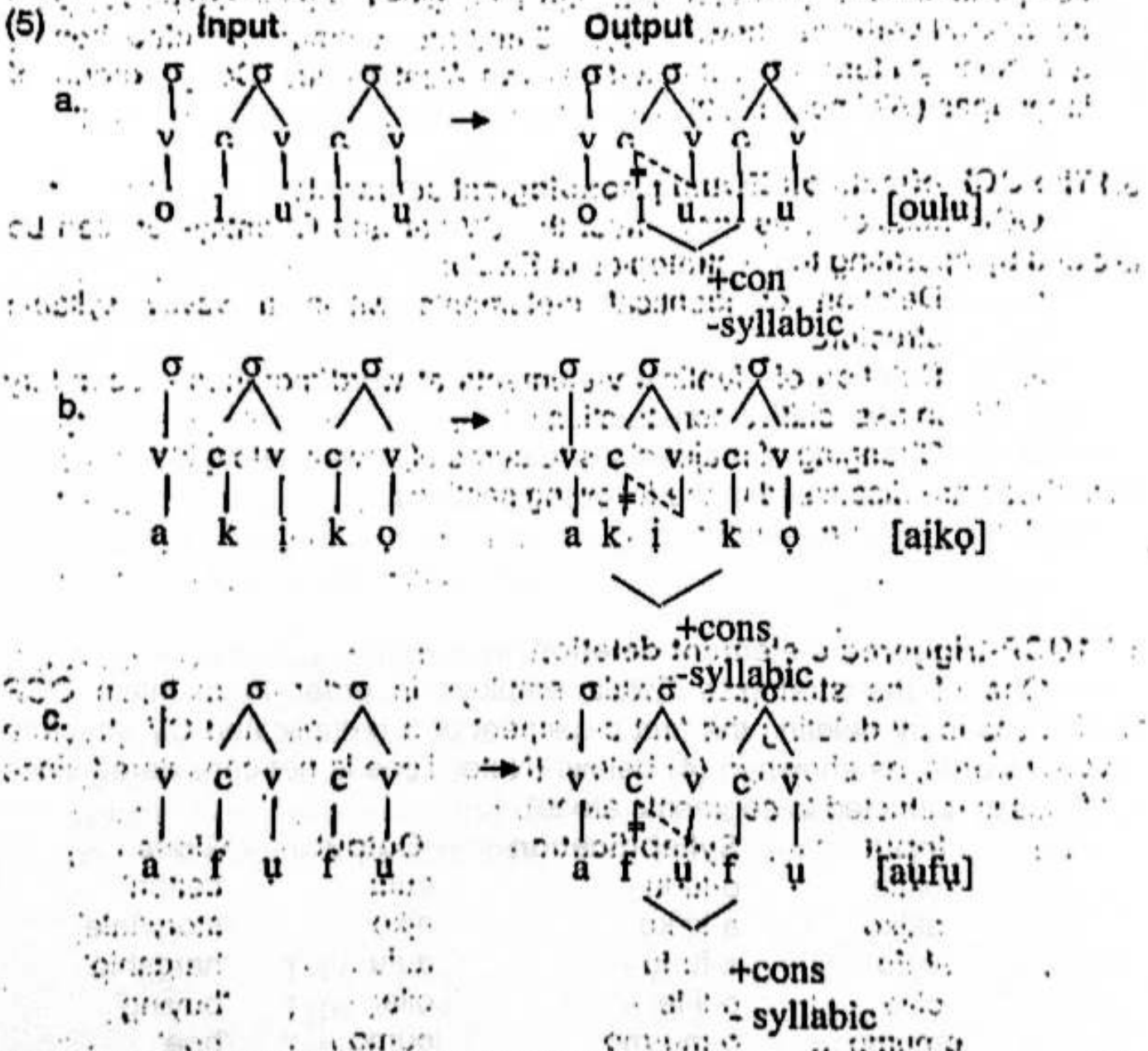
One of the strategies Ewulu employs in order to maintain OCP faithfulness is by deleting the first c-element of a reduplicated CV structure in vcvcv words, as shown in (4) below: (Note: Tone is not considered since our focus is restricted to segments alone).

(4)	Input	Syllabification	Output	Gloss
	olulu	o-lu-lu	oulu	'cotton'
	akịkọ	a-kị-kọ	aịkọ	'story/tale'
	afụfụ	a-fụ-fụ	aụfụ	'hardship'
	olile	o-li-le	oile	'buying'
	omumo	o-mu-mo	oumo	'hoe'

The examples in (4) column 3, show a clear case of c-deletion process known as syncope, (Schane 1973:57). Syncope in Ewulu occurs if the deleting c-element at the CV-tier is identical with that of the third syllable (see column 2), apparently to avoid the '*clash*' of adjacent identical c-

elements in faithfulness to the OCP. Interestingly, the examples in (4), column 3 establish the fact that the OCP covers more than tone, and is best viewed as a constraint on outputs (Yip 2002). Given this representations in (4), we can have a clearer picture of the process of syncope if we adopt the Branching Hierarchical Syllable Structure espoused by Clements and Keyser (1983) by taking into consideration the first three examples in (4) and illustrated in (5) below:

(5)

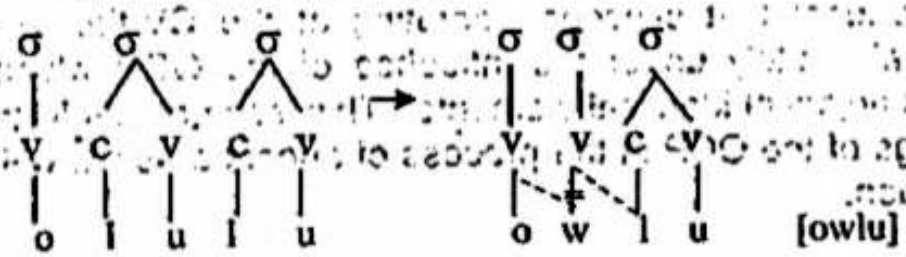


The delinking of the association line between the cv-tier and the segmental-tier with two horizontal lines through it, as shown in (5a-c), suggests that the segment immediately dominated by the C is inactive in the output, having been deleted by the OCP.

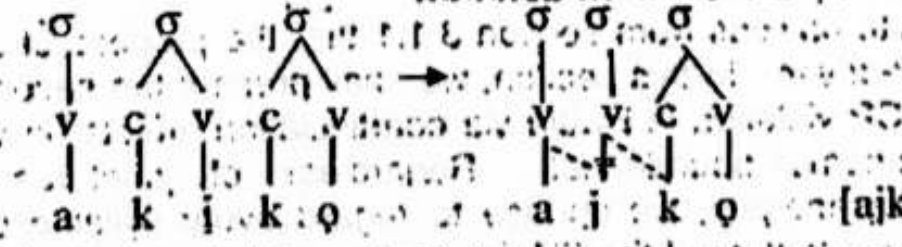
But the deletion of the first C somehow appears to cause further clash in the output as it creates adjacency of identical v-elements, as captured by the SPE features. Ewulu operates two strategies in order to avoid such clash in obedience to the OCP, as suggested by McCarthy and Yip: first, the OCP will have to block changes in the input (cf. McCarthy 1986), in such that the [VVCV] syllable structure, resulting from the application of syncope, will have to preserve its abstract /VCVCV/form, (see (4) column 1). Second, the OCP will have to force changes in the output (cf. Yip 1988). Ewulu applies the second option by converting major class features of one of the two identical v-elements, precisely the second v-element to a glide (see particularly section 3.1.3). By employing either of these options, the imminent clash of two identical elements is avoided (a phenomenon which has been labelled *'clash avoidance'* in the literature, see (Carr, 1993)) in faithfulness to the OCP. This constraint is captured vividly by appealing to the autosegmental paradigm in (6):

By the process of glide formation

(6) a.



b.



Given the representations in (6a and b, see also forms in 10), it is obvious that the process of syncope (see also the process of glide formation which is treated in more detail in section 3.1.3) occurs in order to avoid OCP violation. Furthermore, it is clear that deletion process helps to preserve the Ewulu preferred (V) CV syllable structure underlyingly, as can be seen by two horizontal lines (see 6, column 2) which de-link one of the v-elements. In this way a syllable structure with successive V-elements like the VVCV exemplified in (4) column 3 is obviated.

To throw more light on the OCP-driven deletion process, consider examples in (7) whose syllable structure conforms with the forms in (4) but

which we wish to assert very strongly here are obviously ungoverned by the OCP:

(7)	a.	ajụlụ	>	a-jụ-lụ	> *aụlụ	'calmness'
	b.	ɛgbụlụ	>	ɛ-gbụ-lụ	> *ɛụlụ	'odour'
	c.	ozịrị	>	o-zị-rị	> *oịrị	'road'
	d.	akịtị	>	a-kị-tị	> *aịtị	'cheek'

Observe examples (7) column 2) and note that the V-CV-CV sequence of which the items are composed is not an instance of *identical* CV structure like those elucidated in (5), as each of their c-onset is articulatorily asymmetrical. Quite clearly, the OCP naturally does and will not apply to trigger deletion process as in (4) column 3, because the first c-onset is *not identical* with the second one. The OCP only constrains *partially* or *fully* reduplicated adjoining CV structures whose c-elements are one and the same. The fact of this view is laid bare if we hypothesised by attempting to force deletion process on the first c-element as in (7) so as to conform with the regular pattern in (4)/(5). If we did so, the resultant effect would be to generate anomalous forms like those in (7) column 3. This scenario thus suffices to suggest that syncope operating at the CV-tier in the Ewulu examples is absolutely under the influence of the OCP which disallows occurrence of adjacent identical elements. This issue raises further probing of the workings of the OCP in the process of apocope as we will see in the following section.

3.1.2 OCP-triggered V-element deletion

It is quite obvious from section 3.1.1 that the process of syncope in Ewulu is OCP-driven. In this section, we shall present the second strategy in avoiding OCP violation in Ewulu via coarticulation effects on v-elements at word/morpheme boundaries. Regardless of junctures, and for convenience of analysis, we choose to regard every syllabic element at word fringes as a feature of the CV-tier, since syllables are coextensive with the word/morpheme, and constitute domain for phonological rules (cf. Katamba 1989:153).

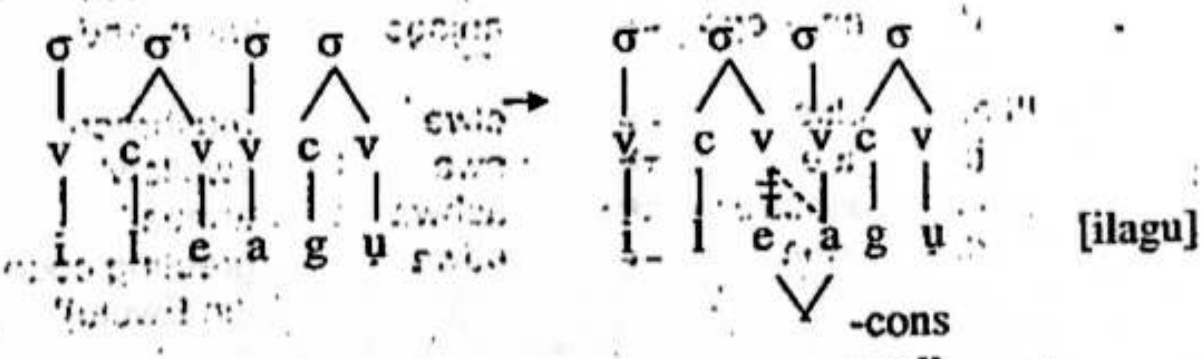
In Ewulu, when two syllable nuclei (or v-elements, to be precise) occur in either sides of the juncture, which apparently creates adjacency in the output, one of the v-elements, notably the second vowel (V2 henceforth) of the first word gets elided. Like the process of syncope discussed above, apocope, i.e., the loss of *final* v-element before the juncture occurs in order to avoid adjacency of identical v-elements which share the features [-cons], [+syll] in obedience to the OCP. Consider the

following associative construction in (8) showing the exclusion of V2 in the output in order to avoid a clash with the V1 of the following word in fast speech, a widespread phenomenon in a natural language:

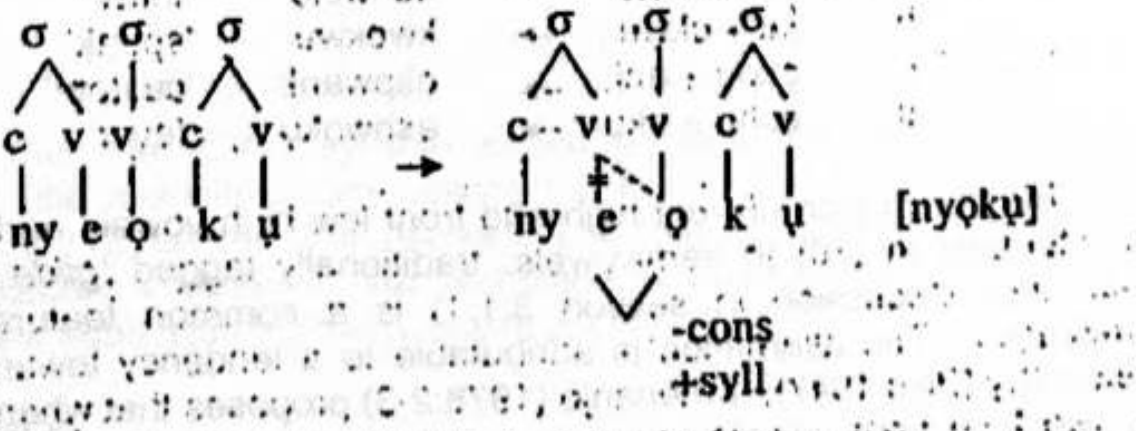
(8)	Input		Output
	ɛkpa + iji	→	ɛkpiji
	'bag' ' yam'		'yam bag'
	ile + agụ	→	ilagụ
	'tongue' 'lion'		'lion tongue'
	gba + egbe	→	gbegbe
	'shoot' 'gun'		'shoot gun'
	nye + ọkụ	→	nyọkụ
	'give' 'light'		'give light'

For explicitness of analysis, we can now interpret the process of loss of word final segment, that is, apocope, using a three-tiered structure like the ones in (5) and (6) and presented in (9) as follows:

(9) a.



b.



Apocope is clearly stated as we can see by the termination of an association line with two horizontal lines through it. Again, like the rule of syncope, the v-deletion process shown in (8) and (9) is strategically done to

avoid adjacency of two syllabic (vocalic) elements in Ewulu, which forces a change in the output that obviously would have violated the OCP.

3.1.3 OCP-motivated change of vowels major class features

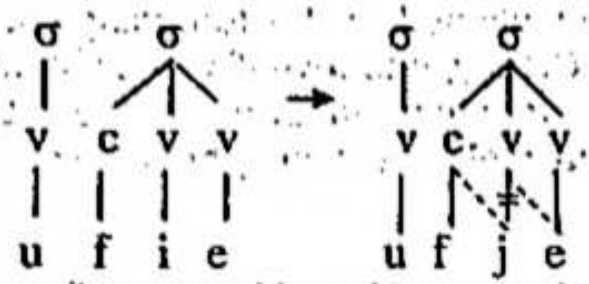
In Ewulu, vowels i or į and u or ụ, subject to the rule of vowel harmony (cf. Utulu, 1992), if immediately followed by a vowel have the tendency to change major class membership by converting to glide -j- and -w- respectively. Consider the following examples in (10):

(10)		Input		Output	Gloss
I.	a.	ufie	→	ufje	'red'
	b.	dibie	→	dibje	'doctor' (native)
	c.	fịa	→	fja	'flog'
	d.	ọpia	→	ọpja	'machete'
II.	a.	isi + ewu	→	Isjewu	'goat head'
	b.	ozi + ọma	→	ozjọma	'good tiding'
	c.	ntị + anụ	→	ntjanụ	'animal ear'
	d.	ani + ogo	→	anjogo	'farm land'
III.	a.	elue	→	elwe	'mushroom'
	b.	nue	→	nwe	'swallow'
	c.	ashụa	→	ashwa	'annual'
	d.	ọdua	→	ọdwa	'greeting code (in Ewulu)'
IV.	a.	oshu + ɛtọ	→	oshwɛtọ	'thirty'
	b.	kụ + okwu	→	kwokwu	'speak'
	c	ọkpụ + anị	→	ọkpwanị	'custom'
	d.	eshu + ọkụ	→	eshwọkụ	'fever'

The conversion of front high and front low high vowels and their back counterparts in (10) to semivowels, traditionally tagged '*glide formation,*' (see also discussion in section 3.1.1) is a common feature in many languages. The alternation is attributable to a tendency toward phonetic symmetry (Pike 1947). Emenanjo (1978:2-3) proposes that when sequence of two high front vowels occur in a syllable or word, the initial vowel is palatalized as shown in (10) I and II above. But if the vowels in question are high back, the initial vowel is labialized as shown in (10) III and IV above. This position further strengthens Leben's claims for OCP. In this way a

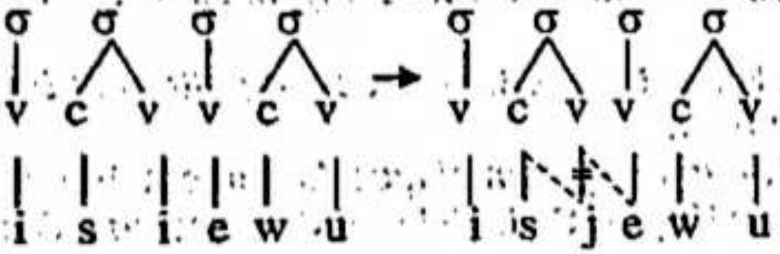
syllable structure such as the CVV or CCV is ruled out. A solution such as this helps us in predicting accurately the fact that Ewulu as a rule does not operate contrastive vowel length and C-cluster. Using an autosegmental approach similar to those in (5) and (9), the examples in (10) can be explicitly projected in (11) thus:

(11) a.



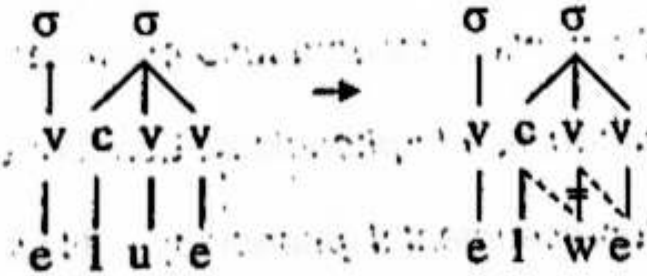
'red'

b.



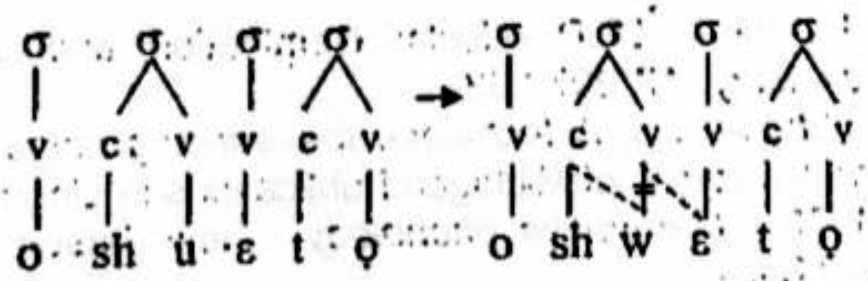
'goat head'

c.



'mushroom'

d.



'thirty'

To ensure that the [CVV] syllable structure does not apply in Ewulu underlyingly, the association line uniting the first of the double vowels as can be seen in (12) column 2 is delinked. Logically, this procedure ensures that two adjacent v-elements are prohibited in faithfulness to the OCP, contrary to the submission of the principle in (11).

4.0 Conclusion

So far in the three general cases discussed in the foregoing, we have seen that the processes of syncope, apocope and glide formation occur in Ewulu in order to maintain *clash avoidance* in obedience to the OCP which

prohibits adjacency of identical phonological units within the syllable and grammatical boundaries. We have seen how identical c-elements and v-elements within the CV-tier are simplified or modified, the quantity of c-elements and v-elements at the CV-tier reduced and one of two sequences of v-elements changed in major class features. All of these OCP-driven phonological rules, as we mentioned in the foregoing, occur in order to produce OCP faithfulness. Clearly, one revealing insight about the case of syncope, apocope and glide formation in Ewulu is the fact that the OCP covers not only autosegmental melodies (tones) but also segmental units.

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