

GLIDE FORMATION AND VOWEL ELISION PROCESSES IN IVIE (NORTH IBIE)

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This paper examines Glide formation and vowel elision processes in verb plus noun derivations, noun plus noun and some other types of constructions in Ivie¹. Glide formation and vowel elision are different phonological processes with respect to their domain and direction of application. But glide formation and vowel elision can also be seen as complementary processes in Ivie in that in most cases vowel elision takes place in constructions where glide formation fails to apply and vice-versa. This paper also shows that both processes are phonologically (by vowel quality) and syntactically (type of construction) conditioned.

Cet article examine les processus d'élision vocalique et de la formation des glides dans des syntagmes dérivés tels que verbe + substantif, substantif + substantif. La formation des glides et l'élision vocalique sont deux processus phonologiques différents par rapport à leur domaine et leur direction d'application. Par ailleurs, la formation des glides et l'élision vocalique pourraient être considérés comme deux phénomènes complémentaires en Ivie en ce sens que l'élision vocalique a lieu dans des constructions où le processus de formation des glides ne peut pas s'appliquer et vice-versa. Il est aussi démontré dans cet exposé que les deux processus sont phonologiquement (selon la qualité intrinsèque de la voyelle) et syntaxiquement (selon le type de construction) conditionnés.

0. INTRODUCTION

Westermann and Bryan (1970:88) classify 'Ibie-Okpekpe' within the Kukuruku dialect cluster of the Kwa group. In Greenberg's (1963) classification of the languages of Africa, Edoid languages (of which Ivie is one) belong to the Kwa branch of Niger-Congo. Bennett and Sterk (1977) classify Edoid as a sub-group of the Eastern Southern Central Niger-Congo (ESCNC). With the Edoid family tree presented in Elugbe (1982), Ivie belongs to North-Central Edoid.

Vowels in Ivie are represented by the following: a, e, e, i, o, o, u². There are no nasal vowels in the language. Our Ivie data, include two additional vowels I and ω. At this point, the phonemic status of these is uncertain (/e/ and /o/ have two phonetic variants [I] and [ω] respectively in specific contexts).

1. CV PHONOLOGICAL THEORY

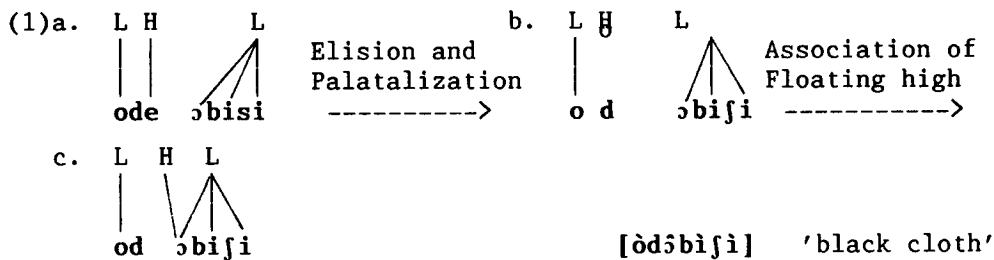
In this analysis, we employ the theory of CV phonology. Since it is an extension of autosegmental phonology, we sketch the relevant aspects of the theory as we understand it. The model

from which this sketch is drawn is that of Clements and Keyser (1983). Modification of the theory depends on our study of the data for Ivie Glide formation and vowel elision.

One of the changes in features since Sound Patterns of English (SPE) involves the prosodic features. Recent developments in phonological theory have added multilinear structure to phonological representations, and as a result certain segmental features are no longer needed. Thus, within the CV framework, the feature [syllabic] is now encoded in hierarchical tree structure built over segments (cf. Clements & Keyser 1983). This change means that it is no longer necessary to define phonetic correlates of a feature syllabic. As a result of this, the feature [syllabic] is relational rather than intrinsic to segments.

Following Williams (1971) and Goldsmith's (1976a) assumptions, autosegments are linked directly to consonants or vowels within the autosegmental framework. It is proposed that there should be a CV skeletal (core) tier (McCarthy, 1979; Halle and Vergnaud, 1980; Pulleyblank, 1983; Clements and Keyser, 1983), from where all autosegmental tiers radiate.

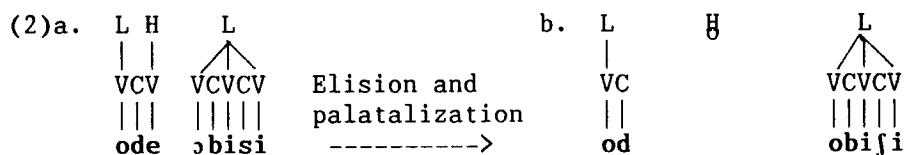
In the standard theory of autosegmental phonology, two tiers were represented, the tonal tier and the segmental tier, and the two tiers were always linked directly. For example, in the following representation,

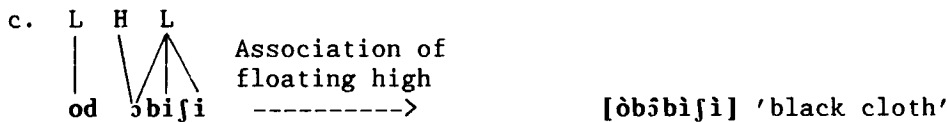


Note that the process of vowel deletion in Ivie has not been properly shown because only two tiers have been used even though the process of tone linking has been shown.

Such representations have been shown to be inadequate. It has been argued for instance that different tiers are indirectly linked through a CV-tier which represents the [-syl] and [+syl] of SPE respectively. Arguments in this direction are stated in detail in Clements and Keyser (1983).

Within this framework, it is possible to show the process of vowel deletion, and tonal relinking clearly.

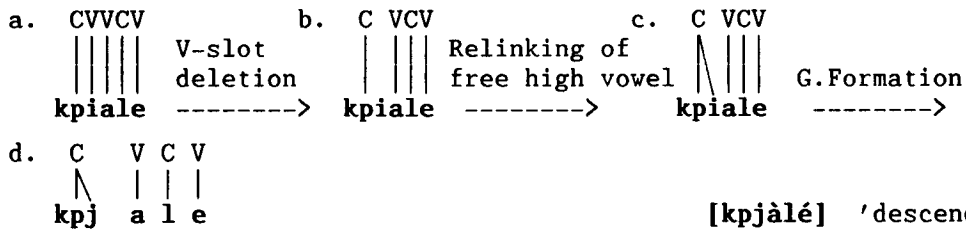




In the deletion process above, both the V-slot and the segment are deleted in Ivie.

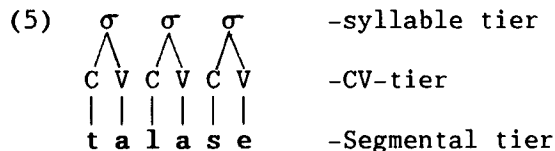
The recognition of a CV tier is also useful in Ivie in the process of glide formation in which vowels become desyllabified. In that case, we regard part of a C-slot of a preceding consonant as spreading onto the following vowel. If, for instance, we have a representation:

(3) /kpiàlé/ [kpjàlé] 'descend'; the derivation can be presented as:



Thus the most basic aspect of CV-theory is that a third tier, called the CV-tier, which mediates between the syllable tier and the segmental tier is introduced in syllable representation. Syllable trees consist of three-tiered representations:

- (4)a. The syllable tier consisting of strings of the root node σ ;
 b. CV-tier comprising of strings of the elements CV.
 c. Segmental tier consisting of single column phonetic matrices characterized by consonants and vowels. Neighbouring tiers are related to other tiers by 'association lines'. Thus, /tálásè/ 'jump over' in Ivie, will be represented as below:



Clements and Keyser (1983) also state that there is need not only to build syllables but also to rebuild them at later points in a derivation, following the operation of such rules as vowel deletion, vowel epenthesis and glide formation.

Operations affecting syllable structure are governed by certain general conventions that apply automatically to the output. Their general effect is to preserve phonological well-formedness throughout derivations. Thus, Clements and Keyser (1983:54) state that:

'phonological rules which apply so as to create ill-formed syllables will generally induce the operation of applicable well-formedness conditions'.

Notable among these conventions is resyllabification by which, (according to Clements and Keyser (1983:54),

- (6) The output of every rule is resyllabified according to the syllable structure rules examined up to that point interpreted in the derivation. This convention is interpreted to mean that all association lines between C-elements and 'σ's, as well as all floating σ's, are erased, and the resulting configuration is resyllabified.

2. GLIDE FORMATION

Glide formation results in a major class change through the process of desyllabification a [+syl] becomes [-syl] in specific contexts. It also leads to syllable reduction. In Ivie, this process involves the vowels /i/, /e/, /o/, /u/. /i/ and /e/ are sometimes realized as [j] (palatal approximant), while the vowels /o/ and /u/ become [w] (labial velar approximant) when preceded by a consonant and followed by a non-identical vowel.

Glide formation in Ivie operates in two specific environments: (i) within words and (ii) at word boundaries.

2.1 GLIDE FORMATION WITHIN WORDS

Within words, glide formation applies to close vowels as the examples in (7) indicate.

- | | | | |
|--------|-------------|-------------|----------------------|
| (7) a. | /mìsèá/ | [mìsjǎ] | 'wring' (of clothes) |
| b. | /dòtsúá/ | [dòtswá] | 'steal' |
| c. | /èkùè/ | [èlwè] | 'shoe' |
| d. | /úlùé/ | [úlwé] | 'snail' |
| e. | /àdógwò/ | [àdógwò] | 'dock' |
| f. | /pfiòlèmhì/ | [pfjòlèmhì] | 'tell lies' |

One notes that when glide formation occurs, the tone on the elided vowel sometimes manifests on the following segment, thus resulting in a contour tone when the two tones are not identical. When the tones are identical, one of them is deleted.

2.2 GLIDE FORMATION ACROSS WORD BOUNDARIES

The glide formation process applies also across word or morpheme boundaries. In this context, its application is determined by the syntactic relationship between the vowels on both sides of the boundary.

2.2.1 Noun + Noun Construction

- | | | |
|-------|-------------|---------------|
| (8)a. | /únù # èná/ | [únwèná] |
| | mouth cow | 'cow's mouth' |

b. /ùkólò # ɔ̀m̀/ [ùkólwɔ̀m̀]
 cup child 'a child's cup'

2.2.2 Verb + Noun

- (9)a. /tò # óxè/ [twóxè]
 tell story 'tell a story'
- b. /dò # òdé/ [dwòdé]
 weave cloth 'weave cloth'
- c. /pfi # ákpèkpè/ [pfjákpèkpè]
 blow wind 'blow wind'
- d. /dzièlé # àpfè/ [dzèl jápfè]
 return home 'return home'
- e. /únù # úlùé/ [únúlwe]
 mouth snail 'snail's mouth'
- f. /r̀kálí # ítà/ [r̀kálítà]
 follow father 'follow father'

In (9), one observes that in the case of /i/ and /u/, there is a deletion if the following vowel is identical with the preceding one. But in the case of /o/, elision does not operate because the two o's are not of the same vowel quality. The o's in /tò/ 'tell' and /dò/ 'weave', are higher than those in /óxè/ and /òdé/ as such do not delete. /i, u, e [ɪ], o [ə]/ are weak vowels while /e, o, ɛ, ɔ, a/ are strong vowels. Thus, in Ivie, vowel quality prevents the application of vowel elision by conditioning the formation of glides by the weak vowels i, u, ɪ, ə when they occur as V₁ and followed by a V₂ which is higher than they are in the strength hierarchy.

Thus:

Rule (1) $\begin{bmatrix} \text{I} \\ \text{u} \\ \text{i} \\ \text{o} \end{bmatrix} \rightarrow \text{G} / \text{C-} \# \text{V}_2$

Condition $\text{V}_2 > \text{V}_1$

V₁ - last vowel of the stem

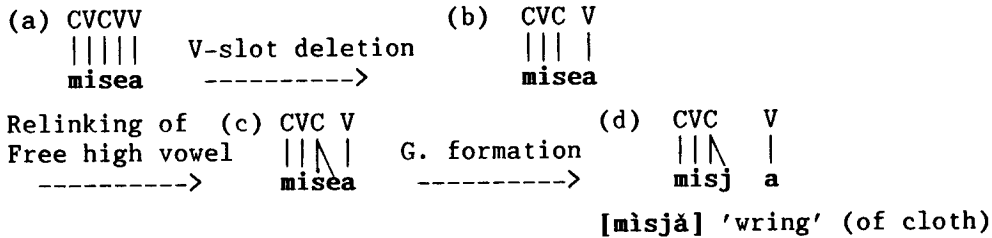
V₂ - first vowel of the stem

Note that glide formation has taken place because that V₁ before the boundary is a close vowel whereas V₂ after the boundary is an open vowel.

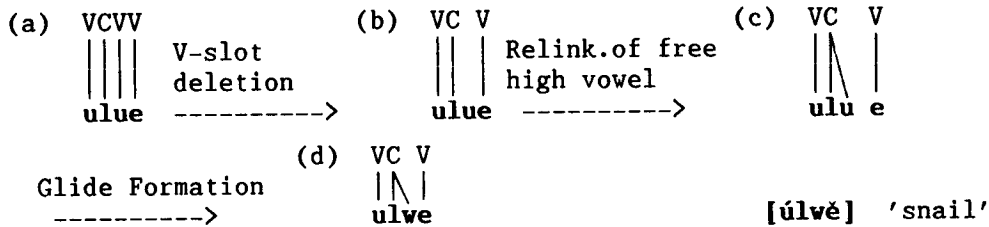
Sample derivations.

9(a) and 9(d) are derived as (10) and (11) while 8(a) and 9(b) are derived as (12) and (13) respectively.

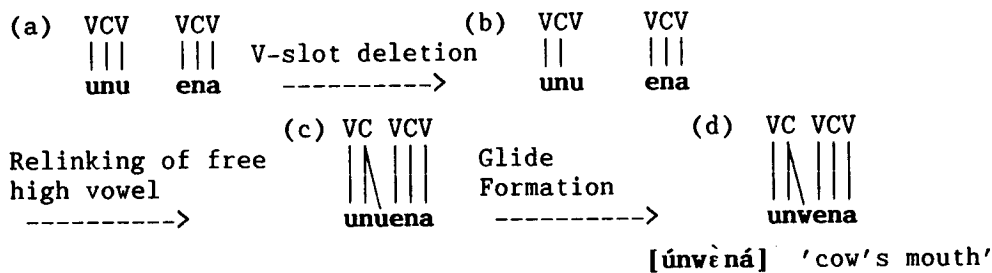
(10) [misjǎ] 'wring' (of cloth).



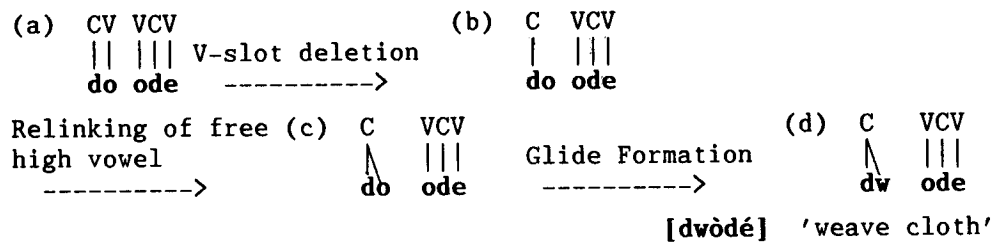
(11) [úlǔ] 'snail'



(12) [únwǎná] 'cow's mouth'.



(13) [dwòdé] 'weave cloth'



2.2.3 Possessive Construction

- (14)a. /òdé + è/
 cloth your(sing) [òdjɛ̃]
 'your cloth'
- b. /àwùlú + ðlì/
 shirt his [àwùlwóli]
 'his shirt'
- c. /ùkólò + éjɛ̃/
 cup our [ùkólvéjɛ̃]
 'our cup'

Unlike vowel deletion which applies only across morpheme or word boundaries, the examples in (9) and (10) show the contrary for the glide formation process in Ivie.

There are instances, however, in our data where the non-high vowels /o/ and /e/ behave like high vowels by becoming glides as in (8)b, (9)a, b, d and (14)a and c. These may be exceptional cases since there are counter examples which show that when /o/ and /e/ occur in a V₁ position in a CV₁ # V₂CV sequence, they normally get elided as in (15). This can, however, easily be explained by stating that when vowels within the same strength hierarchy co-occur across word boundary, deletion instead of glide formation takes place.

- (15)a. /gbè # óuè/ [gbóuè]
 kill monkey 'kill a monkey'
- b. /ùuèlè # ítà/ [úuélítà]
 calabash ASM father 'father's calabash'
- c. /nònò # ìmò [nónómò]
 look child 'look for a child' or
 'desire a child'
- d. /̀̀kpòtsò # ìbè/ [̀̀kpòts̀̀bè]
 woman bad 'bad woman'

The glide formation rule proposed for Ivie is:

Rule 2. Glide Formation

$$V \begin{bmatrix} i \\ u \\ e \\ o \end{bmatrix} \rightarrow G/C- \# V_2$$

+

This rule states that a high vowel becomes a glide when it occurs between a consonant and a vowel either within words or across word boundaries.

2.3 CONSTRAINTS ON GLIDE FORMATION

There are however constraints on the operation of this process in Ivie. The glide formation process may be blocked despite the fact that the structural description is met. Five different types of constructions are involved in this constraint - and they are: the definite Article (DA); Relative (REL); Locative (LM); identification (IM) and focus (FM) constructions.

2.3.1 Definite Article Construction

- (16)a. /ònì + àtásà/ [ònàtásà]
 DA plate 'the plate'
- b. /̀̀nì + ̀̀x̀̀x̀̀/ [̀̀ǹ̀x̀̀x̀̀]
 DA fowl 'the fowl'

2.3 Relative Construction

- (17)a. /áfè + nì + ì + gbà/ [áfè̀̀ǹ̀gbà]
 fish REL SCM be-big 'fish that is big'/'big fish'

- b. /èkúé + nì + ò ti/ [ikwé nòtì]
shoe REL SCM be-good 'shoe that is good'/'a good shoe'
- c. /ómò + nì + ò + à + tì/ [ómòmòàtì]
child REL SCM NM be-good 'child that is bad'/'bad child'

Note that vowel deletion does not take place between the subject concord marker (SCM) and the negative marker (NM) since syntactic information is taken into consideration. Therefore, if deletion takes place, the intended output will not be arrived at. We shall have [ómòmòtì] which means 'a good child'.

2.3.3 Identification Construction

- (13)a. /àkpá + xì + ònà/ [àkpáxònà]
kite IM this 'This is a kite'
- b. /àwùlú + xì + ònà/ [àwùlúxònà]
shirt IM this 'This is a shirt'
- c. /èkè + xì + ònà/ [èlèxònà]
egg IM this 'This is an egg'

2.3.4 Focus Construction

- (14)a. /ébè + lì + ò + dè [ébè lǒdè]
book FM SCM buy 'It is a book he bought'
- b. /éni + lì + ò + gbé/ [énilǒgbé]
elephant FM SCM kill+past 'It is an elephant they killed'

2.3.5 Locative Construction

- (15)a. /òdè + nì + ò + lì + àpfè/ [òdénòlàpfè]
cloth REL SCM LM home 'cloth at home'
- b. /ìlòmú + nì + è + lì + òki/ [ìlòménèlòki]
oranges REL SCM LM market 'oranges at the market'

In the above constructions, although the necessary conditions for glide formation are met, the high vowels in each of the examples given do not form glides, instead they are deleted. If the GF rule were to apply and the high vowels were to become glides, unacceptable forms in the language would emerge. Where glide formation would be expected for these roots, deletion occurs instead.

Since the process of glide formation only applies in a N+N, Verb-N or possessive or N+Numeral constructions we find that this process will be blocked in constructions which are neither of the above. What takes place instead is vowel elision.

In 2.3.1 (example 16), glide formation fails to take place because the noun is preceded by a qualifier (ònì) which is not a noun. In the other examples, we can explain the non-application of this process by stating that in a sequence $V_1 \# V_2$, where V_2 is a concord prefix, glide formation is blocked.

Where a close vowel precedes a concord prefix at a boundary, the close vowel is elided. This supports our earlier claim that GF (Glide Formation) depends on syntactic relation in the NP (Noun Phrase). It is non-existent where there is a concordial prefix after the boundary. Thus, GF can be said to be both phonologically (vowel quality) and syntactically (type of construction) conditioned in Ivie.

Note also that most of these items (in which GF fails to apply) are closed system items. Thus, we can also state that when items which belong to the same 'closed-system' items are in juxtaposition or before a noun, deletion instead of glide formation applies.

3. VOWEL ELISION

Full vowel elision is typical of some types of phrases in Ivie: Nouns regularly begin with vowels and all words in the language end with vowels. In a sequence of verb plus noun object, or in a Noun-Noun phrase, the final vowel of the first word is, under many circumstances, totally deleted. Thus the sequence of /dɛ/ 'buy' plus /òdédé/ 'cloth' is actualised as [dòdédé] 'buy cloth'.

Final /i/ or /u/ is not normally elided before a vowel different from itself, though a few exceptions can be found in Ivie.

Sometimes final /o/ becomes /ɔ/, and final /e/ becomes /I/ before another V₂ and thus do not elide. Examples:

(21)	/ùkólò # ɔ̀m̀/	[ùkólwɔ̀m̀]
	cup child	'a child's cup'
	/dò # òdédé/	[dwòdédé]
	weave cloth	'weave cloth'.

However, there is regular elision of /o/ and /e/. There are other details not included in the above statements, but in the vast majority of Ivie utterances containing transitive verbs, the final vowel of the verb simply does not appear. One might wonder what the final vowel of a given verb actually is. The solution is found in an emphatic or topicalized construction, in which the object is transposed to the beginning of the sentence-final position. Only in such circumstances do the final vowels of many verbs appear. Thus, elision in Ivie can be seen as confined to a few common morphemes. And it operates throughout the grammar of the language.

In some other languages like Yoruba, there has been extensive discussion of vowel deletion, and different views are postulated by different linguists. Bamgboṣe (1965) suggests phonological rules to account for this process (referred to as vowel contraction). Awobuluyi (cf. Akinlabi 1986) pointed out some weaknesses in this solution and proposed that the process of vowel deletion might be morphologically conditioned.

Contraction results in the shortening of words or phrases by the elision of some segments from the words or phrases concerned. Consider the following examples from Awobuluyi (1982:54).

(17)	àtí òjó	àtòjó	'and Ojo'
	rí éja	réja	'see fish'
	lá epo	lápo	'lick fish'
	té ewé	téwé	'spread leaves'

Note that the behaviour of vowels under construction in these examples is irregular. One notes that the first two words involve elision of the second vowel of the first word, while the last two involve the elision of the initial vowel of the second word in the collocation. This raises the question of predictability for the contraction process. Elimelech (1976) also referred to vowel elision in a related language (Yekhee) as 'Vowel Contraction'.

In handling this process in Ivie, we propose that vowel deletion is morphologically and phonologically conditioned. This means that the phonological nature of vowels in contact, as well as the lexical items to which they may belong, help to determine which vowels to be deleted.

In certain well defined environments, it is the first of two vowels in a vowel sequence that is deleted in word or morpheme final positions. Examples:

(23)a.	/ésò # èná/	[ésèná]	'cow's ear'
	ear cow		
b.	/ékpà # éjè/	[ékpéjè]	'our bag'
	bag our		
c.	/mò # ùgùà/	[mùgwà]	'take bone'
	take bone		
d.	/ébè # úkòkó/	[é!búkòkó]	'cocoyam leaf'
	leaf cocoyam		

Note that in the cases of elision in (23a-d), the modification or resultant output does not change the meaning of the words. Instead syllable reduction takes place. The corresponding surface realizations of these forms results from the deletion of the last vowel (V₁) of the initial word. Indeed, the deletion of vowels in the formation of words is a very important feature in Ivie.

Though there are various syntactic contexts that can motivate elision in Ivie, only a few are used to illustrate this process. Example:

(24)a.	/dè + òdé/	[dòdé]				
	<table border="0" style="margin-left: 20px;"> <tr> <td> </td> <td> </td> </tr> <tr> <td>V₁</td> <td>V₂</td> </tr> </table>			V ₁	V ₂	'buy cloth'.
V ₁	V ₂					

3.1 VERB + NOUN CONSTRUCTION

When a verb precedes a nominal object, the first or last vowel of the verb is often dropped to accommodate the prefix of the nominal item as exemplified below:

- (25)a. /dà # óníò/ [dópò] 'drink wine'
 drink wine
 b. /dè # òyèdè/ [dòyèdè] 'buy banana'
 buy banana
 c. /sièlè órè/ [ʃèlórè] 'climb tree'
 climb tree
 d. /ò + zé + ò/ [ʒzò] 'he read it'
 he read(past) it
 e. /óniò + lì + ò + dá/ [ónòlòdá] 'It is wine he drank'.
 wine FM SCM drink(past)
 f. /ò + dé + òyèdè/ [òdòyèdè] 'He bought banana'.
 he buy(past) banana
 g. /òyèdè + lì + ò + dé [òyèdèlòdé] 'It is banana he bought.'
 banana PM SCM buy(past)

In the above examples, the underlying forms of some of the transitive verbs appear distinctively in 25(e) and (g) since they do not directly precede the nouns. But the V_1 of the verbs are deleted when they directly precede a clitic as in 25(d) and a noun as in 25(a), (b), (c) and (f). Finally, in 25(e) and (g), V_1 of the focus marker 'li' is deleted before the clitic (or subject marker).

Another category of constructions is shown in (26), (27) and (28). The derivation of some plural nouns in (26) involves a simple reduplication of the singular form and subsequent elision of the first of two contiguous vowels across the word boundary.

- (26)a. /íkpágò/ 'money' /íkpágò # íkpágò/ [íkpágíkpágò] 'money' (pl.)
 b. /órè/ 'tree' /órè # órè/ [órórè] 'trees'
 c. /átsiè/ 'pepper' /átsiè # átsiè [átʃátʃátʃè] 'pepper/too much pepper'
 # atsie/

Numeral adverbs are also derived by vowel elision as in the examples below:

- (27)a. /èvá/ 'two' /èvá+èvá+èvá/ [èvévévè] 'in two's'
 b. /úkpè/ 'year' /úkpè+úkpè+úkpè/ [úkpúkpúkpè] 'yearly'

This and many other like processes constitute independent motivation for vowel elision in Ivie. Consonant deletion also prompts vowel elision as exemplified below:

- (28)a. /i + mà + jésè/ [iměsɛo`]
 I NM know 'I do not know'
 b. /ù + uà + jésè [ùuěsè]
 you NM know 'You do not know'

3.2 NOUN + NOUN CONSTRUCTION

- (29)a. /ókò # órè/ [ókórè]
 vehicle wood 'boat'
 b. /ixòmhi # iguà/ [ixòmhiɡwà]
 head bones 'knees'
 c. /àmè # éniè/ [áménè]
 water breast 'breast milk'

3.3 NOUN + ADJECTIVE (Adjectival Construction)

- (30)a. /àpfè # óuisè/ [ápfoúsè]
 home another 'another home'
 b. /òdé # òbòsò/ [òdòbìʃi]
 cloth black 'a black cloth'
 c. /èkúé # òlilè/ [èkwólilè]
 shoe red 'a red shoe'

3.4 NOUN + NUMERAL

- (31)a. /ómòsè # ògùò/ [ómòsógwò]
 man one 'one man'
 b. /émòsè # àvá/ [émòsává]
 men two 'two men'
 c. /ìkpòtsò # àné/ [ìkpòtsánè]
 women four 'four women'

Given the verbs, nouns, Adjectives and numerals in their citation forms, the corresponding derivations result from the elision of the last vowel of the verb in 3.1, and that of the nouns in 3.2 - 3.4. This process can be stated by a vowel deletion rule.

RI (3) V --> Ø / - V

(A vowel in word final position is deleted when the next word begins with a vowel).

Thus, to account for some of the forms in (25) - (31) the following derivations are proposed: 25(b) is derived as (32) while 29(a) and 31(b) are derived as (33) and (34) respectively.

(32) [dòɣèdè] 'buy banana'

a) C V V C V C V	b) C V C V C V	c) C V C V C V
d ε ɔ ɣ ε d ε	d ɔ ɣ ε d ε	d ɔ ɣ ε d ε
----->	----->	----->
Elision	Resyll.	
[dòɣèdè] 'buy banana'		

- b. /Óti -ǝ- dé òlòmú/ [Ótiǝdólòmú]
 A name SCM buy+Past orange 'Oti bought an orange'

In these two examples, vowel elision does not occur between the head noun and the subject concord marker in b.; nor between the pronoun and the tense marker a in a. Note that the subject marker and the aspectual marker force exceptions to vowel elision.

Let us see what happens if elision does take place.

- (42)a. /ǝ+á+zè+óbè/ [ǝzóbè] OR [ázóbè]
 b. /Oti+ǝ+dé+ òlòmú/ [Ótǝdólòmú]
 OR [Ótídólòmú].

Comparing the first two surface forms of (41) with those in (42), we see that ambiguous sequences are created as in (42) where vowel deletion was applied.

To summarize, in Pronoun + Aspectual Marker or Noun + Subject Marker constructions, vowel deletion never applies. Syntactic information is taken into consideration.

Given the CV approach that we are assuming, a possible analysis of the cases which block vowel elision would be that they involve empty C-slots. For example, a prefix like a (Cont. Marker) could be analysed as:

a
 |
 |
 |
 |
 CV

The empty C-slot blocks vowel elision from applying. Alternatively, one might argue that the prefixes that block vowel elision belong to a level of morphology (in the sense of Mohanan, 1986; Kiparsky, 1982) at which vowel elision does not apply.

Thus (41a and b) are derived as in (43) and (42) respectively.

- (43) [ǝázóbè] 'He is reading a book'.

(a) V V C V V C V ǝ a z é o b e ----->	(b) V V C V C V VVCVCV Resyllab. ǝ a z o b e -----> ǝazobe
--	--

[ǝázóbè] 'He is reading a book'.

- (44) [Ótiǝosp'dólòmú] 'Oti bought an orange'

(a) V C V V C V V C V C V Elision 0 t i ǝ d é 0 l o m u ----->	(b) V C V V C V C V C V 0 t i ǝ d 0 l o m u
--	---

Resyllabification ----->

(c) V C V V C V C V C V
 | | | | | | | | | |
 0 t i ɔ d o l o m u
 [Ótìɔ́dólòmú] 'Oti bought an orange'

In some of the examples, one would expect glide formation to take place but instead deletion occurs. (Cf. 3.5). Thus, exceptions to the glide formation rule in Ivie are taken care of by the deletion rule.

It is of interest that /u/ and /o/ rarely participate in the deletion process. /u/ deletes when the next vowel to it (V₂) has the same feature composition as itself. Examples:

- (45)a. /kùkù únù/ [kúkúnù]
 close/shut mouth 'shut up'/'close mouth'
- b. /únù úlùé/ [únúlwé]
 mouth snail 'snail's mouth'

One can also explain the deletion of [u] in these examples by postulating a general rule of vowel elision in Ivie, and then assuming that the vowel that deletes generally also deletes in the case of identical vowels. Hooper (1972:141) says that only minimal or weak vowels participate in deletion rules. He also says that these set of vowels are the ones that usually serve as epenthetic vowels in most insertion rules.

This, of course, is true of /i/, since its frequency in insertion rules is greatest as compared to the other vowels /u/ and /o/. The fact that /u/ and /o/ rarely delete may be ascribed to the added strength both [u, o] receive from the feature of roundness. This feature, makes them stronger than the front vowel /i/ and /e/ respectively - leaving only /i/ in the case of Ivie, as the weakest and thus a natural choice for deletion and insertion rules in the language.

From the above discussion, it is obvious that the presence of a morpheme or word boundary is necessary for elision to take place.

6. CONCLUSION

To conclude, we have been able to show that glide formation and vowel elision processes are both phonologically and syntactically determined in Ivie. While glide formation applies only within morphemes and across morpheme or word boundaries, the presence of a morpheme or word boundary is necessary for the applications of vowel elision in the language.

NOTES

¹Ivie (pronounced Ibvie) is used throughout this paper instead of 'North Ibie'. Ivie is officially referred to as 'North Ibie'.

²In the orthography adopted in this study, the oral vowels *i*, *e*, *ē*, *a*, *ō*, *o*, and *u* approximate respectively to /i/, /e/, /ɛ/, /a/, /ɔ/, /o/, and /u/ in the I.P.A. chart.

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