A Government Phonology Analysis of Assimilation in AnakỤ Igbo Expressions: “Ǹgịvụ” and “Gbaa Egbè”

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https://dx.doi.org/10.4314/ujah.v24i2.7

Abstract

Assimilation, no doubt, is a major co-articulatory feature of human language involving two segments in binary asymmetric relation. In the Igbo language, there are vowel-vowel assimilation, vowel-syllable assimilation, syllabic nasal-consonant assimilation, vowel-consonant assimilation, and consonant-vowel assimilation. Using the Government Phonology framework, this paper analyses assimilation in Anakụ Igbo expressions, ***ǹgịvụ*** ‘you’ and ***gbaa egbè*** ‘shot gun’, which are examples of syllabic nasal-consonant assimilation and vowel-vowel assimilation respectively. The results reveal a relation of government existing between the sounds in the context of assimilation in the two words, whereby one of the sounds is the governor that has charmed the other sound as its governee. It is confirmed that assimilation in Anakụ Igbo variety adheres to the tenets of the Government Phonology.

Keywords: Igbo; phonology; assimilation; government; phonological processes

1. Introduction

Assimilation as a phonological process associated with human language has been discussed a lot. It deals with a situation where one of the sounds at contiguous position influences the other thereby making the sound so influenced to partially or completely copy some or all its features (Schane; Dirven & Verspoor; Eme; Uwaezuoke, a,b). The nature of assimilation varies from language to language. In the Igbo language, for example, there are five kinds of assimilation: vowel-vowel assimilation, vowel-syllable assimilation, syllabic nasal-consonant assimilation (that is, homorganic nasal assimilation), vowel-consonant assimilation, and consonant-vowel assimilation (Uwaezuoke, b).

Most of the past studies on assimilation in the Igbo language use linear phonology framework as basis, whereby rules are generated

and used to explain assimilatory phenomena. However, there are few cases where other theories were applied, including the Government Phonology framework. Most past studies that have used this framework did not show details of how government phonology has accounted for assimilation. Following Kaye et al's view, assimilation involves a contextual relationship existing between phonological elements of language and the natural relationship existing among languages, and it is very well explained with a model of Government Phonology. This paper, therefore, uses the Government Phonology framework to investigate assimilation in the Anakụ Igbo expressions ***ǹgịvụ*** 'you' and ***gbaa egbè*** 'shot gun'. It shows details of how the framework has accounted for a relation of government existing between the sounds in the context of assimilation in the two words. Although the two expression are got from speakers of

Anàkụ̀ Igbo variety, only ***ǹgịvụ*** 'you' is purely dialectal[1] as ***gbaa egbè*** 'shot gun' is a standard Igbo expression that is also spoken in so many varieties of the language.

For the rest of the paper, section two presents a review of related literature on assimilation. In section three is a review of the theoretical framework, while section four discusses the methodology. Data presentation and analysis is handled by section five; and finally, section six is summary and conclusion.

2. Assimilation in Igbo

Eme discusses assimilation as belonging to connected speech features parameter of intersegmental coordination in speech. She identifies complete assimilation, partial assimilation, progressive assimilation, regressive assimilation and coalescent assimilation

[1] *ǹgịvụ* 'you' is Anàkụ̀ variant of the standard Igbo *gịnwà* 'you' (the suffixes *vụ* and *nwà* are for emphasis, otherwise the right word for 'you' in standard Igbo is *gị,* and *ǹgị* in Anàkụ̀).

in Igbo. According to Eme, complete assimilation in Igbo may involve vowel to vowel or consonant to consonant, but vowel to vowel assimilation is more prevalent due to the fact that Igbo is a no coda language (88). She notes that in partial assimilation, the assimilated segment drops part of its phonetic qualities to take up part of the phonetic qualities of the segment that influences it as exemplified with /**m gà**/ → [**ŋ gà**] 'I will'. The bilabial nasal /**m**/ drops its [+labial] feature to take the [+velar] feature of the velar consonant /**g**/ adjacent to it. The scholar discloses that the complete assimilation and partial assimilation in Igbo could be either progressive or regressive in nature, hence, the progressive assimilation and regressive assimilation. Coalescent assimilation is considered by Eme as a case of two adjacent segments influencing each other such that they emerge to be one segment that shares certain phonetic qualities with the parent sounds, e.g.

ọgọ̀ ya [**ɔgì a**] 'his/her in-law', where /**ɔ**/ and /**j**/ coalesce to [**ɪ**] (115-116). Uwaezuoke and Eme corroborate this view in their autosegmental phonology analysis of coalescent assimilation in Igbo.

Emenanjo recognises the existence of complete assimilation, partial assimilation, coalescent assimilation, progressive assimilation and regressive assimilation in Igbo. He also identifies conditional assimilation in the language. Emenanjo notes that complete assimilation, conditional assimilation, and coalescent assimilation are types of vowel assimilation where two dissimilar vowels on either sides of the juncture may become similar in quality in rapid speech not minding the tongue position, tongue root position or size of the pharynx (81-85). The scholar illustrates with examples in (1).

(1) a i. **ùde** + **isi** → **ùdiisī** Complete
'cream' 'head' 'hair cream'
regressive assimilation

ii. **ụlọ̀** + **ubì** → **ụlùubì**
'house' 'farm' 'farm house'

b i. **ǹkè** + **a** → **ǹke è**
'one' 'this' 'this one'

ii. **ụlọ̀** + **a** → **ụlọ̄ ọ̀**
'house' 'this' 'this house'

Complete progressive assimilation

(Emenanjo, 81,84)

Emenanjo notes that in conditional vowel assimilation, where the final vowel of the first word is **u** or **ụ** and the speed of the utterance is rapid, the **u** or **ụ** assimilates to the first vowel of the second word, otherwise, there is no assimilation (23). This is exemplified in (2).

(2) i. **okwu** + **egō** → **okweegō** or **okwuegō**
'talk' 'money' 'talk about money'

ii. **ọnū** + **anụ** → **ọnaanū** or **ọnụanū**
'mouth' 'animal' 'mouth of animal'
(Emenanjo, 23)

Maduagwu in her study of assimilation in Oghè dialect of Igbo also identifies complete assimilation, partial assimilation, progressive assimilation and regressive assimilation in Igbo. In (3) are some examples of assimilation from her.

(3) a i. /**ɔ** **wụ̀** / → [**ɔ ɔ**]
it be 'it is'
ii. /**ɔ↓nʊ́**/ + /**ìtè** / → [**ɔni ìtè**]
mouth pot 'mouth of pot'
b. i. /**ozu**/ [**ozu**] 'copse'
ii. /**ị̀tọ**/ [**ìtɔ**] 'three' (Vowel Harmony)
iii. /**Nvɔ**/ → [**mvɔ**] 'nail (finger or toe)'
iv. /**ɔ↓nʊ́**/ → [**ɔ↓nʊ̋**] 'mouth' (Nasalization)

Examples (3a i&ii) show complete assimilation. In example (3a i) is a complete progressive vowel–syllable assimilation and example (3a ii) shows complete regressive vowel–vowel assimilation. In (3bi,ii&iii) are instances of partial assimilation. However, while (3bi) is an example of partial (vowel harmony) assimilation, (3bii) is partial (homorganic) assimilation and (3biii)

exhibits vowel harmony (also complete assimilation) and nasalisation.

Uwaezuoke reanalyses assimilation in Igbo using distinctive feature approach, and suggests regarding these names: complete assimilation, partial assimilation, progressive assimilation, regressive assimilation, conditional assimilation and coalescent assimilation earlier used for the types of assimilation, plus nasalisation and vowel harmony as rather features of the types of assimilation (112). He identifies vowel-vowel, vowel–syllable, consonant–syllabic nasal, consonant–vowel, and vowel–consonant as the types of assimilation in Igbo (103). This is supported by Oyebade.[2] The features of the types of assimilation are classified in terms of: 1) Degree (i.e. the extent of the influence; where you have complete, partial, coalescence and

[2] Oyebade (48-53) also presents such types of assimilation in language.

conditional), 2) Direction (i.e. the direction of the influence; where you have regressive and progressive), 3) Nasality (whether nasal quality is asserted on a segment), and 4) Vowel Harmony (whether the vowels involved are from the same vowel group) (Uwaezuoke, 110). On the basis of the principle of binarism, the scholar uses a limited number of features from the pool of features of assimilation, which he had identified to describe them, as:

i) Complete/Partial, which becomes [±compl], where complete assimilation refers to those

assimilation types where the level of the influence asserted on the influenced segment is total, e.g. **nwèrè** + **ike** → **nwèrì ike** 'can'; and non-complete assimilation is for those assimilation types where the level of influence is partial, e.g. /**m** + **gà** / → [**ŋ gà**] 'I will';

ii) Regressive/Progressive, which becomes [±regr], where regressive assimilation occurs

when a segment moves backwards to influence another segment preceding it, e.g. **ùde**

\+ **isi** → **ùdi isī** 'hair cream'; and non-regressive assimilation takes care of the

assimilation types where a segment moves forward to influence another segment

following it, e.g. **nli ị̀gbàgwụ̀ [nli ìgbàgwò]** 'corn food';

iii) Coalescence/Non-coalescence, which becomes [±coal], where in coalescent

assimilation, two segments must coalesce into one different segment, e.g. nne ya [nnĩ

↓é] 'his/her mother', where /e/ and /j/ coalesce to [i]; but in non-coalescent assimilation,

no two segments coalesce into one different segment, e.g. **imi** + **ya** → **imijē** 'his/her

nose' or **isi** + **ewu** → **isjewū** 'goat heaad';

iv) Conditional/Non-conditional, which becomes [±condi], where conditional assimilation

is the assimilation type that it is conditional for assimilation to occur, e.g. **ọnū** + **egō** →

ọneegō or **ọnụegō** 'amount of money'; but for non-conditional, an influence is asserted

without any condition;

v) Nasal/non-nasal which becomes [±nasal], where nasal is the feature of the assimilation

type where there is the assertion of a nasal quality of a segment onto another segment,

e.g. **/ɔ↓nǘ/ → [ɔ↓nṹ]** ‘mouth’; while in non-nasal assimilation, there is no such assertion,

e.g. **ọkụ → /ɔkʊ / → [ɔkʊ]** ‘fire’;

vi) Harmonious/non-harmonious which becomes [±harm], where in harmonious

assimilation, there is harmony between the vowel segments involved, e.g. **/ozu/**

‘corpse’; while in non-harmonious, there is no such harmony.

With the pool of features of assimilation Uwaezuoke had identified, he finally presents the distinctive feature matrices of the types of assimilation in Igbo as seen in table 1.

Table 1 Distinctive Feature Matrices of the Types of Assimilation in Igbo

	V – V C – V	V – Syll	Syll N – C	V – C
Compl	±	+	-	-
Partial	±	-	+	-
Condi	+	-	+	+
Regr	±	-	+	-
Progr	±	+	-	-
Coal	-	-	-	+
Nasal	-	-	-	-
Harm	+	-	-	-

(Uwaezuoke, 111)

Uwaezuoke investigates tone assimilation in Igbo with the aim of establishing that tone assimilation exists in the language. Using descriptive method, he analysed the primary data and secondary data obtained from Ogbunike Igbo variety and existing literature respectively. His results reveal that tone assimilation exists in the

Igbo language. For example, in connected speech, where the first noun ends in a downstep tone and the second noun begins with any tone, the downstep tone of the final vowel of the first word assimilates the high pitch of the initial vowel of the second word, as seen in (4) from Emenanjo.

(4)

	Word 1		**Word 2**		**Connected Speech**
(i)	**elū**	+	**ụlọ̀**	→	**elu ụlọ̀**
	top		house		'house top'
(ii)	**nkịtā**	+	**ụlọ̀**	→	**nkịta ụlọ̀**
	dog		house		'domestic dog'

(Emenanjo, 116–118):

Also, where the first word is in its infinitive form with a H $^{\downarrow}$H tone sequence and the second word has a H H tone sequence, the high tone of the initial vowel of the second word drops its high pitch and completely assimilates the reduced high pitch of the final vowel of the first word. This is exemplified in (5).

(5)		**Word 1**		**Word 2**		**Connected Speech**
	(i)	**ibē**	+	**akwa**	→	**ibē ākwa**
		to cry		cry		crying
	(ii)	**ijē**	+	**afịa**	→	**ijē āfịa**
		to go		market		'to go to the market'
	(iii)	**ịtā**	+	**anụ**	→	**ịtā ānụ**
		to chew		meat		'to chew meat'

(Uwaezuoke, 51)

The data in (4) and (5) show that tone assimilation could be regressive or progressive. The scholar concludes that assimilation in the Igbo language occur not only among the segmental phonemes, but also among the supra-segments (tone in particular).

Uwaezuoke and Eme investigate coalescent assimilation in Igbo using the autosegmental phonology model as their framework. From the results, they conclude that, unlike the descriptive method and or the generative phonology theory commonly

adopted by previous scholars in their analysis of coalescence in Igbo, the autosegmental phonology model is more reliable, simpler, more convenient and explicit in accounting for coalescent assimilation in Igbo.

The foregoing reveal that assimilation in the Igbo language has been investigated mainly descriptively. Therefore, it will not be out of place to advance on the application of theories in analysing the phonological process, and that is what this paper aims at; by using the government phonology theory to analyse assimilation in two Igbo words: ***ǹgịvụ*** 'you' and ***gbaa egbè*** 'shot gun'. In the next section is a review of the government phonology framework.

3. Theoretical Framework

This paper anchors on the government phonology framework of Kaye at al, which considers the relationship between

phonological elements of language and the natural relationship existing among languages very paramount. Its emphasis is on context, and the phonological processes and secondary articulatory features of language are viewed as taking place at certain context and un-arbitrarily too. The context determines the governor, which possesses charm, and the governee that is charmed or charmless (Cyran). The operations of government phonology are succinctly summarised, thus:

> A model of non-linear phonology in which the notion of government is central, also called government-based phonology or government and charm phonology. Government is here defined in terms of headedness – a binary asymmetric relation holding between two skeletal positions. Certain segments within syllable structure are seen to have governing properties, and associated to governing skeletal positions. Other segments are governable, and are associated to skeletal positions that are governees. Headedness is seen as local (i.e., between adjacent segments) and directional (head-initial) (Crystal, 215).

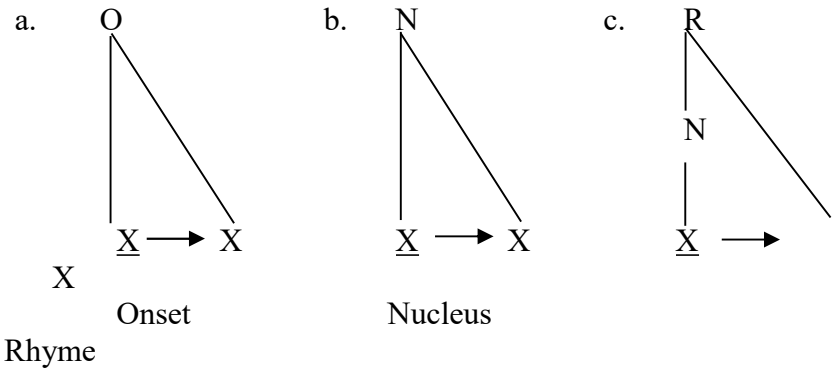
The theory operates with certain necessary conditions which must be fulfilled: formal condition and substantive condition. The formal condition involves the notions of locality (adjacency) and directionality; the strict locality condition requires the governor to be obligatorily adjacent to the governee at the P_o projection without any position intervening (P_o refers to the projection containing every skeletal point), and the strict directionality condition emphasizes the directionality of government at the skeletal level and it is universal and devoid of any parametric variation. The formal condition observes binarity principle whereby no constituent may dominate more than two positions.

The substantive condition refers to the governing properties of segments (charm, which is later replaced with the notion of

segmental complexity[3]) that motivate/initiate governing relations. Three kinds of government are recognised in phonology: the constituent government, interconstituent government and projection government.[4] The constituent government involves only one constituent, which represents a syllable, and occurs between two binary asymmetric skeletal slots in a single constituent (Charette; Cyran). It adheres to strict locality as well as strict directionality conditions, and the head governs the complement from left to right (Charette; Cyran; Brockhaus & Ingleby). The elements must be members of the same syllable. This means that coda is forbidden from being a possible constituent. The constituent government is explained in fig. 1.

Fig. 1 Constituent governing domains

[3] Segmental complexity holds that the governing relation must be in such a way that the governor is more complex than the governee (See Cyran; Harris).
[4] Polgardi presents the three kinds of government.



(Adapted from Cyran, 8)

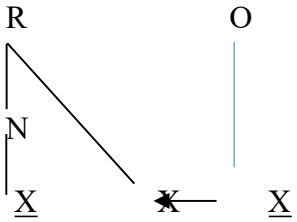
The underlined element in figure (1a-c) is the head. The syllabic constituents may or may not branch[5] and all branching constituents are head-initial. The left branching of every rhyme is the nucleus constituent as disclosed by Figure 1(c).

The interconstituent government is the kind of government involving two constituents, and the two skeletal slots at adjacency position involve two syllables. Unlike constituent

[5] It depends on the parametric variation with languages (See Cyran).

government which is head initial, interconstituent government is head-final and the governor-governee relation is from the right to left. The strict locality and strict conditionality also apply to interconstituent government, such that the two skeletal slots must be adjacent and no constituent may dominate more than two positions. This is illustrated in fig. 2.

Fig. 2 Interconstituent government



(Adapted from Cyran, 8)

The projection government occurs at the level of nuclear projection between two heads of nuclear constituents. This kind of government is local, but not strictly local because at the level of projection, the two nuclear constituents are adjacent; but at lower levels, there may be other intervening elements. The

governor-governee relation here could either be left to right or right to left depending on the language. This suggests that the strict conditionality condition does not also apply to projection government. The projection government is illustrated in figures (3) and (4).

Fig. 3 Government at the nuclear projection (binary projection on government)

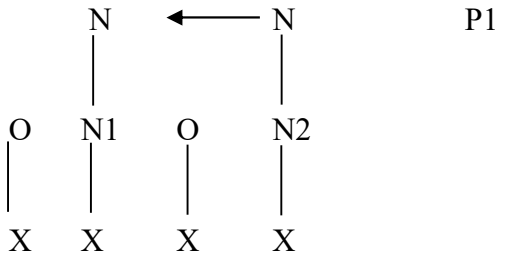
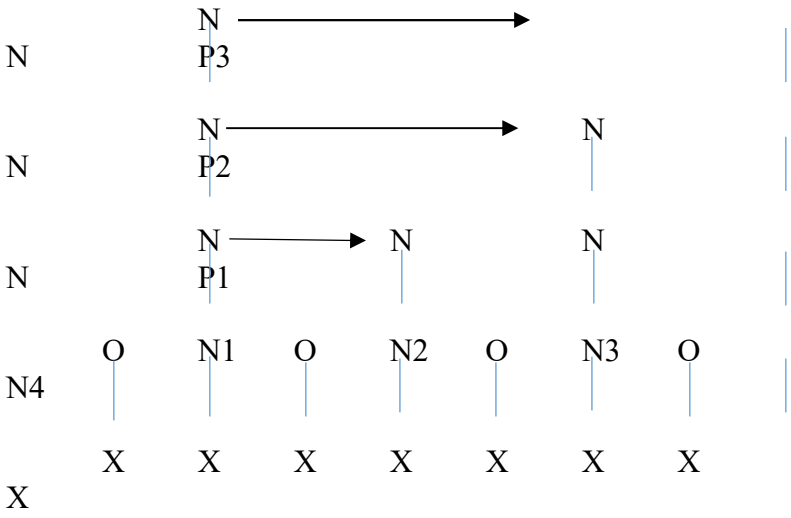


Fig. 4 Government at the nuclear projection (Unbounded projection government)



(Adapted from Nwokeiwu, 26-27)

Fig. 3 is head final, and fig. 4 is head initial. The representations in fig. 4 show that the governor, which is N1, governs all its governees in a local manner, but each of the governees is governed on the next level of projection. In this respect, the unlicensed nuclei are projected to the next higher level, which in this case is P1, in order to be in government relation. For the unbounded government, N1 can only govern N2 as that is the

only position that is adjacent to it and that will make it to be licensed and not to be projected to the next higher level. It is the N3, which is still unlicensed, and N4 that can be projected to the next higher level where it (N3) can be governed by N1. The N3 with N2 will not further be projected to the next higher level P3 as it has been licensed. It is only the N4 that will be projected to the next higher level of P3 to be governed by N1 and licensed.

The choice of government phonology theory as framework for this study from the investigation being on assimilation, which is part of phonological processes that the theory considers to be a result of natural relationship existing among sounds at adjacency position. Scholars have also applied this framework in the past, but not in details. Mbah, for instance, studies the realisation of [m], [n] or [ŋ] in the surface form of the Igbo words ***mma***

'beauty/good', ***nne*** 'mother', and ***nha*** 'equal' respectively for the underlying or psychological reality /ŋ/. He concludes that what has happened is a consequence of anticipatory articulation that is conveniently accounted for by government phonology. Oyebade and Mbah examine how the government phonology can account for emergence of consonant clusters in the Igbo and Ga languages, and their findings reveal that empty nuclei exists in both languages; thus emphasising that most African languages lack consonant clusters. Edeoga uses government phonology to analyse vowel harmony (VH) in Nsukka dialect of Igbo and concludes that VH system can be explained with the theory.

Nwokeiwu tests the applicability of government phonology for the analysis of vowel harmony and homorganic words in Ụbọma dialect of Igbo and discovers that the theory conveniently explains vowel harmony and homorganic words in the dialect. He also identifies government phonology in forming infinitive,

participle, gerund, noun agent, past tense and imperative in the dialect. He discloses that the determinant of government for vowel harmony are the vowels of the verb root, which must be obeyed by other constituents; while for homorganic words, government is determined by the consonants that form the root of a word which the prefix must take to. Since none of these past studies has shown details of their analysis with the government phonology framework, the current study shows details of the application of the framework.

4. Methodology

This study is designed to be theoretical in nature. The primary data from Anàkụ̀ variety of Igbo are presented and analysed simultaneously using the government phonology framework. The data are tone marked using Green and Igwe's tone-marking

convention of leaving high tone unmarked, marking low tone with a grave accent [̀], and marking the downstep tone with a macron [̄] orthographically or by first placing a down-pointing arrow before the syllable, followed by an acute accent on the tone-bearing unit [↓ ́] phonemically and phonetically.

5. Data Presentation and Analysis

Two data are analysed with government phonology theory, and they are:

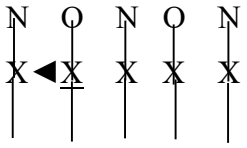
(6) i. **ǹgịvụ** [**ŋ̀gɪvʊ**] 'you'

ii. **gbaaegbè** [**gbee egbè**] 'shot gun'

(6i) is an example of homorganic nasal assimilation, while (6ii) is vowel-vowel assimilation affecting two vowels at the same time. Perceptually, the voiced velar plosive /g/ regressively influences the alveolar nasal /n/, thereby making the alveolar nasal to partially drop its alveolar or coronal feature to partially take up

the velar or grave feature of the voiced velar plosive. Similarly, the initial [front, half-open, +ATR] vowel /e/ in ***egbe*** 'gun' influences the two [front, open, -ATR] vowels /a/ in ***gbaa*** 'shot', such that they completely drop their features to take the features of /e/. Their analyses using the government phonology are shown in figures (5) and (6).

Fig. 5 Government phonology account of homorganic nasal assimilation in Anakụ Igbo variety



ǹgịvụ /ŋgɪvʊ/ 'you'

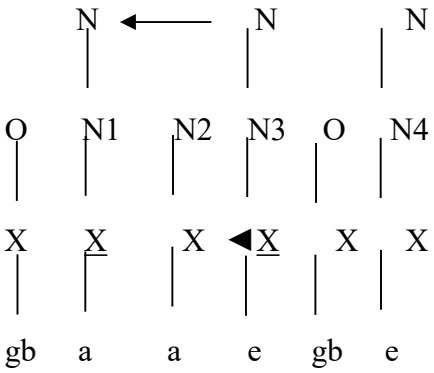
Key: (◀) shows the direction of government

In fig. 5, the obstruent /***g***/ is the governor which possesses charm, while the syllabic nasal /***n***/ is the governee and charmless. The governor /**g**/ has charmed its governee /**n**/ to the left, and has

made it to partially drop its phonetic feature [+alveolar] to take up the phonetic feature [+velar] of /**g**/ thereby changing it to a velar nasal /**ŋ**/ at the surface structure. This is an example of interconstituent government. The head is, therefore, right to left.

Fig. 6 Government phonology analysis of vowel-vowel assimilation in Anakụ Igbo variety

P1



egbe **[gbeeegbè]** 'shot gun'

Key:

i. (←——) Proper Government

ii. (◄) Interconstituent government

Fig. 6 shows that the N3 governs the N2 preceding it thereby making it to completely assimilate its features. The N1 projects to the next level of P1 where it is in binary position to be governed by N3 without an intervening element. Through this, N1 drops all its features to completely take the features of N3.

6. Summary and Conclusion

As a major co-articulatory feature of human language involving two segments in binary asymmetric relation, and having agreed with the first requirement for government to occur in language, this paper set out to analyse assimilation in Anàkụ̀ Igbo expressions, ***ǹgịvụ*** **[ŋ̀gɪvʊ]** 'you' and ***gbaa egbe*** **[gbeeegbè]** 'shot gun' using the Government Phonology framework. The results have revealed a relation of government existing between the sounds in the context of assimilation in the two expressions, in which the governor with charm has charmed its governee. The

two expressions have also shown evidence of interconstituent government involving different syllables with right to left headedness. Assimilation, therefore, adheres to the principles of the government phonology theory.

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