'Geminate' consonants in Òwèré dialect of Igbo

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Gemination in the Igbo language has been shown to be a phonetic phenomenon which occurs as a result of vowel elision between two identical consonants in rapid speech. However, investigations into other languages seem to suggest that consonant gemination could be a phonological phenomenon. This paper investigates the Òwèré dialect (OD) of Igbo with respect to gemination. Employing a descriptive approach, the study discovers that many consonants become realized as geminates in the normal flowing speech of the native speakers, basically as a result of the elision of a high vowel in between two identical consonants. Since it has become the normal way of speaking except for emphasis among the Owere dialect users, one may conclude that consonant geminate formation is ongoing in OD. We present in the paper instances were these 'geminates' could contrast with non-geminates using minimal pairs and near minimal pairs.

Keywords: *consonants, gemination, vowel elision, Owere Dialect, minimal pairs*

1.   Introduction

Consonant gemination is the phenomenon in language where a consonant in a morpheme is doubled in the course of speech. This results in two adjacent consonants within a morpheme being identical. Consonant cluster on the other hand, is when two unidentical consonants occur adjacent to each other in tautosyllabic structure. Such identical consonants or geminates are attested to be phonemic in some languages like Italian, e.g. *notte* /nɔtte/ 'night' (cf. Crystal, 2003). In some other languages, gemination may not be attested at all, or where it occurs it is a phonetic event. Eme and Nwankwere (2012) show that in Standard Igbo, the length of certain vowels or syllabic nasals could be made to become longer as a phonetic, rather than a phonological event; geminates were not found.

It was in the course of our collecting the relevant linguistic data for our study of phonetic lengthening of sounds in the Standard Igbo dialect that we coincidentally ran into some Òwèré data that seem to reflect phonemic gemination in this Igbo dialect. In that work, (Eme and Nwankwere, 2012) they said,

> In the course of our data collection for this paper, some of our informants gave some examples using their dialect. Before we discarded the dialectal forms as not being relevant to our present research, we discovered that sound lengthening in the Owere dialect of Igbo could result from gemination caused by the deletion of an intervening vowel. A vowel occurring between two consonants is deleted in fast or spontaneous speech in certain words of the language.

This chance discovery spurred us into carrying out a further investigation of the dialect, as we recommended; hence this paper sets out to investigate gemination in the Òwèré dialect of Igbo.

It is important to note that the vowel elision that leads to what looks like consonant gemination occurs in fast rapid speech, but interstingly it occurs in the normal speech of most OD speakers interviewed This implies that there may be a gradual language change which could lead to gemination becoming a phonological phenomenon since it could lead to contrast in the dialect. This paper tries to show those contrasts by setting up minimal pairs and near minimal pairs.

2.   Literature review

According to Bussmann (1996:272) a geminate consonant is a "consonant that is distinguished from another exclusively by its longer period of articulation". For him, gemination differs from lengthening, as lengthening is often associated with vowels. He therefore sees lengthening of a sound as "the increase in the quantity of a segment, usually a vowel." Crystal (1987: 421) defines a geminate as, "A sequence of identical adjacent [consonant] sounds in one morpheme." In Crystal (2003:196) germination is defined thus:

> [Gemination] is a term used in phonetics and phonology for a sequence of identical adjacent segments of a sound in a single morpheme, e.g. Italian *notte* /nɔtte/ ('night'). Because of the syllable division, a geminate sequence cannot be regarded as simply a 'long' consonant, and transcriptional differences usually indicate this, e.g. [-ff-] is geminate, [-f:] is long.

Further examples in the Italian language showing where geminates contrast with their non geminate counterparts are given by Clark, Yallop & Fletcher (2007: 52). They involve the alveolar plosive [t] and the alveolar nasal [n].

(1)   a.   notte   'night'   note 'notes'
       b.   canne   'canes'   cane 'dog'

Geminate plosives and fricatives occur in Luganda, as shown by Mutaka & Tamanji (2000). According to them, the geminates can contrast with their non geminate counterparts in certain words of Luganda to realize minimal pairs. Their examples include the following (cf. page 49):

(2)   a.   okubba   'to steal'   okuba   'to be'
       b.   okkuta   'to kill'   okuta   'to let go'
       c.   okuggwa   'to get finished'   okugwa   'to fall'
       d.   amazzi   'to make someone come back'   amazi   'dung'

In her study of four Igbo dialects- Akpo, Adazi-Nnukwu, Amaezu and Ezza, Eme (2008) shows that certain sound segments could be lengthened in these dialects to achieve such effects as time-gaining device to enable the speaker to change his line of thought or to remember the right word. It could also be used to lay emphasis or to show the long duration of an action or event. Some individuals even use the lengthening strategy as a form of speech mannerism. In all these cases, sound lengthening is not contrastive. The extension of this investigation to the standard Igbo dialect by Eme & Nwankwere (2012) yielded the same result, indicating phonetic lengthening of such sounds.

According to Paradis (1992), in the Fula language, apart from continuants, all consonants can become geminates. Bakovic (1995) however points out that there is a phonotactic constraint restraining the Fula geminates from closing a syllable headed by a long vowel. He explains that this restriction is not placed on consonant clusters. Examples of words where geminate consonants appear in Fula, as given in Paradis (1992: 171), are shown below. We can see that the examples in (3) contain bilabial geminates [p b m] while the ones in (4) involve alveolar geminates [t d n].

(3)   a.   hippoode   'lid'
        b.   abbaade   'to rejoin'
        c.   ummaade   'to rise'

(4)   a.   wuttude   'to blow'
        b.   fadduru   'fish'
        c.   yennude   'to malign someone'

Pycha (2007) shows that gemination is phonemic in Hungarian. The kind of gemination in Hungarian, according to him, results from morpho-phonological conditioning in which a suffix triggers gemination as well as lengthens the final consonant of the root to which it attaches.

It is important to note that the geminates we are considering in this paper differ significantly from the geminates attested to in different languages reviewed above. This is because the so called geminate consonants in OD result from the elision of a high vowel in between two identical consonants.

3.   Methodology

The researchers used native speaker intuitive knowledge as well as interviews to gather the data. They randomly selected and interviewed forty people from OD. These consultants were of different age brackets with the least being fifteen years of age. They have lived in and within their communities for the greater part of their lives. With the help of the lead researcher, who is also an indigene and a native speaker of OD, it was easy to randomly select our consultants. They were individually asked to discuss any topic of their interest using their dialect. Such topics discussed included traditional festivities and ceremonies, family and community politics as well as occupation, traditional religious events etc. Their speeches were recorded with their consent. They spoke freely without fear as they are familiar with the lead researcher and this yielded the required reliable data for our investigation. Sometimes, side comments, greetings and instructions not targeted at the researchers yielded some of the items of our data. The area of study consists of the many communities in Nwaozuzu's (2008) Uratta Dialects (UD) within the East Central Group of Dialects (ECGD). We prefer to call them OD as it is the usual term used by the speakers to refer to their speech variety. The term was very much popularised by the colonial administrators since Òwèré (which they called Òwérrì) was the administrative headquarters. All the three phonemic tones of Igbo are marked using the acute accent / ´ / for high tone, grave accent / ` / for low tone and macron / ¯ / for down step tone. The items of our data are tone-marked, and glossed in English. For transcription, we adopt the symbols of the IPA;

and [-CC-] for the geminate consonants in accordance with Crystal (2003: 196) who proposes the use of [:] for length or long consonant as in [p:] and [-CC-] as in [-pp-] for double consonants or geminates. Since there are certain sounds in Owere dialect that have no orthographic representation using the Igbo Standard Orthography, we use the phonetic symbols in presenting all our data. For example breathy voicing which is phonemic in the dialect is written as /ḅ/ , /ṿ/ etc. The voiceless alveolar implosive which is found in the Òwèré dialect of Igbo is written as /ḍ/ (cf. Nwankwere, 2012).

4.   Data presentation and analysis

4.1 *Preliminaries*

The consonants of OD tend to have the propensity to become geminate as a result of the elision of an intervening high vowel. This phenomenon characterizes fast or spontaneous speech. However it does occur in the normal speech of a good number of speakers especially among the younger speakers.

A good number of these geminate consonants could be said to have their non-geminate counterparts that are already well-established as phonemes in the dialect. The geminates and their non-geminate counterparts could be used to form minimal pairs out of the words of the dialect. But some others have what we may term 'near-minimal pairs' due to tonal differences or different consonants. There are also others grouped under special cases because of partial elision resulting in the elided vowel transferring its tone to the nasal consonant immediately preceding it thereby making it syllabic. We also isolated a final group of data that have the same geminate consonants in non geminate forming environments due to certain constraints, like reduplication involving nasals or the vowel coming between two nasals with different places of articulation. This group helps to confirm that gemination is attained in this dialect in the defined environment.

4.2 *Rule for gemination*

In OD, segments could become geminate when they occur in some specified phonotactic environment. The common phonotactic rule for gemination in OD is stated below:

(5) $CV^{t1} + CV^{t1/2} \rightarrow CCV^{t1/2}(CCV^{t1}/CCV^{t2})$

where, CV means a syllable sequence that consists of a consonant + a vowel. It must be stated that for a three-syllable word with VCVCV structure, the initial V syllable is not part of this rule, as our interest is on the syllable with CV structure. $CV^{t1} + CV^{t2}$ means a two-syllable root/stem/word; t is the tone of the syllable; t1 + t1 denotes similar tone; t1 + t2 denotes a two-syllable root/stem/word with different tones. So, the ones with same tone will be $CV^{t1} + CV^{t1} \rightarrow CCV^{1}$; while those with different tones will be $CV^{t1} + CV^{t2} \rightarrow CCV^{t2}$. Note that the C segments cannot be nasals with different places of articulation; or else gemination is blocked.

In all cases, the geminate occurs in two syllable structure where the first syllable ends with an unreleased consonat and the second syllable starts with a released counterpart as shown below:

<div align="center">áb.bà 'feather'</div>

Since Igbo language does not permit closed syllables, we assume in this paper that the identical consonants are one and the same. Hence the use of qoutation marker in the word 'geminate' in the title since they seem not to behave like geminate consonants identified in different languages in the literature.

4.3 *The data*

The data are presented in tabular form with the first column representing the words from which the geminate consonants are derived. The second column is the geminate while the last column is the non-geminate

4.3.1 *Minimal pairs*
Words in this group have identical segments and the same tone pattern but differ only in the geminate versus non-geminate consonants

	Source		Geminate		Non Geminate	
(6)	a. áb̥ób̥à	→	áb̥b̥à	'feather'	áb̥à	'entering'
	b. áfòfò	→	áffò	'phylaria rashes'	áfò	'half a penny'
	c. àmòmà	→	àmmà	'lightening'	àmà	'information'
	d. áỹóỹò	→	áỹỹò	'palm chaff'	áỹò	'song'
	e. áwòwò	→	áwwò	'trick'	áwò	'toad'
	f. ìkùkù	→	ìkkù	'air'	ìkù	'eyelid'
	g. òfùfè	→	òffè	'worship'	òfè	'across'
	h. òʧíʧá	→	òʧʧá	'cockroach'	òʧá	'fair complexion'
	i. ókpókpó	→	ókpkpó	'bone'	ókpó	'precious'
	j. òɲìɲé	→	òɲɲé	'gift'	òɲé	'who?'
	k. òrírí	→	òrrí	'feast'	òrí	'shear butter'
	l. óʃíʃǐ	→	óʃʃǐ	'tree'	óʃǐ	'theft'
	m. òɗǒɗò	→	òɗɗò	'morning'	òɗò	'local bush apple'

4.3.2 *Near-minimal pairs*
In this group are pairs that differ in more than one segment. The difference may involve a difference in tone pattern.

	Source		Geminate		Non-Geminate	
(7)	a. àbòbà	→	àbbà	'fat'	ábà	'palm fruit/oil season'
	b. àdòdò	→	àddò	'tale bearing'	áḍò	'a type of yam'
	c. àfófǎ	→	àffǎ	'garden egg'	áfá	'divination'
	d. ákwókwó	→	ákwkwó	'book'	àkwó	'grinds'
	e. ákókó	→	ákkó	'story'	àkó	'wisdom'
	f. ákpókpó	→	ákpkpó	'skin'	àkpɔ	'refuse heap/call/dry'
	g. áỹòỹò	→	áỹỹò'	'place name'	àỹò	'place name'

<div align="center">6</div>

h. étútó	→ éttó	'boil'	ètó	'grows'
i. ɔ̀tʃítʃĭ	→ ɔ̀tʃtʃĭ	'rulership'	ɔ̀tʃĭ	'constipation'
j. ògwùgwù	→ ògwgwù	'a deity'	ògwú	'one who digs'
k. òkwùkwé	→ òkwkwé	'faith'	òkwè	'a game (seeds)'
l. ɔ̀kʷ̃ʰòkʷ̃ʰò	→ ɔ̀kʷ̃ʰkʷ̃ʰò	'funeral'	ɔ́kʷ̃ʰò	'concubinage'
m. ɔ̀mìmì	→ ɔ̀mmì	'fruiting'	ɔ̀mí	'pond'
n. òmùmé	→ òmmé	'behaviour'	ómé	'tendril'
o. òsìsè	→ òssè	'drawing'	ósè	'pepper'
p. òtító	→ òttó	'glory'	ótó	'enough'
q. òʒúʒú	→ òʒʒú	'stealing'	óʒú	'corpse'
r. ɔ̀ʒ̃òʒ̃ò	→ ɔ̀ʒ̃ʒ̃ò	'training'	ɔ́ʒ̃ò	'ant hill'
s. úfúfé	→ úffé	'breeze'	ùfé	'flying'

4.3.3 *Special geminate environments*

The members of this group are special because they involve elision of vowels in the environment of nasals without eliding their different tones; where there is no nasal preceding the elided vowel, the intervening consonant is replaced with a homorganic nasal. The elided vowel transfers its tone to the nasal immediately preceding it thereby making it syllabic. We exemplify below:

	Source		**Geminate**		**Non Geminate**	
(8)	a. ḿmìmì	→	ḿm̀mì	'spicy fruit'	m̀mì	'sandfly'
	b. m̀kpókpɔ̀	→	m̀ḿkpɔ̀	'cricket'	ḿkpɔ̀	'container'
	c. m̀kpókpò	→	m̀ḿkpò	'mushroom bud'	m̀kpò	'saturation'

4.3.4 *Geminates in words with no words containing the non-geminate counterpart*

There are words that contain derived geminate consonants but there are no words with non-geminate that contrast with them. Such words are shown in (9).

	Source		**Geminate**	
(9)	a. ákpókpá	→	ákpkpá	'scabies'
	b. ńtʃìtʃĭ	→	ńtʃìtʃĭ	'velvet tamarind'
	c. òtìtì	→	òttì	'a shout'
	d. ɔ̀ỹóỹó	→	ɔ̀ỹỹó	'caterpillar'
	e. òzùzò	→	òzzò	'raining'
	f. òzùzù	→	òzzù	'completion'

Note that the above instances are considered to be geminate because there are some words with similar phonotactics which cannot be pronounced like the above. We refer to such words as constituting non geminate environments. The words include the examples in (10) below.

(10)	a. ḿkpóḿkpó	'rubbish heap'	→ * ḿkpm̀kpó
	b. ḿkpɔ́ḿkpɔ́	'useless'	→ * ḿkpḿkpɔ́
	c. ḿkpúmkpú	'hunch back'	→ * ḿkpmkpú
	d. ḿmánʊ́	'oil'	

e. ḿmánὸ   'a person'
f. ḿmáŋwó   'masquerade'
g. ńḍóńḍó   'short and fat' → * ńḍńḍó
h. ŋ̀kʰàŋ̀kʰà   'mosquito'   → * ŋ̀kʰŋ̀kʰà

It seems that gemination operates where the Owere speakers regard the syllables as forming one and same word without which gemination does not operate. A reduplicated form as in (10) is not morphologically regarded as one word but two, in spite of the fact that semantically it is inevitably one word and not two. An alternative explanation is that consonant gemination in Owere requires that only one vowel be elided. Since reduplicative examples in (10) carry two successive vowels, they do not satisfy the conditions for gemination to take place.

5.   Summary and Conclusion

This paper has studied cases of vowel elision in Igbo, with our focus on the Òwèré dialect. The researchers discovered that the consonant 'geminates' that result from this elision, even though phonetic can be used to make distinctive contrasts in the dialect. Many instances where they contrast with their single segment variants were shown. All the instances of 'gemination' discovered for the dialect obey the gemination rule as stated above and repeated here as (11).

(11) $CV^{t1} + CV^{t1/2} \rightarrow CCV^{t1/2}(CCV^{t1}/CCV^{t2})$

This shows that all the instances of gemination listed result from vowel elision. Some environments constrain the realization of geminates. For example, when the words/morphemes consist of reduplicated form; or the vowel of the morpheme comes between two nasals produced at different points of articulation.

The Igbo language does not permit consonant cluster; and what we find in Òwèré dialect with respect to gemination does not contradict this stand, as two identical consonants cannot be termed a consonant cluster. The fact that gemination does occur in the slow normal speech of many OD speakers suggests that gemination is gradually becoming phonemic in the dialect and could be formalized in the future phonology of OD, as separate phonemes. The researchers suggest that more investigations are required using many more dialects of Igbo in order for one to be able to make further and reliable statements on gemination phenomenon in the Igbo language. This study is perceptual in nature, but an experimental analysis may be needed in the future studies to show the actual duration of the geminate consonants as compared to the lenght of the source consonants.

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