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THE PHONOLOGICAL REALITY OF LABIAL-VELAR IMPLOSIVES [ɠɓ], [ƙƥ] AND IMPLOSIVE HARMONY IN BISENI SPEECH

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Abstract:
Whereas what is replete in the linguistic literature as double articulation is the Labial-velar plosives [kp] and [gb] in the phonemic inventory of many Niger-Congo languages, Biseni in addition to these, also reports the Labial-Velar implosives [ƙƥ] and [ɠɓ] and a **consonant harmony** that is uniquely peculiar to these implosive double articulations, where the occurrence of a preceding labial-velar implosive naturally attracts a corresponding occurrence of another implosive, thus constraining the co-occurrence of an initial labial-velar implosive with a plosive within a given morpheme boundary. The discovery and reporting of a labial-velar implosive and the implosive consonant harmony are novelties in linguistic investigation and research. This paper is part of efforts aimed at describing the grammatical structures of Biseni; a dialect of the Ijọ language, spoken in Yenagoa Local Government Area of Bayelsa State, Nigeria. Data were elicited through recordings from native speaker language consultants, while putting same into analyses and findings enabled the attestation of [ɠɓ] and [ƙƥ] implosives and their associated harmony with singly articulated bilabial or alveolar implosives [ɓ] or [ɗ].

Keywords: Labial-velar, Implosive, Biseni, Harmony and Articulation

1. INTRODUCTION

Implosives are stops produced with closed stricture just like plosives, but they use ingressive airstream mechanism such that the air is described as initially rarefied above the larynx with the glottis closed as the stop is articulated in the oral cavity and the larynx lowered in order for the air to be drawn inwards when the closure in the front of the oral cavity is released.

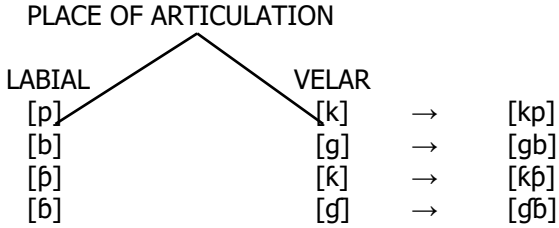
Implosives fall under the non-pulmonic categorisation of speech sounds, because the airstream for their production does not emanate from the lungs but is sucked in from the oral cavity. Other such non-pulmonic speech sounds are clicks and ejectives. Given that the phonation of an implosive occurs as the glottis meets the air in the trachea, it is said to use a glottalic airstream mechanism. Single implosive speech segments in Biseni are [ɓ], [ɗ], [ɠ], while [ɠɓ] and [ƙƥ] are double articulations of labial-velar implosives in Biseni.

2. METHODOLOGY

Data were elicited through recordings of competent native speakers' speech during one-on-one interactions and group discussions. In addition, secondary sources such as text materials in the form of books and theses were also utilized, as they served very resourceful to the work.

3. LABIAL-VELAR IMPLOSIVE ARTICULATION

Labial-velar plosives (stops) are the most common if not the only reported double articulations in Nigerian and other West African languages in the literature. They are examples of complex articulation that involve the combination of two single stricture of same type at different articulatory positions, occurring at the same time. Matthews (1997 p. 104) sees double articulation as the "production of a sound at two equal places of articulation. Eg. [kp], in many African languages, as a single consonant produced with partly simultaneous closures of the tongue against the soft palate and of the lower lip against the upper lip". We can use the following diagram to illustrate the simultaneous nature of labial-velar sounds:



Labial-velar stops are different from other types of complex articulations like sequential complex articulations of affricates that move from one stricture to another. In the case of labial-velar stops, both articulators work at same strength and none subordinate to the other nor any superimposed on the other. Thus, none is viewed as primary or secondary.

Though, what is replete and extensively reported in the literature as double articulation are the voiced and voiceless labial-velar plosives [gb] and [kp], Biseni attests the voiced and voiceless labial-velar implosives [ɠɓ] and [ƙƥ], in its phonological inventory:

2. [ɠɓ]
a) ímgḅáálú [1ɠɓá:lú] 'thorn'
b) ịmgḅurú [1ɠɓʊrú] 'mud fish'
c) ịmgḅiḍa [1ɠɓ1ɗa] 'antelope'
d) ímgḅu [1gb̰ú] 'to tighten the neck of an opponent in a fight or wrestling'
e) ímgbé [1ɠɓé] 'cold'
f) ímgḅangb̰a [1gbãɠɓa] 'pelted stone or object'
g) ímgḅẹ̀ẹ̀ [1ɠɓɛɛ] 'today'
h) ímgḅira [1ɠɓ1ra] 'shin'
3. [ƙƥ]
a. akpan [aƙƥã] 'bag'
b. íḳpídẹ́ [íƙƥ1ɗé] 'talk'
c. akpiḍa [aƙƥ1ɗa] 'prawn'
d. ákpíḍẹ́ [áƙƥ1ɗɛ́] 'name of a community in Biseni'

The implosives in the examples are doubly or simultaneously articulated with ingressive suction of air accompanied by a combination of bilabial and velaric strictures occurring at the same time in the two different places of articulation with equal strength. The airstream is glottalic.

4. IMPLOSIVE CONSONANT HARMONY

Biseni phonology also attests a unique consonant harmony that is peculiar to implosives, such that the occurrence of one preceding implosive attracts the occurrence of another implosive consonant, while the language also places a constraint on implosive and plosive co-occurrence within morpheme boundary, when the preceding sound is an implosive. Observe the implosive harmony in the following words:

4. a) ịmgḅiḍa [ĩɠɓ1ɗa] 'antelope'
b) ímgḅangḅa [ĩɠɓãɠɓa] 'pleted stone or object'
c) íḳpiḍe [íƙƥíɗé] 'talk'
d) ákpíḍẹ́ [áƙƥíɗɛ́] 'name of a community in Biseni
e) akpiḍa [aƙƥ1ɗa] 'prawn'
f) ḳpịḅu [ƙƥ1ɓʊ] '(be) full and heavy'

In order to validate the phonological reality and distinctiveness of these labial-velar implosives, we test for contrast in analogous environment in the absence of minimal pairs:

5. a) i gbẹ́ [gbɛ́] 'pay'
ii ímgḅẹ́ẹ̀ [1ɠɓɛ́ɛ] 'today'
b) i. gbida [gb1da] 'group fishing in a lake'
ii imgḅiḍa [ĩɠɓiɗa] 'antelope'
c) i igbọn [igbõ] 'slave'
ii ímgbí [ĩɠɓó] 'bone'
d) i. íkpáa [ĩkpáa] 'hock (fishing)
ii. ịḳpídé [íƙƥíɗé] 'talk'
e) i. kpa [kpa] 'plait'
ii. ḳpún [ƙƥũ] 'pull/drag'

The test for contrast affirms the distinctiveness of [ɠɓ] and [ƙƥ], thus vitiating any allusion to the sounds being likely allophonic variants of the plosives [gb] and [kp], as Yul-Ifode (1999, p. 31) states that "for two sounds to be considered allophones of the same phoneme, they.....cannot contrast in identical or analogous environment."

The implosive harmony noticed in the examples is also a validation of distinctiveness as [ɠɓ] and [ƙƥ] naturally attract [ɓ] or [ɗ] within same morpheme boundary and never [b] or [d]. The test for contrast and the harmony serve as a pointer to distinctiveness and affirms Ladefoged (2011, p. 141) position that "in many languages, such as Sindhi and several African and Native American languages, implosives contrast with plosives."

6. CONCLUSION

This paper has shown that Biseni attests the voiced and voiceless labial-velar implosives and an associated implosive consonant harmony system where the occurrence of an initial voiced or voiceless labial-velar implosive attracts a

subsequent voiced or voiceless bilabial [ɓ] or alveolar [ɗ] implosive. This harmony system constrains the co-occurrence of the labial-velar implosives with plosives in a given word boundary.
It was also observed that the harmony holds with a precedent labial-velar implosive followed by either a bilabial or an alveolar implosive and not vice-versa.
A test for contrast was used to validate the phonological reality of the simultaneously articulated implosive sounds and put paid to any dispute about their existence in Biseni phonological inventory.

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