The Syllable Structure of Ikwere

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ABSTRACT

Sounds are combined in different ways in languages of the world to form different pronounceable units known as the syllable. While some of these pronounceable units are simple and clear, others are complex and ambiguous. Using a descriptive approach, the paper analyzes the syllable structure of Ikwere, an Igboid language of the West Benue-Congo family of the Niger-Congo phylum. Previous studies observe that Ikwere operates an open vowel system like most African languages particularly the Igboid related group, but the present work observes evidence of the CVC structure in the language and notes that it could be interpreted either as a CVN or CVC. It specifically states that the structures V, N, CV and CGV are the syllable types attested in Ikwere. Thus the paper observes that the language has both univalent (clear) and ambivalent (ambiguous) syllable structures and further provides interpretations to the actual phonemic status of the various ambiguous structures. It is expected that this paper will be relevant in stating generalizations about the distribution of allophonic features in the language.

KEYWORDS: Syllable structure, univalent syllable, ambivalent syllable, syllabic nasal, vowel sequences

Introduction

The Ikwere language is an Igboid language of the West Benue-Congo family of the Niger-Congo phylum (Williamson 1988, Williamson and Blench2000). It is related to Etchie, Ekpeye, Ogba spoken in Rivers state of Nigeria and Igbo spoken in Abia, Anambra, Ebonyi, Enugu, Imo, etc. states of Nigeria. Ikwere consists of twenty-four dialects spoken by the twenty-four communities located in four (Ikwerre, Emohua, Obio/Akpor and part of Port Harcourt Local Governments Areas (LGAs) out of the twenty-three LGAs of Rivers State, Nigeria. The twenty-four dialects whose names coincide with the names of the communities are Rumuekpne (Rmkp), Rundele (Rndl), Ọdeegnu (Odgn), Ẹmowha (Ẹmwh), Ọgbakiri (Ọgkr), Akpọ, Obio, Alụu, Igwuruta (Igwr), Ọmagwna (Ọmgw), Isiokpo (Iskp), Ibaa / Obeele (Ib/ob), Ipo, Ozuaha (Ozha), Ọmuanwa (Ọmnw), Ubima (Ubma), Akpnabu (Akpb), Egbedna (Egbd), Ọmadeeme (Ọmdm), Eleele (Elle), Omudiogna (Omdg), Ubimini (Ubmn), Omerelu (Omrl), and Apnani (Apni).

There are previous works on the syllable structure of Ikwere. Some of them are Worukwo (1983), Azunda (1987) and Alerechi (1987, 2007). In discussing the verbal system of the Ogbakiri dialect of Ikwere, Worukwo (1983) outlines the phonological system of the dialect in the introductory part of the study. Among other things, he identifies V, CV and N as the syllable types of the language based on the Ogbakiri dialect. He also notes that a tone mark is usually placed on the peak (vowel or syllabic nasal) of every syllable in the language.

Similarly, in course of contrasting the affirmative and negative features of sentences in Ikwere based on the Igwuruta dialect and the English language, Azunda (1987: xiv) observes the V, CV and N syllable types in the language. She also notes that the vowel and the syllabic nasal are marked with a tone.

In the same vein, Alerechi (1987:x), carried out a contrastive study of sentence types in the Omuanwa dialect of Ikwere and English, with a view to identifying areas where errors are likely to occur and how to guard against them. In the introduction, she outlined the phonological system of the dialect and confirmed the syllable structure of Ikwere as comprising the V, CV and N, with a tone mark placed on every syllable peak of a word. Note that these works merely outlined the syllable structure of the language with no detailed analysis on the subject.

In a dialect survey of the phonological features of twenty-four dialects of Ikwere, Alerechi (2007) gives a more detailed analysis of the syllable structure of the language. Thus in addition to recognizing the V, CV and N syllable types, Alerechi (2007:106-110) identifies the CGV (Consonant-Glide-Vowel) structure in the language. She further identifies the affricates [tʃdʒ]and labialized consonants [kʷ gʷ hʷ ŋʷ] as doubtful sequences and recognizes them as single unit of sounds in Ikwere. The work demonstrates a more detailed analysis than Worukwo (1983), Azunda (1987) and Alerechi (1987) and it is not surprising as the focus of Alerechi (2007) is on phonology.

General observation from previous studies reveals that Ikwere does not record consonant or vowel cluster. However, certain words comprising ambivalent (ambiguous) segments or sequences in the language present structures that show otherwise. It is, therefore, part of the focus of this paper to give interpretations to such cases. Thus the present study does not only recognize the V, CV, N, CGV as syllable types in Ikwere, but also examines the syllable structure of nouns and verbs as representative samples of the structure of other word classes in the language; identifies evidence of CVC structure type, and *aɪ* sequence in Ikwere and gives a fairly comprehensive interpretation of the phonemic status of ambivalent cases in the language.

To accomplish the foregoing, the paper employs a descriptive approach, which is an approach that accounts for the primary linguistic data in such a way that agrees with the intuition of the native speakers of the language (Alerechi and Kari 2018: 81). Descriptive linguistics studies language in terms of their internal structures with the fundamental concept that language is patterned (Gleason 1961: iii, Finch 2000: 8). Thus this study aims at giving a fairly comprehensive description of the syllable structure of Ikwere. It also uses trees to demonstrate a visual representation of a network of hierarchical relations of the syllable and the sounds of the language (Roca and Johnson 1999:238).

Literature Review

The section reviews generally the concept of syllable structure. It briefly examines the syllable structure of English, Ibibio and the related Igboid language such as Igbo, well as why it is important to study the syllable structure of a language

The Syllable

The syllable is the smallest pronounceable unit of an utterance. It is defined as 'a unit of pronunciation typically larger than a single sound and smaller than a word' (Crystal 1997, 373). This definition fails to recognize the fact that there are syllables that can stand as a word. Phonetically, syllables are described as consisting of a centre, which has little or no obstruction to the airflow and which sounds comparatively loud; before and after this centre, there will be greater obstruction to airflow and/or less loud sound (Roach 1997:67). Considering the syllable from a phonological perspective, it is a constituent consisting of the segments surrounding a vowel or vowel-like sound and it imposes organization on segments. In this sense, a syllable is known as a suprasegmental unit (Fromkin 2000, 587, O'Grady, Archibald and Katamba 2011, 78). In other words, a syllable comprises a sonorous element and its associated non-syllabic (less sonorous) segments (O'Grady, Archibald and Katamba 2011, 78). While the vowels, glides, liquids and nasals are sonorant sounds, the obstruents (stops, fricatives, and affricates) are not. Of the sonorous sounds, the vowels are the most sonorous, while the glides, liquids and nasals are correspondingly less sonorous. Internally, the syllable is divided into onset and a rhyme. The rhyme, in turn, is classified into the nucleus or the peak and a coda. See schema (1):

Schema 1:
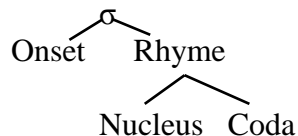
The onset is frequently optional, but always a preferred member of the syllable. The coda is never obligatory: all languages possess syllables lacking codas (open syllables) in addition to possibly syllables with codas (closed syllables) (Fromkin 2000, 589).This means that different languages havedifferent syllable structure types with some similarities. English, for instance, records the following syllable structure types as drawn from (Roach 1997, 67):

    i.   Single vowels (V) in isolation as in [aː] 'are', [ɔː] 'or'
    ii.   CV as in   baː 'bar', kiː 'key'
    iii.   VC as in   æm 'am', ɔːt 'ought'
    iv.   CVC as in rʌn 'run', sæt 'sat'

The foregoing examples in English constitute what is called monosyllable or monosyllabic words. They demonstrate that onset or coda may be optional in English, while the nucleus is obligatory. Other monosyllabic words in English constitute either complex onsets or codas. Examples are:

    v.   CCV as in   pleɪ 'play'   sta: 'star'
    vi.   CCCV as in   stru: 'strew'   skru: 'screw'
    vii.   CCVC as in   spɪn 'spin'   stɪk 'stick'
    viii.   CCVCC as in stɒps 'stops'   bægz 'bags'

These examples show that consonant clusters may occur in initial or final position of some words in English.

There are works on the syllable structure of Nigerian languages. A typical example is Urua (2000). In her treatment of the phonetic and phonological features of the Ibibio language, Urua

(2000: 64) observes that Ibibio records V, N, CV and CVC syllable types. The nucleus of an Ibibio syllable may be a single short vowel (simple nucleus) or a long vowel (VV- branching nucleus) (Urua 2007, 64). There are no complex onsets or codas phonologically, but complex onsets may be realized phonetically (Urua 2007, 64).

In a related Igboid language such as Igbo, Emenanjo (2015:47) states that the syllable structure of a traditional monolingual native Igbo speaker constitutes: the vowels and syllabic nasal as the tone bearing units; the structure of the syllable as either Vowel (V) or Consonant-Vowel (CV); the syllable is open, and there are no consonant clusters in initial and final positions in most idiolects (Emenanjo 2015, 47). What this means is that a traditional monolingual native Igbo speaker records a syllable structure types of V or N and CV in which the nucleus bears a tone. Thus the syllable structure types observed in English, Ibibio and Igbo are practical examples of the fact that different languages have different syllable structure types though there may be areas of similarities.

Why Study the Syllable Structure of a Language?

The syllable is considered as a basic unit in phonological analysis. One of the reasons the syllable is treated as a unit of phonological structure is that it is a major ingredient of phonological generalizations used to demarcate morpheme edges and define the position and shape of affixes (Kager 1999, 91).It is relevant to stating generalizations about the distribution of allophonic features (O'Grady, Archibald and Katamba 2011, 85). The distribution of the aspirated voiceless stops and their unaspirated counterparts in English is a typical example. O'Grady, Archibald and Katamba (2011: 85) observe that while aspiration can be stated generally by referring to stress and syllable structure, unaspiration is stated with reference to the subsyllabic onset and coda units. Whereas the aspirated stops occur syllable initially in a stressed syllable, the unaspirated stops occur in a syllable onset preceded by 's' and in a coda as in [p^{h}i:k] 'peak', [spi:k] 'speak' and [k^{h}i:p] 'keep'. Thus it can be stated generally that English voiceless stops are aspirated if they occur in initial position in a stressed syllable. The foregoing implies that the syllable is important in stating phonological processes in a language. In the same vein, phonological rules which are the formal versions of phonological processes are made more simple and explicit if they refer to the syllable (Kenstowicz 1994, 250).

The importance of the syllable also lies in the fact that it is a unit of organization for a sequence of speech sounds; the heart of phonological representations upon which phonological system are organized (Katamba 1989). The syllable provides an anchor on which a number of segmental and suprasegmental phenomena hinge (Urua 2007,63).Thus it is important to explore the syllable structure of a language in order to determine among other things the occurrence of segments in particular syllable position.

Methodology

The data used for the analysis of the syllable structure of Ikwere was drawn from the wordlist comprising over five hundred words collected by (Alerechi 2007) in a dialect survey of Ikwere. The Ikwere language consists of twenty-four dialects and the data for this work is based mainly on the Omuanwa dialect, with reference to some other dialects. The data were collected from 7 (5 male and 2 female) competent native speakers of Ikwere who fall within the age range of 35-

50 years at the period of data collection. The data were elicited through direct interview, participant attentiveness and conversations with some native speakers. They are represented with phonetic representation. The data are analyzed using a descriptive approach; an approach that accounts for the primary linguistic data based on the native speakers' intuition of the language.

Phonological Structure of Ikwere Words

The syllable structure refers to the manner in which a vowel and consonant(s) may come together to form a syllable or a word (Ọ̀sísanwo 2012:96). Words are structured in such a way that the number of syllables in a word may range from one to more than four syllables, that is, from monosyllabic through disyllabic and trisyllabic to polysyllabic. Ikwere words comprise different word classes such as nouns, pronouns, verbs, adjectives, adverbs, conjunction, etc., but the nouns and the verbs are in the majority. However, this study examines the structure of Ikwere nouns and verbs for economy of presentation because they represent the syllable structure types of other word classes in the language.

The Nouns

The nouns in Ikwere consist of monosyllables, disyllables, trisyllables and polysyllables. While the disyllabic and the trisyllabic nouns are in the majority followed by the polysyllabic ones, the monosyllabic nouns are in the minority. Examples of different structure of nouns in Ikwere are treated in sub-sections.

Monosyllable Nouns

The Ikwere language rarely records monosyllabic nouns. So far, two nouns consisting of one syllable (monosyllabic) are attested in the language. They exhibit CV structure pattern and are marked with a high (H) tone. Examples are given in (1a)- (1b):

1a) dʒi   'yam'
 b) ɲe   'person'

Disyllable Nouns

The majority of Ikwere nouns comprise two syllables known as disyllabic words. They exhibit the structures; CVCV, NCV, VCV, VCVC, CVCGV and VCGV. Examples are shown in the following:

CVCV Nouns

2a) mɔ́nɔ̂   'oil'
 b) mádɔ̃̀   'human being'
 c) mí↓ní   'water'

The examples in (2) illustrate that the C of the initial syllables of the CVCV structure is always a nasal. The tone pattern of the examples reveal a high fall (HF), high low (HL) and high down stepped high (H↓H).

NCV Nouns

3a) ḿ↓má   'beauty'   e) ǹdʒî   'darkness'
b) ǹdí   'husband'   f) ŋ́gwɔ̀   'palm wine tree'
c) ŋ́kɔ́   'sharpness'   g) ŋ́hễ   'thing'
d) ɲtʃî   'grass cutter'

The examples in (3) demonstrate that the syllabic nasal of the NCV structure agrees in the same place of articulation with the following consonant. The examples further show such tone patterns as high down stepped high (H↓H), low high (LH), high high (HH), low low (LL), low fall (LF), high low (HL) and high fall (HF). It is observed that these tone patterns reflect the number of tone patterns of nouns in the dialect.

VCVNouns

4a) ùbễ   'pear'   e) áhwɔ́   'belly/stomach'
b) édè   'cocoyam'   f) àl-ɪ   'land/floor'
c) íʃî̃   'head'   g) ɔ́rɔ̀   'house'
d) àzṹ   'back'

The examples in (4) show that the nouns comprising the VCV structure also reflect seven tone patterns as in the NCV nouns. It should be noted that Ikwere has eight noun tone classes, however, the number of the tone classes for each dialect, ranges from four to eight (Yul-Ifode and Alerechi 2016:7).

VCVC Nouns

5a) ìdìm   'cocoyam meal'
b) àɲìm   'tortoise'

The examples in (5a-b) reflect a LL tone pattern of the VCVC nouns. The examples also demonstrate that the coda is the bilabial nasal [m]. Thus whenever a coda occurs in any syllable, it is usually the bilabial nasal. The examples demonstrate that the structure of VCVC is rare in the language.

CVCGV Nouns

6) díbjà   'doctor'

Unlike in example (2) where the C of the initial CV syllable is [m], example (6) shows that it is the voiced alveolar plosive [d]. The CVCGV structure also is rare. Note that CGV syllable is always the final syllable whenever it is a constituent structure of a noun.

VCGV Nouns

7a) áhjá   'market'
b) ɔ́hjá   'bush'
c) úhjé   'red'
d) úhjɛ̀   'craftiness'
e) áswɛ̃́   'saliva'
f) ízwɛ̀̃   'gossip'

Notice that the C of the VCGV structure is either the glottal fricative [h] followed by the palatal (approximant) glide [j] or the voiced and voiceless alveolar fricatives [s] and [z] followed by the glide [w]. The examples also show that the VCGV nouns exhibit a high high (HH) and a high low (HL) tone patterns.

Trisyllable Nouns

The trisyllabic nouns (i.e., nouns comprising three syllables) are also many in the language. They exhibit such structures as NCVCV, VCVCV, CVNCV, VCVCGV and CVCVCVC. Examples are given in the following:

NCVCV nouns

8a) ǹtìtà   'mosquito'   d) ŋ̀gàdá̃   'chair'
b) ŋ̀kɪ́↓tá   'dog'   e) ŋ́ʷŋʷề rề   'wife'
c)m̀ɓʊ́rʊ́   'fruit'

The examples show that both identical and non-identical tones can combine to form tone patterns such as LLL, LH↓H, LHH, LLH, HLL in Ikwere.

VCVCV Nouns

9a) àɓɔ̀rɔ̀   'calabash'   c) éhɪ̀gʷè   'axe'
b) érùrú   'soldier ant'   d) ɔ̀tɪ́tɔ́ 'witness'

The examples in (9) demonstrate that the VCVCV nouns exhibit LLL, HLH, HLL and LHH tone patterns.

CVNCV Nouns

10) sá̃m̀bì   'key'

Example (10) shows a HLL tone pattern and that the CVNCV noun is rare in the language.

VCVCGV Nouns

11a) èsʊ́swé   'boil'
  b) áhɪ̃́hjá̃   'omen'

The VCVCGV nouns are few in number and the examples exhibit a LHH and HHH tone pattern.

CVCVCVC Nouns

12) ɓìgìdìm   'the sound of a falling object'

The CVCVCVC nouns are also rare and the example shows a LLL tone pattern. This may be represented in schema (2) to give a picture of the structure of a three-syllable noun.

2)   σ   σ   σ
        ∧   ∧   ∧
O RO R   O   R   ∧
      │ │   │ │   │ ∧
      │   │ │   │ │
      │   │   │ │

88
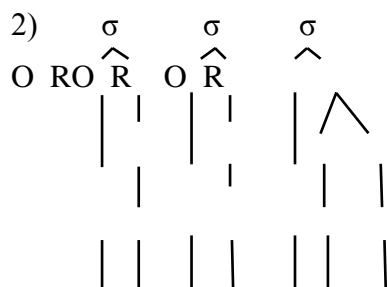
         N   N   N Co

      C V   C V   C V   C

ɓ   ì   g   ì   d   ì   m   'the sound of a falling object'

Polysyllabic Nouns

Polysyllabic Nouns are nouns containing more than three syllables. They are few in the language. Most of them comprise four syllables, while very few consist of five syllables. Those of four syllables exhibit the structures CVCVCVCV and VCVCVCV, while the five syllable ones show NCVCVCVCV structure. Consider the following examples in (13):

CVCVCVCV Nouns

13a) hʷúrúhʷèré   'wind'
   b) ɓákárárá   'all'

The examples in (13) reflect a HHLH and a HHHH tone pattern. The nouns are reduplicative in nature.

VCVCVCV Nouns

14a) ɔ̀tʃítʃírɪ   'darkness (night)'
   b) ígʷèrégʷû   'play'
   c) úgʷúrúgʷú   'dew'
   d) òbòkóró   'reception hall'
e) ɔ̀ɣírɪ̀ɣ á   'apricot'

The examples in (14) show different types of tonal patterns such as LHHH, HLHF, HHHH, LLHH, and LHLH. There is also some sort of reduplication of some part of the word.

NCVCVCVCV Nouns

15) m̀bì̀nìbí́nì̀   'cane'

The tone pattern of the five syllable noun identified in the language is LLLHL. A close look at the word further shows reduplication, implying that most of the polysyllabic nouns are derived through reduplication.

The verbs

The verbs are structured in different ways in the language. Unlike the nouns that may consist of up to five syllables, the verbs may comprise up to two syllables. While the constituent of the ones with one syllable are basically the root, the constituents of those comprising two syllables

are the root and -rV assertive/extensional suffix, or the root and another root. Thus there are monosyllabic verbs and disyllabic verbs in the language.

Monosyllabic verbs

The verb roots in Ikwere reflect two different structures in the imperative form. They are CV and CGV.

CV Verbs

The CV verbs exhibit tone patterns such as H, L and R in the language. Examples are given in (16):

16ai) rí   'eat'   bi) vɔ̀   'comb'   c) lě   'look'
ii) gõ   'sing'   ii) sʊ   'pound'
iii) sõ   'wash'   iii) hwʊ   'blow'
iv) ré   'sell'   iv) zà   'sweep'

While the examples in (13ai-iv) show verbs that bear a high tone and (13bi-iv) demonstrate those that are marked with a low tone, the example in (13c) reflects a rising tone pattern. Note that the verbs that bear a low tone are more in the language, followed by those that take a high tone but the dialect has only one example of the verb that carries a rising tone. However, a good number of verbs that bear a rising tone are attested in some other dialects of Ikwere.

CGV Verbs

The verbs that manifest CGV structure in Ikwere are few in number. The CGV structure verbs exhibit a high (H) and a low (L) tone as demonstrated in (17a) and (17b), respectively.

17ai) hjǎ̃   'bathe'/'stone'   bi)pjɔ̃̀   'sharpen'
   ii) pjǎ̃   'flog'   ii) bjà   'come'
   iii) swé   'grow'   iii) zwè   'rain(V)'

The examples in (17) show that the C of the CGV syllable type of verbs is either the glottal fricative [h], the voiced and voiceless alveolar fricatives or the voiced and voiceless bilabial plosives. Notice also that the CGV structure can be the only constituent of a verb unlike in nouns where it always follows another syllable.

Disyllabic Verbs

Disyllabic verbs exhibit CVCV and CVCGV structures.

CVCV Verbs

The verbs that exhibit the CVCV structure are complex and may consist of two independent roots or a root and the -rV assertive suffix, or a root and a verbal extension. The verb roots that combined with the assertive suffix rarely occur in isolation. See examples in (18):

18ai)kwù-gbú (beat kill)   'beat'   bi)gwè-ré   'take'

ii)ri-dʒe (climb go)   'climb up'   ii) vù-rú   'carry'
iii) tʃè-hwú(think loss)   'forget'   iii)rí-rí 'drink (liquid)'
ci) bã̀-ɲâ   **'enter towards the speaker'.**
ii) zà-mą́   'sweep clean'
iii) tʊ̃-rɪ́   'converse with interest'

The examples in (18a) show a complex root comprising two roots, while those in (18b) and (18c) respectively demonstrate the verb consisting of the assertive suffix and extensional suffixes. From the examples, it is observed that the verbs exhibit such tone patterns as LH, HH and LF.

CVCGV Verb

19) là-hjê   'return'

Example (19) seems to be the only case that is attested in the language and it has a low fall (LF) tone pattern.

Ikwere Syllable Structure

Considering the phonological structure of words in Ikwere, the syllable structure of Ikwere comprises the onset, which is optional, and the nucleus or peak, which is obligatory and occasionally a coda. It reveals the presence of the syllable types: V, N, CV, CVC and CGV in the language. They may be classified as simple (V, CV) and complex (N, CGV, CVC) syllable structures in the language. The simple ones are the clear univalent ones that are not doubtful, while the complex ones are those that are ambiguous and subject to more than one interpretation. Thus the syllable structure of Ikwere may be classified as either univalent (clear) or ambivalent (doubtful) syllables.

Univalent Syllable Structure

Earlier works like (Worukwo 1983, Azunda 1987 and Alerechi 1987, 2007) recognize the V and CV as the basic univalent syllable structure types in Ikwere. The peak of every syllable in Ikwere bears a tone. Thus tone is the determinant factor for identifying a syllable in the language.

a. The V syllable

The V syllable type, which is also attested in Igbo (Emenanjo 2015, 47) can stand as a word in Ikwere. This is typical with the second person singular pronoun **i/ɪ** and the third person singular pronoun **o/ɔ**. See example in schema (3):

3)   σ
          |
          R
          |
          N
          |
          V
          |
          O '3ʳᵈ person singular pronoun'
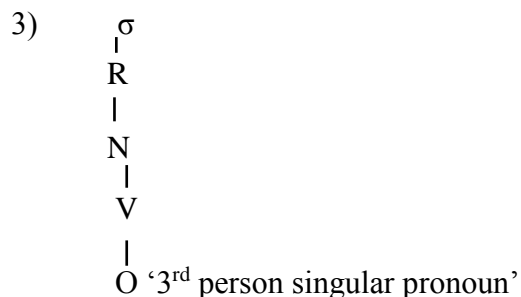
Examples (20) – (23) show the occurrence of the V syllable type in a sentence.

20) Ì   rì   édè
    2SG   eat cocoyam   'You ate cocoyam'

21) ì   là   ɔ́rɔ̀
  2SG go   home   'You went home'

22) ò   rì   édè
    3SG   eat cocoyam   'S/He ate cocoyam'

23) ɔ̀   laɔ́rɔ̀
    3SG go   home   'S/He went home'

Examples (20) – (23) demonstrate that the minimum size of a word in the language is V. Notice also that the shape of both the second and third person singular pronoun is subject to the expanded and non-expanded feature of the vowel of the verb root. It is [i] 'second person singular' or [o] 'third person singular', if the vowel of the verb root is an expanded vowel and **[ɪ]** 'second person singular' or **[ɔ]** 'third person singular', if the vowel of the verb root is non-expanded.

The V syllable type also occurs in word initial position. Note that each of the syllables is separated with a dot as demonstrated in examples (24a) – (24d):

24a) 'king'   b) 'in-law'   c) 'lightening'   d) 'broom'
    /é.zè/   /ɔ̀..gɔ̀./   /à.mὺ.mà/   /ɔ̀. zɪ̀.zà/
    V.CV   V.CVV CV.CV   V.CV.CV

The V syllable type can be attached to the verb root in morpheme final position. This is evident with the allomorphs **-è,-à,-ò,-ɔ̀** used to mark negation in the language as in (25):

25a) ò   rì   dʒí
   3SG eat   yam   'S/He ate the yam'

  b) ò rí-è dʒì
   3SG eat-NEG yam   'S/He does not eat yam'
  c) rí-è   'Does not eat'
    CV-V

The examples in (24) demonstrate that the V syllable type can occur in word initial position, while (25b-c) show its occurrence in morpheme final position with the negative marker. From examples (20) – (25), it is observed that Ikwere has both the V syllable type and V word type.

b. The CV Syllable

Ikwere also records CV, the preferred syllable type in most languages of the world. It consists of a consonant and a vowel. Just as Emenanjo (1978:2) observes in Igbo, the slot of V in a CV structure is always a vowel and not syllabic nasal even though it is a tone bearing unit. The examples in (24) demonstrate that the CV structure occurs after a V syllable type and can also be followed by either a word boundary or another CV type.

In addition to the preceding examples in (24), the CV syllable can also occur alone as a word. In fact, the majority of the verb roots in the language are of the CV syllable type as shown in the examples in (26) and (27) in Omnw and Akpo, respectively:

26a) 'loose' b) 'draw (ear)' c)'scratch d)'deny' e)'sell'
Omnw /tɔ̀/   /dɔ̀/   /kɔ̀/   /gɔ̀/   /re/
          CV   CV   CV   CV   CV
27a) 'loose'   b) 'draw (ear)'   c) 'scratch'   d) 'deny'
Akpo /tɔ̌/   /dɔ̌/   /kɔ̀/   /gɔ̌/
                CV   CV   CV   CV

Notice that in the Akpo dialect of Ikwere as exemplified in (27a), (27b) and (27d), some short vowels carry a gliding tone, which makes them doubtful or suspicious in the language. They may be interpreted as long vowels, but as correctly pointed out in the Ikwere orthography (Donwa-Ifode and Ekwulo 1989), there is no phonemic long vowel in the language.

The CV syllable type rarely occurs in isolation as nouns. The only examples found in the language are the words that mean 'yam' and the lexical item 'person' used to mark singular human nouns in examples in (1) renamed here as (28):

28a) dʒí 'yam'
bi) ɲé 'person'   bii) ɲea↓rṍ 'a worker'

Note that [**dʒ**] in example (28a), is a doubtful segment as it is subject to more than one interpretation. The status of [**dʒ**], is however, discussed later in this paper under doubtful sequences. The schema in (4) illustrates the structure of the CV syllable type.

4)
```
            σ
           /\
   O  R
      |    |
      |    N
      |    |
      C    V
      |    |
      r    í  'eat'
```
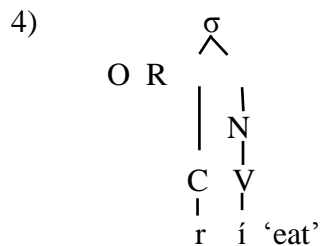
Ambivalent Syllable Structure

In addition to the preceding examples of V and CV syllable types; there are some cases, which can be interpreted in the language as V or CV as well as doubtful sequences that may be interpreted in different ways. They include Consonant-Vowel-Consonant (CVC) structure, Consonant-Glide-Vowel (CGV) structure, syllabic nasal (N) and sequences of two consonants or vowels in the language. They are treated in the sub-sections that follow.

a. Consonant-Vowel-Consonant (CVC) Syllable

Ikwere does not record any word with the univalent CVC structure. The CVC syllable is rare in the language and it always occurs in word final position. The coda is usually the bilabial nasal [m].Some of the examples in (5) and (12) are renamed here as (29):

29a) ìdìm   'cocoyam meal'
  b) àɲìm   'tortoise'
  c) ɓìgìdìm 'the sound of a falling object'
  d) ákâ̰m   'thatches'

The CVC syllable is an ambivalent case in the sense that what seems to be a CVC syllable type may sometimes be realized as a CVN (i.e., the [m]bears a tone mark, which makes it a syllabic nasal). An investigation into the dialects of Ikwere reveals, for examples, that *àhá̰↓ḿ* 'sun' in the Omuanwa dialect is realized as *àhá̰↓vé* in the Rumuekpne (Rmkp), Rundele (Rndl) and Odeegnu (Odgn) dialects of Ikwere and, ákâ̰m 'thatches' in Omuanwa is pronounced as ɔkâ̰i 'thatches' in Rmkp, Rndl and Akpo. Note that due to dialectal variation, the initial a- in ákâ̰m 'thatches' in Omuanwa alternates with ɔ- in ɔkâ̰i 'thatches' in initial position in Rmkp, Rndl and Akpo. Postulating the Rmkp, Rndl, Odgnand Akpo forms as the original, the word for 'sun' demonstrate a loss of the final vowel and the sonority of the voiced labiodental fricative [v] to a bilabial nasal [m]. Thus the tone on the final vowel survives and relinks to the bilabial nasal making it syllabic. Conversely, *ákâ̰m* 'thatches', a disyllabic word of V.CVC structure in Omuanwa is realized as ɔkâ̰i 'thatches', a trisyllabic word of V.CV.V in Rumuekpne, Rundele and Akpo. Unlike in the word for 'sun' where the tone survives, it is lost in the word for 'thatches'. See the interpretation of *aɪ*sequence in 4.3.2.4.3. The different scenario makes it difficult to determine whether the nasal [m] is syllabic or a consonant. There is therefore need for further investigation.

b. Consonant-Glide-Vowel (CGV) syllable

The language also has evidence of Consonant-Glide-Vowel (CGV) syllable as demonstrated in the phonological structure of Ikwere nouns and verbs. Orthographically, the CGV structure is written as CVV but transcribed as CGV. This implies that it is subject to more than one interpretation. Examples are given in (30) – (33):

30a) 'return'   b) 'red'   c) 'craftiness'
là.hjê (go return)   ú.hjé   ú.hjè
   CV.CGV   V.CGV   V.CGV

31a) 'blind (v)' b) 'come' c) 'flog' d) 'failed'   e) 'stone'/'bathe' f) 'market'
    Pjá   bjà   pjá̰   hjà   hjá̰   á.hjá
    CGV   CGV   CGV   CGV   CGV   V.CGV

32a) 'sharpen'   b) 'pull out'/ 'pursue'   c) 'suck'
   pjɔ   hjɔ́   mjɔ
   CGV   CGV   CGV

33a) 'boil (n)'   b) 'swallow'   c) 'rain(v)'
  /è.sú.swè /   /rwè /   zwè
  V.CV.CGV   CGV   CGV

The CGV structure is an ambivalent case, which may be interpreted as CCV as phonetically represented or CVV as, for instance, mjɔ 'suck', is represented orthographically as *miò* and *rwè* as *ruè* 'swallow'. If it is interpreted as CCV or CVV, it respectively means an introduction of non-existing consonant or vowel cluster in the language. Thus it cannot be interpreted as such as Ikwere has no cases of consonant and vowel clusters.

The CGV structure cannot also be analyzed as either labialized consonant and vowel or palatalized consonant and vowel. This is because CGV syllable structure can be differentiated from the labialized consonants when they are reduplicated. Examples are represented in (34):

34a) 'coming' b) 'swallowing'   c) 'talking /'speaking'   d) 'refusing '
/ɔ̀. bɪ̀.bjâ/   / ò.rù.rw**ê** /   / ò.kʷù.kʷ**û** /   /ɔ̀. gw�ò.gwâ /
    V.CV.CGV   V.CV.CGV   V.CV.CV   V.CV.CV

Examples (34a) and (34b) show that /bja/ is realized as [bɪ], and /rwe/ as [ru], in the reduplicated form, whereas /kʷu/ and / gʷa/ are respectively realized as [kʷu] and [gʷʊ] in the reduplicated form. Thus, while [b] and [r] are separated from the glides [j] and [w], respectively, in (a) and (b), [k] and [g] are not separated from [ʷ] in (c) and (d) in the reduplicated syllables.

We further demonstrate examples of contrast between the CGV syllable structures with the univalent CV syllable structure in (35):

35a)'blind(v)   b)'press (out)'   c)'swallow'   d)'dip'   e)'rain (v)'   f)'avoid'   /Pjá/   /**pɪ**/
    /rwè/   /rú/   /zwè/   /zè/
     CGV   CV   CGV   CV   CGV   CV

This analysis shows that the CGV syllable type is phonemic in the language. Schema (5) gives a clear picture of the CGV syllable type in Ikwere.

5)   σ
    / \
   O   R
   /\ |
  C G |
  | | N
  | | |
  p j ǎ́

Schema (5) shows a complex onset as it comprises both a consonant (C) and a glide (G). It is noted that the CGV structure in Ikwere is attested and interpreted differently in Igbo. Thus the CGV structure in Ikwere is interpreted as CVV in Igbo as in /**-bjá**/ becoming [-bjá] 'come' in fast speech (Emenanjo, 2015, 50).
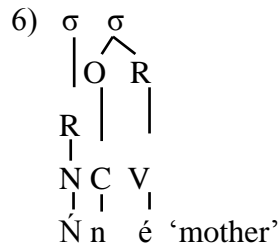
c. Syllabic Nasal (N)

A syllabic nasal is a nasal consonant, which acts as the center, or loudest part of a syllable (i.e., the peak) in the same way the vowel does (Yul-Ifode 2003, 587). A syllabic nasal functions as a vowel in Ikwere. It has a definite tone attached to it and, therefore, constitutes a syllable nucleus as vowels, giving the structure N. Thus, the V position of the syllable is filled by either a vowel or a syllabic nasal. The syllabic nasal /n/ has allophonic variants conditioned by a following

consonant, which marks the onset of another syllable. Examples are demonstrated in (36) in Ọmnw dialect:

36a) 'beauty'   b) 'mother'   c) 'sharpness'   d) 'key'
     /ḿ.↓má/   /ń.nè/   /**ŋ.kɔ́**/   /sɑ̂. ḿ.bì/
      N.CV   N.CV   N.CV   CV.N.CV

Schema (6) gives a picture of the N syllable type in the language.

6)   σ σ
     | ⋀
     |O R
    R | |
    | | |
    N C V
    | | |
    Ń n   é 'mother'

Syllabic nasal never occurs in final position. It is however observed that there are few exceptions, particularly words that have undergone certain phonological processes in the language. Evidence is seen in the word that means 'sun' as treated in section 4.3.2.1.

d. Doubtful sequences

The sequences such as the affricates and labialized segments represented with the diagraphs /ʧdʒkw gw ŋw hw/ are some of the ambiguous or doubtful sequences/segments in Ikwere because they are subject to more than one interpretation.

di. The Affricates /ʧ/ and /dʒ/

The affricates may be analyzed as:

    a) Allophones of stops or fricatives
    b) Single phonemes contrasting with stops
    c) A sequence of a stop and a fricative

The affricates cannot be analyzed as allophones of stops or fricatives because they contrast with stops and fricatives (i.e., their plain counterparts) in the language as shown in examples (37) – (38):

37a)'peck' (b) 'swear' c) 'pound' d) 'buy' e) 'loose' f) 'drag' g) 'forbid' h) 'step on'
   /tʊ̀ /   /dʊ̀/   /sʊ̀/   /zʊ̀/   /tɔ/   /dɔ/   /sɔ/   /zɔ/

38a) 'drive (away)'   b) 'ask'   c) 'become ugly'   d) 'seek'
      /ʧʊ́/   /dʒʊ́/   /dʒɔ/   /ʧɔ/

Examples (37) – (38) demonstrate that the affricates contrast with their plain counterparts. They cannot also be analyzed as sequences (i.e., different units) as consonant clusters do not exist and there is no evidence of sequence of a stop and a fricative in the language. The affricates in Ikwere are interpreted as single phonemes as in the examples in (39). Thus instead of interpreting

them as CC structure in Ikwere, they are analyzed as C structure in agreement with the univalent structure in the language.

39a) 'think'   b) 'wear (bead)'
   /tʃe/   /dʒe/
      CV   CV

dii. The Cw Sequences

According to Yul-Ifode (2014:82), the Cw sequences may be interpreted as labialized consonants or sequences of a consonant and the approximant /w/ as in /kw gw ŋw hw/. Thus in Ikwere, these sequences can be interpreted as:

a) Allophones of their plain counterparts
b) Phonemes in contrast with their plain counterparts or
c) Sequences of two phonemes

If, for instance, [kw] is analyzed as an allophone of its plain counterparts, it will be a wrong interpretation because it does not occur in complementary distribution with its plain counterparts neither can it be substituted with its plain counterparts without creating a difference in meaning. Similarly, it cannot be analyzed as a sequence of the phonemes /k/ and /w/, as doing so, will amount to an introduction of a consonant cluster, which does not exist in the language. It is, however, interpreted as a phoneme in contrast with its plain counterparts. Note that this interpretation applies to all the sequences listed above. Consider examples (40) – (41):

40a) /kʷà/   'clap'   41a) /kà/   'mark'
b) /gʷá/   'mix'   b) /gà/   'walk (about)'
c) /hʷà/   'squeeze'   c) /hà/   'pin'
d) /ŋʷà/   'take (from the soup)'   d) /ŋá/   'dry by fire'
e) /kʷʊ̀/   'beat'   e) /wà/   'cut (open)'
f) /gʷʊ̀/   'give (name)'   f) /wʊ̀/   'jump'
g) /hʷʊ̀/   'blow'
h) /ŋʷʊ̀/   'die'

To further prove that [kw] sequence is correctly interpreted as a unit, that is, a phoneme, observe that no constituent part of it is dropped in the process of reduplicating the verb root containing the sequence to derive gerunds as in (42):

42a) ò.kwù.kwû 'talking'   c) ɔ̀.hwʊ̀.hwa   'squeezing'
b) ɔ̀.gwʊ̀.gwâ 'refusing'   d) ɔ̀.ŋwʊ̀.ŋwa   'picking (from…)'

Following the preceding analysis of the CW sequences in Ikwere, they are therefore interpreted as phonemes in contrast with their plain counterparts and are phonemically written as labialized consonants in the language as in (43):

43a) 'bush fowl'   b) 'character' c) 'year'   d) 'monkey'
   /à.kʷà/   /à.gʷà/   /à.hʷà/   /è.ŋʷè/
   V.CV   V.CV   V.CV   V.CV

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diii. Vowel Sequences

There are no phonemic long vowels in Ikwere. However, a phonetic long vowel results when two vowels combine at a morpheme boundary or juncture. Note that the final vowel before the juncture is referred to as V1 and the initial vowel after the juncture is tagged V2 in this paper for easy reference. See examples in (44):

44a) isî# ɔ́rɔ̀   →   isɔ́ɔ́rɔ̀
    'head' 'house'   'that end of a house'

b) áhʷà # ìsẽ̂   →   áhʷìisẽ̂
  'year'   'five'   'five years'

c) rí   # é↓lú   →   rjéé↓lú
  climb   up   'climb up'

d) úwo #údʒidʒi   →   úwúúdʒidi
       cloth black   'black cloth'

Examples (44a) – (44d) demonstrate that whenever V1 and V2 are juxtaposed in a construction, V1 in anticipation of V2 assimilates into V2. In (44a), for instance, the final [i] in *isî* 'head' becomes the initial[ɔ] in*ɔ́rɔ̀* 'house' to yield *isɔ́ɔ́rɔ́* 'that end of a house'. Notice that in addition to the phonetic long vowel, there is also evidence of glide formation [j]as in *rjéé↓lú* 'climb up' before the identical vowel in (44c).The same process of assimilation, which results in phonetic long vowel, also applies to the vowel of the auxiliary verb and the prefix è-/à- attached to the verb root as shown in (45):

    45a)   i. / ò   dè   è-rí   ń↓rí/
           3SG FUT PR-eat food
          ii. /ò   dèèrí   ń↓rí/   'S/He will eat'.

    b)   i.   /à   dà   à-ɓá   á↓sɔ́/
          1PL   FUT   PR-run   run
        ii.   /à   dààɓá   á↓sɔ́/   'We shall run'

It is observed that these vowels at the juncture always assimilate in such a way that they are identical. There is also evidence of non-identical vowel sequence in the language as treated in the following sub-section.

The aɪ Sequence

The aɪvowel sequence needs special mention as it is not a result of the juxtaposition of vowels at the juncture or boundary of two words and also not identical as in examples (46a) - (46b). Consider examples in (46):

46a) 'we'   b) 'money'
    /à.ì/   /í.wá.í/
    V.V   V.CV.V

Having noted that vowel cluster does not exist in Ikwere, it, therefore, means that the VV and V.CV.V structures in (46a) and (46b) require an interpretation. Note also that the language does not record any diphthong. Considering that synchronically in Ikwere, the first person plural pronoun may be expressed differently as *àjì* used in isolation or for emphasis; *àì* in normal speech or *à* in fast speech, the author postulates that the word that means 'money' originally consisted of three syllables as in *í.wá.jí* with V.CV.CV structure. Just as the pronoun *àjì*'we' has reduced to *àì*in normal speech by a loss of the palatal central approximant /j/ of the final syllable, there is also a deletion of /j/ in *íwajɪ* 'money' due to ease of articulation. Instead of *íwajɪ*with V.CV.CV syllable structure, it is now *í.wá.í*with the syllable structure V.CV.V yielding a vowel cluster. Thus it is evident from the foregoing analysis that V(V) or CVV structure is a result of an ongoing process of deletion in the language. The stand of this paper is further strengthened by the word *ɔ́wa↓jɪ* 'money' in Ekpeye, a closely related neighbouring Igboid language spoken in Ahoada East LGA and Ahoada West LGA of Rivers State of Nigeria. No doubt, the Ikwere form is cognate with the Ekpeye form. While the glide [j] has survived in Ekpeye, it is lost in Ikwere. Thus while the synchronic form of Ikwere presents a V-CV-V syllable structure that of Ekpeye is V-CV-CV. This shows that vowel cluster is evolving in Ikwere.

Based on the foregoing discussion, the syllable structure of Ikwere reflects V, N, CV and CGV syllable types. It is summarized with the symbols such as:

> *T*
> (C (G)) *S* where

C	=	consonant e.g. /t/
G	=	glide e.g. /w//j/
T	=	tone e.g. / ` / or / ´ /
S	=	vowel or syllabic nasal e.g. /o/ or /m̩/
CS	=	consonant and vowel e.g. /ré/ 'sell'
CGS	=	consonant, glide and vowel e.g. /swè/ 'grow'

Summary of Findings

Generally, Ikwere operates an open syllable structure system. This study, however, shows that a CVC structure is possible in the language. When this occurs, the coda is the bilabial nasal [m]. Occasionally, the [m] bears a tone mark implying that it is syllabic. Further observation into the language proves that it is actually a CV structure in the Rmkp, Rndl and Odgn dialects of Ikwere, which has been modified and reduced to an N structure in the Omuanwa dialect. A typical example is *àhá̌↓ḿ* 'sun' in Omuanwa, which is realized as *àhá̌↓vé*, 'sun' in Rmkp, Rndl and Odgn dialects of Ikwere. The stand of this paper is that *↓vé* in *àhá̌↓vé*, 'sun' of Rundele has been modified and reduced to *↓ḿ* in *àhá̌↓ḿ* 'sun' of Omuanwa. Thus the Omuanwa form which ends with a syllabic nasal is an innovation (the result of a diachronic phonological process in the language). There is also evidence of a reduction of a CV structure of Rmkp, Rndl and Odgn to a [m] (i.e., a C) in Omuanwa, whose tone did not survive in the dialect. This therefore requires further investigation to determine what the real situation is. What is however certain is that changes are ongoing in the language. The implication of this is that after a long period of time, Ikwere may record many cases of syllabic nasal or CVC structure in word final position.

From the phonological structure of Ikwere words, it is obvious that the language has monosyllabic, disyllabic, trisyllabic and polysyllabic nouns; and monosyllabic and disyllabic verbs. The words exhibit different syllable types as V, N, CV and CGV. They combine differently with each other to form multisyllabic words. It is interesting to note that apart from the CV type which can consecutively replicate itself in a single word, the other syllable types cannot. The CV syllable type can occur independently and in all position of words (nouns and verbs) in the language, whereas the CGV type may occur alone as verbs and in final position of words (nouns). On the contrary, the V syllable type, though can be a word (2nd or 3rd person singular pronoun, which occurs in subject or object position), is also found in prefix or suffix position in words of the language. The N syllable type always occurs in initial position of words and occasionally in medial position except for the case of the word for 'sun' mentioned earlier.

There is no vowel cluster in Ikwere. The study, however, observed that vowel cluster may result at the boundary between two words, where the first word ends with a vowel and the second begins with another vowel. It is noted that vowel cluster is evolving in the language particularly with the *aɪ* sequence observed within the words that mean 'we' and 'money'. The paper observed that the *aɪ* sequence in áí 'we' or íwáí 'money' respectively originated from *àjì* 'we' or *íwájí* 'money', respectively. This analysis suggests a loss of the central approximant[j] in the two words, yielding a non-identical vowel cluster that does not exist in the language. While the deletion of [j] is ongoing as in 'we', it is complete in the word for 'money'. It is believed that if the disappearance of the original forms persists, giving way for the innovative forms to stabilize as part of the structure of the language, language change will be the result. By implication, this is one of ways in which language changes over a period of time.

Conclusion

It is attested in this paper that Ikwere records an open syllable structure with the V, N, CV and CGV syllable types as in most African languages particularly the Igboid related group such as Igbo (Emenanjo 2015:47). It presents the phonological structure of Ikwere nouns and verbs as representative samples of the structure of words in the language. From the structure of nouns, it is revealed that a CVC syllable type, in which the coda is always a bilabial nasal, is possible in the language. Its status is still questionable and subject to further investigation as the bilabial nasal is sometimes realized as syllabic. While the univalent V and CV structures are recognized as the clear syllable types, the ambivalent cases such as N and CGV also have been interpreted as syllable types of the language. The recognition of CGV structure as a syllable type in Ikwere is different from its interpretation in Igbo. Using the word that means 'come' in Igbo, Emenanjo (2015:50) recognizes /-bɪa/ as the phonemic form, which is realized as [-bjá] 'come' in fast speech. This indicates that Igbo records the Ikwere CGV structure as CVV. Sequences of consonants such as the affricates [tʃdʒ] and the labialized consonants [kʷgʷhʷŋʷ] that present some form of clusters are analyzed and interpreted as single phonemic units. On the other hand, the paper suggests that the *aɪ* vowel sequence resulted from a loss of the central approximant[j] between two syllables, yielding a non-identical vowel cluster that does not exist in the language. Thus *íwáí* 'money', for example, is derived from *íwájí* 'money'. Similarly, identical vowel sequence found at the juncture or boundary of two word, which presents a phonetic long vowel is a result of vowel assimilation in speech. The identical vowel so produced is further reduced to a single vowel by deletion in fast speech, thereby, altering the syllable structure of words in the language. These demonstrate that vowel cluster is evolving in the language particularly with the

aɪ sequence as well as syllable reduction in fast speech in the language. It is believed that this study will not only provide an insight into the combination of sounds in the Ikwere, but will also form the basis of a comparative study of the syllable structure of Ikwere and related and non-related languages.

Recommendations

Based on the findings from this work, the following recommendations are necessary:

1. Further linguistic investigation is required particularly to determine the status of the bilabial nasal in coda position in some words in the language.

2. It is evident that insight from other languages can help to elucidate some ambivalent cases in some languages, thus effort should be made to encourage more researches other Nigerian languages.

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