



The Phonology of Ẹdo Ideophones

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ABSTRACT

This study addresses the inadequately documented phonological behaviour of ideophones in Ẹdo, an Ẹdoid language of Southern Nigeria, where these forms are often noted but lack detailed analysis. It aims to provide a systematic account of the segmental and suprasegmental features, as well as the phonological processes, that characterize Ẹdo ideophones. Data were obtained through oral interviews with competent native speakers, and the analysis is situated within the framework of basic linguistic theory allowing for a direct description of attested forms in natural speech. Structurally, ideophones exhibit a wider syllable range, extending from disyllabic to predominantly polysyllabic forms, thereby contrasting with the typically shorter non-ideophonic lexicon. While Ẹdo generally restricts consonant clustering, limited cluster-like sequences arise through glide formation in ideophonic forms. Therefore, this study contributes to a clearer understanding of the phonological structure of Ẹdo ideophones and underscore their structural markedness within the language.

Keywords: ideophones, edo language, nasalization, glide formation.

Introduction

Èdo phonology is well-understood at a general level, yet the specific phonological behaviour of its ideophones has received little attention. Existing studies have examined other grammatical aspects of these forms, but have paid limited attention to their phonological structure or internal processes. This oversight leaves a significant gap in our understanding of how these marked forms operate within the language's phonological system. The Èdo language is one of the Èdoid languages (Elugbe, 1989) spoken in the southern part of Nigeria and in seven local government areas of Èdo south senatorial district of Èdo State. The Èdo language is primarily characterized by linguistic homogeneity; nevertheless, dialectal variations are observed among specific related communities within some of the seven Local Government Areas where it is spoken. These variations include dialects such as Ọza Nogogo, Ọza Aibiokunla, Ehọ, Ọvia, Iyekorhionmwọ, and others. While these dialects are subordinate to the standard form, they remain mutually intelligible (Ọmọrẹgbẹ, 2012).

According to Dingemanse (2019), ideophones are 'a member of an open lexical class of marked words that depict sensory imagery.' Dingemanse's definition characterizes ideophones as an open lexical class, highlighting their productivity and the addition of new expressive terms. His emphasis on sensory imagery explains that ideophones do not merely describe an event; they embody it, transforming sensory elements into an immediate experience. Eyakndue and Nwogu (2024) note that the notion of the ideophone rests on its distinctive structural properties, particularly at the levels of phonology and prosody, which set it apart from other word classes. They argue that its form is closely tied to the broader word structure of the language. They further observe that ideophones are grounded in everyday human experience, encoding events and sensations in a vivid and expressive manner. In this sense, ideophones function as a sociolinguistic resource that foregrounds the phonological material of the language, allowing its regular phonemes to be perceived with heightened sensory effect.

Research on ideophones as noted by Marsault, et al. (2024), has spanned over a century, predating the popularization of the term by Doke in 1935. During the 20th century, there has been an increasing number of descriptive studies focusing on ideophones within

specific languages, linguistic families, and geographical linguistic areas. Although the term "ideophone" originated within the Africanist tradition and has become the most commonly accepted terminology, in Japan, the term is referred to as "mimetics" (Hirose, 1981), while South Asian linguistics tends to use "expressives" (Diffloth, 1976 and Badenoch & Choksi, 2021). According to Dingemanse (2009), "Ideophones are marked words that vividly depict sensory events." This definition captures the essential elements needed for a cross-linguistic account while avoiding assumptions about grammatical status or sound symbolism, both of which differ widely across languages. The most important aspects are that ideophones are 'words' with specifiable meanings, that they are 'marked' in several respects, that by performing ('vividly') rather than describing they create an image ('depict') of an event and that the depicted events belong to a broad spectrum of sensory impressions (Dingemanse 2009). Crystal (2008) notes that the term 'ideophones' is sometimes applied in linguistics and phonetics to describe any vivid sound-based representation of an idea, as seen in onomatopoeia. He asserts that within Bantu studies, however, ideophones specifically denotes a distinct word class of sound-symbolic items, which are often reinforced by extralinguistic or mimetic features such as whistling or clapping.

Across languages, ideophones display characteristics that set them apart from other lexical classes, regardless of their grammatical status in a given language. Common cross-linguistic features include: their depictive nature (conveying meanings expressively rather than descriptively), iconicity (a close link between form and meaning), and semantics rooted in sensory and perceptuomotor domains such as sound, movement, temporal processes, visual and non-visual sensations, and mental states. They are also strongly associated with orality and tend to appear in informal, expressive, and dramatized written genres like personal correspondence, narratives, comics, and poetry. Further traits include their performative quality and frequent integration with gestures (Voeltz and Kilian-Hatz, 2001; Dingemanse, 2012; Lahti, et al, 2014). From a phonological standpoint, Childs (1994) observes that ideophones are characterized by distinctive phonological features that set them apart from the standard phonology of a language. Similarly, Dixon (2012) notes that ideophones typically exhibit a unique phonological system distinct from other lexical classes within a language.

Bodomo (2006) argues that ideophones form a phonologically distinct category, separate from other words in the language. While ideophones share some phonological elements with other words, they possess unique phonological properties that contribute to their markedness, distinguishing them from other lexical groups. Franck (2014) further points out that ideophones may incorporate phonemes not found in the regular phonology of a language but present in human languages more broadly. Mpahnde (2017) claims that the phonology of ideophones can be defined by analyzing features such as tone, vowel nasality, vowel length, and consonantal contrasts, that have been identified across African languages especially with the Bantu family. He notes that these phonological features function to enhance the speaker's ability to vividly and expressively evoke the sensory and perceptual qualities of objects and events.

While ideophones are cross-linguistically recognized as "marked" due to their deviation from ordinary lexical patterns, the specific expression of this distinctiveness is highly language-dependent (Dingemanse, 2012). This distinctiveness is noted across diverse systems, from the "very striking" features of Yoruba (Vidal, 1852) to the "structural peculiarities" found in Semelai, Kambera, Hausa, and Hup (Kruspe, 2004; Klamer, 2002; Newman, 1968; Epps, 2005). These descriptions suggest a global pattern where ideophones utilize specialized length, tone, or stress to achieve a distinct phonological profile. According to Smoll (2014), the phoneme inventories of ideophones generally fall into two typological categories: (a) Languages where ideophones utilize the same phoneme inventory as the general lexicon, such as Didinga (de Jong, 2001) and (b) Languages where ideophones contain unique segments absent from ordinary words. A notable example is Yir-Yoront, where ideophones employ fricatives and bilabial trills such as the [f] in *fffft* (blowing a fire) and the [β] in *βββββ* (handcuffs falling), that do not occur elsewhere in the language (Alpher, 1994). The contrast between these two types prompts a key question for Edo: is ideophonic markedness achieved through the use of distinct phonemic segments, or through prosodic variation and constraints operating within the existing phonological inventory?

Consistent with the broader pattern of ideophones exhibiting distinct structural characteristics compared to other lexical categories, some languages demonstrate that ideophones also diverge from the rest of the lexicon in their suprasegmental features. Tone is a key area where such differences are evident. These tonal peculiarities may manifest as specific frequencies or distinctive tonal patterns. For instance, in Setswana (a Bantoid language), ideophones exhibit both types of tonal distinctiveness: certain tonal sequences occur with unusually high frequency, and while downstep typically applies to all sentences, this rule is notably violated when an ideophone appears at the sentence's end (Creissels, 2001). In other languages, the tones associated with ideophones are not fixed but are manipulated to modulate expressive meaning. In Ewe, for example, the ideophone *kũũ* pronounced with a low tone conveys a bad smell, but when articulated with an extra-low tone, it intensifies the meaning to indicate an extremely unpleasant odor (Ameka, 2001, cited in Smoll, 2014).

Rose (2024) observes that the phonemic inventory of Teko ideophones closely resembles that of the general lexicon and grammatical structures. However, two segments, [ʃ] and [f], fall outside the regular inventory and occur only in isolated ideophonic forms, namely /tiʃ/ 'grease dripping on fire' and /fu ~ pu/ 'blowing'. Rose further notes distributional restrictions within the consonant system: /g/, /j/, and /r/ do not occur in root-initial position, while /g/ is also absent root-internally. Root-final position is typically occupied by non-continuants, with rare exceptions such as the occurrence of /h/ in word-final position in forms like /puh/ 'shaman blowing' (Rose, 2024). Similarly, Abubakari (2017) examines the phonetic and phonological properties of ideophones in Kusaal, highlighting recurring syllable patterns such as CV (*kí* 'quietly'), CVN: (*limmm* 'dim, darkish'), CVCVN: (*filímm-filímm* 'dishonest'), CVVN: (*fiánn-fiánn* 'whizz'), VCVCV (*ilíilíilí* 'rain drops'), CVNR (*pánn-pánn* 'crackle'), CVCV (*púra-púra* 'clap'), CVR: (*fárr-fárr* 'very white'), and CVC (*tát-tát-tát* 'sound of walking'). He argues that while the syllable structure of Kusaal ideophones is predictable, these forms systematically violate the language's phonotactic constraints. This resistance is attributed to the mimetic nature of the words, where any structural alteration would distort the accurate representation of the target sound the ideophone is intended to simulate (Abubakari, 2017).

Ideophones are utterances whose forms and sound patterns are closely related to their meanings, challenging presumptions about language's arbitrary nature. (Agyekum, 2008). He notes that they function in situations where the language form and the event being conveyed converge. These expressions rely on cognitive functions, sensory perceptions, and culturally formed conceptual frameworks that connect meaning to sound. The speaker's inventive use of sound and meaning, as understood by the audience's cultural experiences, is what gives them their communicative power. The present study focuses on the phonological analysis of Edo ideophones, specifically examining their segmental and suprasegmental characteristics and the phonological processes that shape them. The study seeks to demonstrate how Edo ideophones both align with and depart from the broader phonological patterns of the language. Consequently, the research addresses the following questions:

1. What are the segmental and suprasegmental features of Edo ideophones, including their tone and syllable structure?
2. What phonotactic patterns and constraints distinguish Edo ideophones from the broader phonological system of the language?

Methods

This study adopts a qualitative, descriptive-analytical approach to examine the phonology of Edo ideophones, focusing on their segmental and suprasegmental features, phonotactic patterns, and phonological processes. Using a purposive sampling strategy, ten fluent native Edo speakers were selected: five older speakers (aged 50+) to capture traditional forms, and five younger speakers (aged 20–40) to identify potential generational variation. Data were elicited through a combination of structured wordlists, visual stimuli, and narrative prompts targeting various sensory domains, supplemented by recordings of spontaneous conversations and folklore to capture natural discourse. To ensure a representative corpus, only ideophones consistently recognized by multiple speakers were selected for analysis, thereby minimizing the inclusion of idiosyncratic or marginal forms. All recordings were made using high-quality digital devices with participant consent and subsequently transcribed by the researcher using the International Phonetic Alphabet (IPA). The study drew on 200

ideophones collected from elicitation tasks and spontaneous speech. Of these, 88 items were retained for analysis, selected on the criteria of consistent usage across multiple speakers and transparent phonological structure. The resulting dataset encompasses ideophones across major sensory domains, providing a representative basis for phonological analysis.

To ensure reliability, two trained linguists proficient in Edo phonology independently cross-checked the transcriptions and elicited forms for accuracy. The subsequent analysis involved a systematic examination of consonant and vowel distributions, tonal patterns, syllable structures, and processes such as glide formation and nasalization. Validity was maintained by aligning phonological features from elicited lists with those occurring in natural speech, ensuring that the findings reflect authentic usage rather than constructs of the elicitation method. This rigorous procedure provides a transparent account of the phonological structure of Edo ideophones across both traditional and contemporary contexts. The study adhered to established linguistic fieldwork ethics by securing informed consent and ensuring participant anonymity. While formal institutional ethical approval was not required at the time of the study, all data-handling procedures prioritized confidentiality and the protection of participant identities.

Result and Discussion

1. The Phonology of Edo Ideophones

Ideophones in Edo draw on the full consonant and vowel inventory of the language, showing no exclusive phonemes of their own; in other words, their sound segments are the same ones that structure ordinary lexical items, even though their patterns of combination may differ. At the suprasegmental level, ideophones in Edo are characterized by tonal and nasal features, which contribute to their expressive and mimetic quality; these features interact systematically with the segmental structure, enhancing the phonological distinctiveness of ideophones within the language. Phonotactically, Edo ideophones tend to form longer rhythmic sequences, which makes polysyllabicity their dominant structural pattern; this contrasts with the shorter shapes typical of many non-ideophonic words, and only a small subset of ideophones surface as disyllables.

2. Phonemic Inventory

In the description of speech sounds, efforts are made to account for as many of their distinctive features as possible. The number of phonemes in a language varies across human sound systems. Omozuwa (1990, 2010) reports that Ẹdo comprises thirty-nine (39) phonemes, consisting of twelve (12) vowels and twenty-seven (27) consonants. Ideophones in Ẹdo utilize the same phonemic inventory as non-ideophonic words. The speech sounds employed in Ẹdo ideophones are as follows:

3. Consonants

The following are consonants that are observed to occur in the data collected.

- 1a. /p/ as in [pìrìpìrì] 'unclear; blurred; confused'
- b. /b/ as in [bìsìbìsì] 'reddish brown, like the ordinary kind of house-mud'
- c. /t/ as in [tètètètè] 'describes the brightness/whiteness of something'
- d. /d/ as in [dúdúdúdú] 'very black'
- e. /k/ as in [kálókáló] 'describes profound darkness'
- f. /g/ as in [gélété] 'extraordinary high'
- g. /kp/ as in [kpàkpàkpà] 'describes the friskiness of an excited person or animal'
- h. /gb/ as in [gbìyìdì] 'describes the sound of long, but not heavy objects'
- i. /m/ as in [málómáló] 'twisted, rumped; roughly, untidily'
- j. /n/ as in [nèkpènnèkpè] 'gradually; cautiously'
- k. /ŋw/ as in [ŋwànnàŋwànnà] 'describes anything with a sheen; flashy'
- l. /ɲ/ as in [ɲàǵàɲàǵà] 'describes something that is disfigured or ragged'
- m. /β/ as in [βìrìβìrì] '(usually occurs with owiẹ) describes early dawn'
- n. /f/ as in [fjóyófjóyó] 'very tall and thin'
- o. /s/ as in [sùkùsùkù] 'unpleasantly twisted, such as a frown or a grimace'
- p. /z/ as in [zùzùzù] 'describes offensive odours'
- q. /x/ as in [xìrìxìrì] 'rushing, in a hurry, hurriedly (of people only)'
- r. /ɣ/ as in [ɣèyèyè] (with ọmaẹn) very old; unsteady; insecurely
- s. /h/ as in [hùhùhù] 'describes a bad smell, like that of a rat'
- t. /l/ as in [lìkpàlìkpà] 'rough, pimply (of the body)'

- u. /ɹ/ as in [ɹáɹóɹáɹó] 'describes the shades of colour between light green and light blue
- v. /ɹ/ as in [ɹáɹáɹá] '(of sound) very loudly
- w. /r/ as in [rjèrjèrjè] 'yellow (not of fire)'
- x. /w/ as in [wèlèwèlè] 'describes something that rotates freely'
- y. /j/ as in [jòkòjòkò] 'describes the clumsy movement of very fat fowls'
- z. /v/ as in [vàvavàvavà] 'describes the flight of herons, hornbills and of bats'

The consonants listed above form part of the consonant system of the Edo language. The examples indicate that the phoneme /m̥/ does not occur word-initially in ideophones but appears intervocalically, as in:

2a. [dím̥ídím̥í] 'very deep but not narrow'

Across the elicited ideophones, the labiodental nasal /m̥/ occurs only in intervocalic position, as shown in example (2a). To determine whether this distribution reflects a general property of Edo phonology or a pattern specific to ideophones, the non-ideophonic lexicon was examined. Lexical items elicited from ordinary Edo words reveal that /m̥/ does occur word-initially, as illustrated in the following examples.

2b i. mwàmwá [m̥ám̥á] 'arrange'

i. mwèé [m̥ě] 'have'

ii. mwé [m̥ě] 'me, my'

iii. kìn mwí [k̥m̥í] 'hit hard'

iv. kpònmwé [kp̥òm̥é] 'thank'

This contrast demonstrates that the restriction against word-initial /m̥/ is not a general phonotactic rule in Edo, but rather a constraint unique to ideophones. This distinction highlights a phonological specialization within the ideophonic subclass, where certain segments are subject to distributional restrictions that do not govern the wider lexicon.

These data also show that ideophones generally begin with consonants. An exception is found in nominalized ideophones, which carry a nominal prefix yet retain ideophonic features such as reduplication, illustrated in the following examples:

3. a. èsòghósóghó 'baby's rattle (toy)'

- b. èmùnèmùnè 'fire-fly'
- c. èpiánpíán 'the piping hornbill (bird)'
- d. ènwànwànwà 'flash of lightning or reflected sun in a mirror'
- e. ètèbètébé 'a very small insect running on the water surface'
- f. èkpélékpélé 'mosquito larva'
- g. èsùghùsùghù 'owl'

4. Vowels

The following vowels are attested in Èdo ideophonic forms.

- 4a. /i/ as in [dímí́dímí́] 'very deep but not narrow'
- b. /e/ as in [gbúkégbúké] 'describes a revolting smell'
- c. /ɛ/ as in [sèsèsè] 'describes something is either very clean or very white'
- d. /a/ as in [bwàbwà] 'describes the walk of a big man'
- e. /ɔ/ as in [bòbòbò] 'describes a gentle drumming'
- f. /o/ as in [gjògjògjò] 'very hot, of boiling water; bright red'
- g. /u/ as in [gúlúgúlú] 'very deep'
- h. /ɪ/ as in [rírírí] '(of time) continuously, non-stop'
- i. /ě/ as in [sjěěě] 'describes clarity of light or flame; of water) clean and pure'
- j. /ã/ as in [rǎǎǎ] '(of sound) very loudly'
- k. /ɔ̃/ as in [sǎ̃sǎ̃sǎ̃] 'describes something/place that is disgusting'
- l. /ũ/ as in [hũhũhũ] 'describes an indistinct muttering or grumbling'

The oral and nasal vowels presented above constitute elements of the broader vowel system of the language. As observed in non-ideophonic forms, the vowels /e/ and /o/ occur only orally and do not exhibit nasal counterparts. The data further show that Èdo ideophones consistently end in vowels, whether oral or nasal, rather than in consonants, reflecting a stable phonotactic pattern. The patterns indicate that vowel endings help create the rhythmic and acoustic profile typical of ideophones. The availability of both oral and nasal vowels provides additional contrasts that strengthen their expressive function. In general, the vowel patterns found in ideophones follow the language's phonemic system while also reinforcing the distinctive phonological character associated with ideophonic forms.

The data indicate that phonemes in Èdo ideophones occur in ordered sequences. These forms display repeated vowels and consonants, as well as alternating patterns of non-identical segments. The following examples illustrate a $V_1-V_1-V_1-V_1$ structure

- 5a. làghàlàghà [làḡlàḡà] 'loose'
- b. pìrhìpìrhì [pìṛpìṛì] 'unclear; blurred; confused'
- c. sóghósóghó [sóḡhósóḡhó] 'describes a rattling sound'
- d. réghéréghé [réḡhéréḡhé] 'very high; far beyond reach. (of eyes): deep-set'

A similar pattern is found with consonants, producing a $C_1-C_1-C_1$ sequence

- 6a. ghèghèghè [ḡḡḡḡḡḡ] 'unsteady; insecurely'
- b. gbìgbìgbì [ḡḡḡḡḡḡ] 'describes a strong wind or a tornado; the rushing of a river and knocking at the door'
- c. vbàvbàvbà [βàβàβà] 'describes bulging eyes'
- d. wòwòwò [wòwòwò] 'describes brightly-burning fire or the taste of peppery hot soup'

Alternating vowel patterns appear in $V_1-V_2-V_1-V_2$ structures

- 7a. rághórághó [ráḡó.ráḡó] 'describes the shades of colour between light green and light blue'
- b. kpànnòkpànnò [kpànṇṇkpànṇ] 'rough'
- c. mìtàn mìtàn [mìṭṭàn.mìṭṭàn] 'too small for one's age; poor-looking; describes lazy way of walking'
- d. tẹkpútẹkpú [tẹkpútẹkpú] 'describes shortness'

A parallel pattern with consonants yields $C_1-C_2-C_1-C_2$ sequences

- 8a. vbùyévbùyé [βùjéβùjé] 'weakly, indolently; weak, lazy'
- b. tínniétínniè [tínjṛtínjṛ] 'very tiny; minute'
- c. sígénsígén [sígṛsígṛ] 'very lean'
- d. rẹghẹrẹghẹ [rḡḡḡḡḡḡ] '(of colour) shades ranging from pale pink to light shades of red and orange; (of temperature) warm, lukewarm'

Other vowel forms show $V_1-V_1-V_1$ sequence

- 9a. sòsòsò [sòsòsò] 'excessively foamy (e.g. soapy water)
- b. sèlèkè [sèlèkè] 'describes a dirty or filthy object or sight; of ovbiogue (poor person) the level of complete destitution'
- c. pánpánpán [pápápá] 'describes a quality of noise such as the blast of an automobile horn'
- d. wẹ́wẹ́wẹ́ [wéwéwé] '(of speech or talk) whisper'

Ideophones in Èdo also exhibit C₁-C₂-C₃ sequences

- 10a. \gbàghàdà [gbàghàdà] 'describes the fall of something having extremities, e.g. the human body when thrown down in a wrestling contest'
- b. gbálázá [gbálázá] 'wide, expansive'
- c. gélété [gélété] 'extraordinary high'
- d. fẹ́ghéré [fẹ́ghéré] 'very light'

In sequences like 5, the same vowel recurs across all syllables. In 7, V₁ repeats in the penultimate syllable while V₂ repeats in the final, producing an alternating vowel pattern. The forms in 9 show uniform vowel recurrence across syllables. In 6, the same consonant appears in each syllable, forming C₁-C₁-C₁. In 10, C₁, C₂, and C₃ are distinct; where labial stops occupy C₁, the C₃ position is voiced and C₂ consistently functions as a fricative. In the set in 8, C₁ recurs in the penultimate syllable, while C₂ is repeated in the final syllable.

5. Tonal Structure and Functional Patterns in Èdo Ideophones

Ideophones in Èdo display a high level of tonal uniformity. Unlike non-ideophonic lexical items, which may accommodate mixed tone patterns, the ideophonic forms tend to maintain a single tonal register across the entire string. This uniformity is not incidental; it contributes to their expressive force and perceptual cohesion. The following examples illustrate these tonal patterns:

6. Sequence of High Tones: The following examples have sequences of high tones

- 11a. sóghósóghó [sóghósóghó] 'describes a rattling sound'
- b. dúdúdú [dúdúdú] 'very black'
- c. fẹ́fẹ́fẹ́ [fẹ́fẹ́fẹ́] 'entirely, completely, altogether'
- d. gégégé [gégégé] 'very high (of a hill); quantity'

- e. kókókó [kókókó] 'describes something that is very solid and firm;
describes something that is very dry and crisp'

7. Sequence of Low Tones: The following examples have sequences of low tones

- 12a. líkpàlíkpà [líkpàlíkpà] 'rough, pimply (of the body)
b. mùkùmùkù [mùkùmùkù] 'describes anger'
c. sìlàsìlà [sìlàsìlà] 'describes something untidy or disorderly'
d. guèzèguèzè [gwèzègwèzè] 'describes degree: completely, totally, entirely'
e. zàghàzàghà [zàghàzàghà] 'describes things that are disorderly and unkempt'

Example 11a–e consists of ideophones formed with uniform high tones. Each syllable carries a consistent high pitch, producing a sharp and rhythmic contour. Items such as 'sóghósóghó' and 'kókókó' show that ideophones with high tones convey clarity, firmness, brightness, or extremity. The tonal height reinforces the semantic value of the forms, creating an auditory impression that mirrors the quality described, such as rattling or crisp solidity.

Also, example 12a–e exhibits uniform low tones. Each syllable remains anchored at a low pitch, resulting in a slower and heavier sound flow. Ideophones like 'mùkùmùkù' and 'zàghàzàghà' rely on this tonal pattern to encode unpleasant textures, disorderliness, or emotional heaviness. The low tone contributes directly to meaning by mimetically signalling weight, sluggishness, or roughness.

In both tone classes, reduplication and tonal stability operate together. The tonal uniformity is not incidental but functions as a central cue to interpretation, mapping acoustic structure onto sensory experience. A search of the ideophone corpus revealed that there are no minimal tonal pairs. There are no two ideophones that share identical segmental and syllable structures while differing only in tones. This absence contrasts sharply with the general language lexicon, where tonal minimal pairs are common (e.g., áwẹ 'large bird with a tuft on its head' vs àwẹ 'fast').

8. The Syllable Structure of Èdo Ideophones

The syllable system of a language is the arrangement of consonants and vowels into the smallest units that form a speech pulse. Ideophones in Èdo differ from non-ideophonic forms, which are mostly mono-, di-, or trisyllabic. Ideophones tend to be polysyllabic, and this

structural expansion distinguishes them from regular lexical items. The examples below illustrate the syllable patterns found in Èdo ideophones. The examples below illustrate the syllable sequences that are found in Èdo ideophones.

CVCV

- 13a. gbìdì [gbìdì] 'describes the sound of something heavy falling into water; silent, mute'
- b. gbàdà [gbàdà] 'wide, broad'
- c. gùkàn [gùkǎ] 'sitting clumsily, as if collapsing'

CVVCVV

- 14a. zàizài [zàizài] 'quickly, briskly'
- b. gbàìgbài [gbàìgbài] 'describes a manner of walking; with confident strides'; 'to open and close repeatedly'
- c. gàìgài [gàìgài] 'describes a manner of walk (a measured walk) with wide steps'
- d. lẹ̀úléú [lẹ̀úléú] 'large-sized, huge'

CVCVCV

- 15a. bọ̀bọ̀bọ̀ [bọ̀bọ̀bọ̀] 'describes a gentle drumming'
- b. gbìghìdì [gbìghìdì] 'describes the sound of long, but not heavy objects'
- c. ghèghèghè [ghèghèghè] 'unsteady; insecurely'
- d. nwọ̀nwọ̀nwọ̀ [nwọ̀nwọ̀nwọ̀] 'describes a greasy look; yellowish (like half-withered leaves)'

CVVCVCVCV

- 16a. bẹ̀tẹ̀bẹ̀tẹ̀ [bẹ̀tẹ̀bẹ̀tẹ̀] 'very large, expansive'
- b. gìdìgìdì [gìdìgìdì] 'describes size (big; of yams); blazing (sending flames up)'
- c. lìkpàlìkpà [lìkpàlìkpà] 'rough, pimply (of the body)'
- d. pìrìpìrìhì [pìrìpìrìhì] 'unclear; blurred; confused'

CVCVCVCVCVCV

- 17a. góbàgòbàgóbá [góbàgòbàgóbá] 'describes a manner of walking; the walk of a cripple whose feet are bent to one side'
- b. ghéréghéréghéré [ɣɛ́ɛɣɛ́ɛɣɛ́ɛ] 'describes a manner of operation; unsteadily as though unsure of a goal or target'
- c. nyéghénnyéghénnyéghén [ɲɛ́ɣɛ́ɲɛ́ɣɛ́ɲɛ́ɣɛ́] 'curled like the hair of an African and also thin'
- d. sólógánsólógán [sólógánsólógá] 'describes walking with one sore foot, so that it makes no full footprint'

10. The Phonetic Syllable Structure of Èdo Ideophones

The phonetic syllable structure of Èdo ideophones rests on stable templates in which consonant clusters precede vowel nuclei to encode sensory meaning. The CCV onset derives from underlying /CjV/ or /CwV/ configurations, where a high vowel (/i/ or /u/) is converted into a glide, producing [CjV] or [CwV]; this glide functions as the second consonant in the cluster. The Èdo Ideophones typically employ these glide-initial patterns (C1C2V), repeated through reduplication or triplication to intensify their expressive force.

C₁C₂VC₁C₂V

- 18a. buàbuà [bwàbwà] 'describes the walk of a big man'
- b. lùèlùè [lwèlwè] 'describes the movement made by the bird'
- c. piànpían [pjàpjà] 'describes the sound of a whip'
- d. fuènfuèn [fwèfwè] 'very weak (almost lifeless); fast, repeatedly'

C₁C₂VC₁C₂VC₁C₂V

- 19a. fiènfìènfìèn [fjɛ́fjɛ́fjɛ́] 'the squeaking noise of house mice (òkhàn); describes a sharp sucking noise e.g. of a bone marrow'
- b. hiènhìènhìèn [hjɛ́hjɛ́hjɛ́] 'describes a high and faint voice'
- c. kuàkuàkuà [kwàkwàkwà] 'describes a feel of laughter'
- d. viènvìènvìèn [vjɛ́vjɛ́vjɛ́] 'describes something extremely small'

C₁C₂VCVC₁C₂VCV

- 20a. gièghègièghè [gǝ̀ǝ̀gǝ̀ǝ̀] 'describes size; very small'
- b. piòrhòpiòrhò [pǝ̀rǝ̀pǝ̀rǝ̀] 'describes something that is soft and messy such as an over-ripe or rotten fruit'
- c. fióghófióghó [fǝ̀óǝ̀fǝ̀óǝ̀] 'very tall and thin'
- d. guèzèguèzè [gwè̀zègwè̀zè] 'describes degree: completely, totally, entirely'

The syllable structure of Èdo ideophones differs from regular lexical items. While non-ideophonic forms are mainly mono-, di-, or trisyllabic, ideophones are typically polysyllabic. This expanded structure supports their depictive function by enabling rhythm, repetition, and prosodic coherence that mirror sensory events. Basic structures like CVCV show alternating consonant–vowel segments, as in gbìdì and gbàdà. Complex patterns such as CVVCVV (zàizài, gbàìgbài) lengthen the vowel nucleus and produce a stretched rhythmic contour. Increasing syllable length such as CVCVCV or CVCVCVCV, heightens rhythmic density: forms like bòbòbò or ghèghèghè convey iterative movement or continuous actions. Extended forms such as góbàgòbàgóbà or ghéréghéréghéré employ multi-syllable reduplication to represent repeated movement or unstable activity. Reduplication functions as a structural mechanism, binding phonetic pattern to meaning. Through repetition, vowel stability, and rhythmic patterning, Èdo ideophones encode meaning within their syllable architecture.

11. Phonological Processes

The following phonological processes are observed in Èdo ideophones: glide formation and nasalization.

12. Glide formation

Glide formation, as noted by Omozuwa (2010), is a regular phonetic process in Èdo and many other languages. It involves the desyllabification of a high vowel, resulting in the creation of a glide. In this process, /i/ or /e/ surface as [j], while /u/ or /o/ surface as [w], as illustrated below.

- 21a. buàbuà [bwàbwà] 'describes the walk of a big man'
- b. gièghègièghè [gǝ̀ǝ̀gǝ̀ǝ̀] 'describes size; very small'
- c. mièmièmiè [mjè̀mjè̀mjè̀] 'sugary; very sweet'

d. piánpián [pjǎpjǎ] 'describes the sound of a whip'

e. khuánkhuánkhuán [xwǎxwǎxwǎ] 'very close; firm; very securely'

Glide formation is central to the phonetic shaping of Edo ideophones. In these forms, a high vowel adjacent to another vowel loses syllabic status and becomes a glide, producing onset clusters of the type CjV or CwV. This process increases phonotactic complexity without altering the core vowel quality of the ideophone. In buàbuà [bwàbwà], the underlying /bu-a/ sequence is realized as [bwa], where /u/ desyllabifies to [w], creating a compact CCV onset. The same mechanism is observed in khuánkhuánkhuán [xwǎxwǎxwǎ], where /u/ again becomes [w], yielding iterative clusters that reinforce the form's emphasis. In gièghègièghè [gjɛ̀gjɛ̀gjɛ̀], the high front vowel /i/ converts to [j], producing [gjɛ] and sustaining a CjV template across reduplicated units. The ideophones mièmièmiè [mjɛ̀mjɛ̀mjɛ̀] and piánpián [pjǎpjǎ] follow the same pattern: /i/ transitions to [j], compressing the onset and preserving the nasal or oral quality of the vowel nucleus. However, within the ideophone corpus, glide formation is restricted to the high vowels /i/ and /u/. There were no instances of /e/ → [j] or /o/ → [w] attested in the ideophones analyzed even though they are attested in the general language.

13. Nasalization

This process arises when a nasal consonant extends its nasal feature to the following oral vowel. The vowel becomes nasalized and consequently acquires the phonetic property of the preceding nasal segment. The spread is gradient rather than abrupt, producing a unified nasal domain at the syllable level. This is illustrated below.

22a. dímwídímwí [díḿ̥díḿ̥] 'very deep but not narrow'

b. kínòkínòkínò [kíń̥kíń̥kíń̥] 'plaited; woven, e.g. of a pattern'

c. málómáló [máĺ̥máĺ̥] 'twisted, rumpled; roughly, untidily'

d. mùkùmùkù [mùḱ̥mùḱ̥] 'describes anger'

e. nwànànwànà [ŋwǎń̥ń̥ŋwǎń̥] 'describes anything with a sheen; flashy'

The data above reveal nasalization occurs in Edo ideophones. This occurrence is conditioned by the syllable structure and the distribution of nasal consonants. When a nasal consonant occupies the onset position of a syllable, the vowel of that syllable may become

nasalized. This nasalization is syllable-bounded and does not cross syllable boundaries when an oral consonant intervenes, as seen in (22c) [mǎ́lómǎ́ló] and (22d) [mũ̀kùmũ̀kù], where nasalization occurs only on vowels whose onsets are nasal and is blocked on vowels with oral onsets. Also, when all syllables within the ideophone have nasal onsets, nasalization extends across the entire form. This is illustrated in (22e) [ŋwǎ̀nǎ̀ŋwǎ̀nǎ̀], where every syllable contains a nasal onset, resulting in the nasalization of all vowels. The examples therefore show that nasalization in Èdo ideophones are either syllable-bounded which is triggered by a nasal onset or domain-wide nasal harmony where all onsets within the ideophonic structure are nasal. In general, nasalization in Èdo ideophones is a regulated phonological process that reinforces their prosodic and structural cohesion.

14. The Phonotactics of Èdo Ideophones

To identify the phonotactic patterns that distinguish ideophones from the wider phonological system, it is first necessary to outline the constraints governing non-ideophonic forms in Èdo. The language exhibits the following phonotactic constraints, which apply across the general lexicon:

- a. consonant clusters are disallowed within and across syllables;
- b. vowel sequences are avoided, typically resolved through vowel deletion or glide formation;
- c. Nouns, a major lexical class, do not begin or end in consonants.
- d. Nasal vowels do not occur word-initially but may appear medially or finally.
- e. all syllables are open, as consonants are prohibited in word- and syllable-final positions.

These constraints constitute the phonotactic baseline against which ideophonic structures will be assessed.

While non-ideophonic forms are predominantly monosyllabic, disyllabic, trisyllabic, and polysyllabic forms, the ideophones display a different distribution which are more trisyllabic, polysyllabic and a few disyllabic forms. For example:

23. Non-Ideophones Ideophones

- | | |
|-----------------------------------|--|
| a. bá [bá] 'watch' (monosyllabic) | gbàdà [gbàdà] 'wide, broad' (disyllabic) |
|-----------------------------------|--|

- b. àkhà [àxà] 'weaver bird' (disyllabic) gélété [gélété] 'extraordinary high' (trisyllabic)
- c. àsèlẹ́ [ásèlẹ́] 'cricket' (trisyllabic) nẹ̀kpẹ̀nẹ̀kpẹ̀ [nẹ̀kpẹ̀nẹ̀kpẹ̀] 'gradually; cautiously' (polysyllabic)
- d. àtàlàkpa [àtàlàkpa] 'leopard' (polysyllabic) fióghófióghó [fjóɣófjóɣó] 'very tall and thin'
- e. àtánùnúnà [àtánùnúnà] 'talkative' (polysyllabic)

The data above reveal a clear distributional contrast between the general lexicon and ideophones in Edo. Non-ideophonic items range from monosyllabic to polysyllabic forms, but the lower syllable counts (monosyllabic and disyllabic structures) are central to the lexicon, representing marked exceptions. By contrast, the ideophones exhibit a preference for trisyllabic and, especially, polysyllabic structures, the latter frequently arising through reduplication.

The data also show that ideophones consistently exceed the typical prosodic range of the general lexicon. This expansion is not arbitrary but meaningful. Polysyllabic ideophones, as exemplified by nẹ̀kpẹ̀nẹ̀kpẹ̀, display rhythmic repetition, indicating a correlation between increased syllable length and iterative or gradual semantics. In contrast, the shorter non-ideophonic forms convey lexical meaning without such prosodic augmentation. It also does not violate the open syllable constraint; rather, it multiplies CV units in a recursive or reduplicative fashion.

In the non-ideophonic and ideophonic sets, there are no consonant clusters, no coda consonants, and vowel sequences are avoided. For vowel sequences, there are instances of ideophones that have them, e.g. zàìzàì [zàìzàì] 'quickly, briskly' and lẹ̀úlẹ̀ú [lẹ̀úlẹ̀ú] 'large-sized, huge'. Similarly, nasal vowels occur medially and finally, never word-initially, in line with the phonotactic rule of the language.

What emerges is that ideophones do not outright violate core phonotactic constraints; rather, they operate at their margins. There are no true consonant clusters, no closed syllables, and no word-initial nasal vowels. What may appear as deviation is better understood as

phonological intensification: expanded syllabic length, extensive reduplication, and the concentration of marked segments such as nasalized vowels and glides.

Discussion of Findings

The study examines and describes the phonology of Ẹdo ideophones, accounting for their segmental and suprasegmental properties, including tone, syllable structure, and the phonological processes that characterize their formation. The study reveals that ideophones in the language draw on the full segmental inventory of the language, although their distribution is subject to distinct constraints. This indicates that ideophones do not expand the phonemic inventory but rather restructure existing phonological resources in systematic and functionally driven patterns. The most striking evidence for this comes from the behavior of the labiodental nasal /m/, which occurs freely and even word-initially in non-ideophonic words but is strictly prohibited from word-initial position in ideophones, appearing only intervocally. This constraint signals a distinct phonotactic system operative in ideophones. In addition, while the vowel system is unchanged, ideophones consistently display a vowel-final pattern, ending in either oral or nasal vowels.

The phonological analysis of Ẹdo ideophones within a broader theoretical and cross-domain landscape of iconicity, sound symbolism, and expressive morphology. Drawing exclusively on recent studies (2019–2025), the discussion demonstrates that the phonological patterns observed in Ẹdo ideophones align with widely attested principles of iconic phonology, extending beyond African languages into literary discourse, digital communication, and language pedagogy. As such, Ẹdo ideophones are best understood not as marginal expressive elements, but as systematically integrated phonological resources that encode experiential meaning through form meaning iconicity.

A growing body of research underscores that ideophones and mimetics exhibit structured relationships between phonological form and semantic domains. Studies of mimetic constructions in Indonesian show that sound-symbolic forms correlate with specific event types, bodily processes, and degrees of agentivity, revealing principled mappings between phonological shapes and semantic structures (Nurhidayati et al., 2025). Similarly,

typological analyses of reduplication and expressives in Tibeto-Burman languages highlight that phonological repetition and segmental variation function iconically to convey intensity, plurality, and sensory distinctions (Baruah & Purkait, 2025). These findings resonate with the Edo data, where marked phonological patterns such as vowel quality, consonant clusters, and prosodic salience systematically contribute to the depiction of sensory events and states.

Beyond typology, cross-domain evidence further supports the cognitive grounding of iconic sound patterns. Research on onomatopoeia in literary discourse, particularly in limerick and nonsense verse traditions, demonstrates that rhythm, rhyme, and sound imitation play a crucial role in shaping addressee perception and emotional response (Yemelyanova, 2019). In such contexts, sound patterns are not merely aesthetic embellishments but function performatively, guiding interpretation and evoking experiential immediacy. This performative function parallels the role of Edo ideophones in discourse, where phonological form enhances vividness and directs listener attention to salient aspects of events (Harared & Rahayu Mayasari, 2025; Risagarniwa et al., 2025).

Pedagogical and applied studies provide further corroboration for the functional significance of iconic phonology. Empirical research on teaching Turkish to non-native learners shows that onomatopoeic forms significantly improve phonological discrimination and sound–symbol mapping, leading to measurable gains in writing accuracy (Akdağ, 2024). These results suggest that sound-symbolic forms exploit general cognitive mechanisms that facilitate the association between auditory shape and meaning. Interpreted in light of the Edo data, such findings reinforce the view that ideophones operate as cognitively efficient devices for encoding and accessing experiential meaning, rather than as stylistic or peripheral lexical items (González-Jácome & Salge-Glick, 2025).

Evidence from contemporary digital communication further illustrates the productivity of iconic sound representations. Analyses of textese and classroom interaction reveal that onomatopoeia and sound-based representations are widely employed to enhance engagement, immediacy, and affective resonance in both informal and instructional settings (Totanes & Lintao, 2019). Although emerging in technologically mediated contexts, these practices reflect the same underlying semiotic principle observed in ideophones: the strategic

use of sound form to approximate sensory experience and emotional stance. This convergence across domains underscores the robustness of iconicity as a linguistic resource (Svensson, 2025).

Taken together, these cross-linguistic and cross-domain findings support a unified interpretation of Ẹdo ideophones as part of a general system of iconic phonology. The Edo evidence aligns with recent theoretical perspectives that view ideophones as integrated components of grammatical and phonological systems, rather than as extragrammatical anomalies. By demonstrating that similar sound-symbolic strategies recur in unrelated languages, discourse traditions, and communicative technologies, the present analysis strengthens the argument that iconicity represents a stable interface between phonological form, cognition, and meaning (Alves, 2015). Consequently, the study of Ẹdo ideophones contributes not only to the descriptive understanding of Edo phonology but also to broader debates on the role of iconicity in natural language systems.

The study also indicates that ideophones differ from the general lexicon through strict tonal uniformity, employing either all high or all low tones across a form. This pattern is functionally motivated where high tones encode clarity and sharpness (e.g., sóghósóghó) and low tones convey heaviness and disorder (e.g., zàghàzàghà). The absence of tonal minimal pairs within the ideophone corpus further reinforces their distinct status, indicating that tone in ideophones does not serve a contrastive lexical function but instead operates as a cohesive, iconic feature that maps acoustic structure directly onto sensory experience, a function that contrasts sharply with the role of tone in the general language.

The syllable structure of Ẹdo ideophones reinforces their distinct phonological identity through a marked preference for polysyllabic forms, contrasting with the predominantly mono-, di-, and trisyllabic patterns of the general lexicon. The data reveal a wide range of syllable structures, from simple CVCV forms to extended sequences of six or more syllables, largely derived through systematic reduplication. These forms exhibit patterned repetition and alternation, including sequences with uniform vowels, alternating vowel patterns, repeated consonants, and alternating consonant structures, all of which contribute to the rhythmic density and expressive force of ideophonic forms. The syllable structure of

ideophones adhere to core phonotactic constraints, notably the avoidance of closed syllables. The complex onsets created through glide formation, where high vowels desyllabify to produce CjV or CwV patterns, represent a form of phonological intensification that adds articulatory complexity without violating the open-syllable constraint.

The study further reveals that the phonological processes in Ẹdo ideophones display a systematic organization that strengthens their prosodic and structural cohesion, particularly through nasalization and the use of phonotactic margins. Nasalization in the ideophones operates in two related patterns: a syllable-bounded type triggered by nasal onsets, where only vowels in nasal-initial syllables are affected, and a domain-wide harmony, where nasalization spreads across the entire form when all syllable onsets are nasal. This regulated application of nasalization demonstrates that ideophones are not simply assembled from phonological segments but are structured according to coherent prosodic principles that enhance their iconic and depictive functions. When considered against the baseline phonotactic constraints of the wider language, which disallow consonant clusters, avoid vowel sequences, and prohibit word-initial nasal vowels, the ideophones do not violate these rules but extend them through intensification. The expanded syllabic length, extensive reduplication, and concentration of marked features such as nasalized vowels and glides all serve to create a register that, while built from familiar phonological materials, contribute to their expressive force. These findings characterize Ẹdo ideophones not as a marginal or exceptional set of expressive forms but as a coherent phonological subsystem defined by unique distributional constraints, prosodic uniformity, structural expansion, and the systematic use of phonological processes, all of which operate together to align sound structure with sensory experience in ways that differ from the ordinary lexicon.

Conclusion

The phonological analysis of Ẹdo ideophones reveals that they share the same phonemic inventory as non-ideophonic words, with the exception of [m] 'mw', which does not occur word-initially. Ẹdo ideophones exhibit sequences of identical vowels and consonants and are structurally longer than regular lexical items, ranging from disyllabic to

polysyllabic forms. Each ideophone begins with a consonant and ends with a vowel, oral or nasal, while consonant clusters are generally absent except in cases of glide formation, where underlying high vowels (/i/ or /u/) are desyllabified to form [j] or [w].

Syllable structures such as CVCV, CVCVCV, and extended forms like C₁C₂VC₁C₂V are common, often repeated through reduplication or triplication to reinforce expressive function. Nasalization occurs when a nasal consonant spreads its feature to adjacent vowels, producing systematic phonetic patterns. In ordinary lexical items, tone often carries a contrastive function, distinguishing meanings between words (e.g., a high-low tone word vs. a low-high tone word may signal entirely different concepts). In ideophones, however, tones are organized in uniform sequences, either consistently high or low, primarily to enhance rhythmic, acoustic, and expressive effects rather than to signal meaning differences. The phonology of Èdo ideophones is marked by structural expansion, rhythmic repetition, and systematic segmental and suprasegmental processes. These features functionally encode meaning and highlight the distinctive phonological status of ideophones within the language.

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