

Chapter 4

Morphology in Gengbe and Yoruba ideophones

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Ideophones depict events and states, filling the cracks between linguistic iconicity and arbitrariness. More than extemporaneous sound effects, ideophones are words, stored in the mental lexicons of speakers, and as such, despite their often exceptional properties, ideophones behave very much like other words, especially in their derivational morphology – word formation that happens in the lexicon. To highlight the similarities in morphological phenomena between ideophones and other words in the lexicon, we consider compounding, reduplication, and tone in the derivational morphology of Gengbe and Yoruba. In these and other West African languages, often used as examples of isolating languages, we take this opportunity to highlight morphological processes where we find them, revealing complexity in the word formation patterns of ideophones and in the morphology of isolating languages.

1 Introduction

Like the category of *isolating languages*, defined by a dearth of inflectional morphology, the category of *ideophones* is also said to “display little morphology”, (Childs 1994: 185), or even “exceptional morphology”, the example given by Klammer (2001: 167) being reduplication. Yet, there is more to morphology than inflection, and reduplication is not so exceptional, especially in West African languages. In responding to similar assertions, such as Johnson (1976) and Kunene



(1965), Ameka (2001: 26) notes that it is not useful to highlight that ideophones do not display the morphology of inflected words in languages where there is little inflection: “I suspect that many of the features that have been noted for ideophones co-vary in similar ways with the typological properties of the languages in which they occur”.

As researchers increasingly consider ideophones within their linguistic descriptions and analyses, academic focus has broadened to include how ideophones fit into grammar and more broadly into linguistic typology (Newman 2001, Voeltz & Kilian-Hatz 2001). In pursuing this concern, we present examples of word formation patterns found in two isolating West African languages, Gengbe and Yoruba. Our goal is to highlight similarities between the derivational morphology of prosaic words (non-ideophones) and that of ideophones, with particular focus given to compounding, reduplication, and tonal morphology. In doing so, we examine different types of non-arbitrariness in Gengbe and Yoruba derivational morphology, including qualitative iconicity (depiction based on the sounds of a word), quantitative iconicity (depiction based on the shape of a word), and systematicity (regularity within the language system), distinctions discussed in Carling & Johansson (2015) and Dingemanse et al. (2015).

After this brief introduction, Section 2 introduces these two languages, their morphology, and the sources for data presented in this paper. Section 3 offers examples of word formation in ideophones, discussing different types of non-arbitrariness and working from word formation that is not clearly morphological towards examples of patterns more similar to prosaic word morphology. Section 4 concludes the paper by considering similarities between the morphological processes discussed and the importance of including ideophones in morphological description and analysis.

2 Language backgrounds and data

2.1 Gengbe

Gengbe [iso 639-3: gej], alongside other Gbe languages (Niger-Congo, Kwa), is spoken in Togo, Benin, and Ghana by multilingual populations. As with other Gbe languages, such as Ewe, the basic word order in a Gengbe sentence is Subject-Verb-Object, but syntactic movement such as topicalization and focusing, as well as morphological processes like nominal and adjectival reduplication, can generate a surface Subject-Object-Verb order. Similar to Ewe, the Gengbe syllable may be Vowel or Syllabic Nasal only (V or N), Consonant-Vowel (CV), Consonant-Liquid-Vowel (CLV), or Consonant-Glide-Vowel (CGV). All syllables either have

(H)igh tone, realized as H or Rising pitch, or are toneless, realized with (M)id or (L)ow pitch (Bole-Richard 1983). Additional analysis of the phonetics and phonology of this variety of Gengbe can be found in Lotven & Obeng (2018) and Lotven (2020), as can the conventions of the practical orthography used here.

2.2 Gengbe ideophones

It has been long noted that Gbe languages are rich with ideophones, and some of the earliest linguistic research on ideophones is from Schlegel (1857), who devoted a chapter to the subject in his grammar of the Gbe language Ewe, a research program continued by Westermann (1905, 1907). Ameka (2001), describes ideophones in Ewe as belonging to no one grammatical word class, and rather that they can be found in syntactic positions typically occupied by nouns, verbs, adjectives, adverbs, intensifiers, and interjections. Gengbe is similar to Ewe in this respect (as is Yoruba).

In the Spring of 2015, Dr. Samuel Gyasi Obeng and the first author, working with Gabriel Mawusi, a native speaker of Gengbe from Batonou (a village near Glidji, Togo), transcribed, discussed, and audio recorded (in isolation) over 80 sound symbolic expressions in the Indiana University Department of Linguistics, certainly a fraction of those found in the language. The data presented here were elicited alongside discussions of other adverbials, so all Gengbe examples presented here can at least function as adverbs, and some can likely occupy more grammatical roles, as outlined in Ameka (2001). Using the distinction from Martin (1975) made in discussing Japanese, this list includes both phonomimes (phon) – ideophones depicting sounds such as *sss* (the sound of a snake moving) and phenomimes (phen) – those depicting actions or states, such as *jə̀:* (the motion of a snake moving). Examples of phenomena in Gengbe are from this list (included in the Appendix).

2.3 Gengbe morphology

Essegbey (2006: 1) calls Ewe “an isolating language with agglutinating features”. Gbe languages generally display little inflectional morphology, and, with the exception of case-marked pronouns, they lack verbal and nominal inflection (Aboh 2004: 32–33). This description is apt for Gengbe as well, with Gengbe derivational morphology making use of compounding, reduplication (full and partial), and tone, as exemplified below.

Compounding is commonplace in Gengbe, for example in the word meaning ‘pen’ *è-sì-nú-ŋlǎ-tí* (NML-water-thing-write-stick), and nouns typically have

Table 1: Reduplication in Gengbe

	Isolation	Pluractional/Emphatic	Nominal/Adjectival
a.	<i>βù</i> 'open'	<i>βù βù</i> 'many people open,' 'many things opened'	<i>βù-βù</i> or <i>βù-βù</i> 'opening, opened'
b.	<i>vǔ</i> 'be scared'	<i>vǔ vǔ</i> 'very scared'	<i>vǔ-vǔ</i> 'scared, fear'
c.	<i>bjǒ</i> 'ask'	<i>bjǒ bjǒ</i> 'repeatedly ask'	<i>bjǒ-bjǒ</i> 'asking, asked'
d.	<i>gblě</i> 'spoil'	<i>gblě gblě</i> 'completely spoiled'	<i>gblě-gblě</i> 'spoilage, spoiled'
e.	<i>d̥zrà d̥ó</i> 'repair'	<i>d̥zrà d̥ó d̥zrà d̥ó</i> 'repeatedly repair'	<i>d̥zà-d̥zrà d̥ó</i> 'repairing, repaired'
f.	<i>mǎ-sà</i> 'not sell'	-	<i>mǎ-sà-mǎ-sà</i> or <i>mǎ-sà-mǎ-sǎ</i> 'unsold'

High tone stems in the nominal/adjectival is Rising-High, the result of a regular phonological rule – a prohibition on a sequence of Rises that is active within words – while the pluractional/emphatic pattern shows a series of Rises, as in (1b–d) (Lotven & Berkson 2019). These observations evince different structures: the pluractional/emphatic pattern is syntactic reduplication, or iteration of the same syntactic constituent, while the nominal/adjectival pattern is morphological, with the reduplicant integrated into the same prosodic word as the stem.

There are some other reduplicative patterns in the language, for example, a productive pattern with *sía* 'all', as in 'everything' *è-nú-sía-nú* (NML-thing-all-thing), with deletion of NML marking and compensatory lengthening of the preceding /a/, preserving the High-Low tone pattern (*è-nú-sía-è-nú* → *è-nú-síâ-nú*). These and other reduplicative patterns are described for Ewe in Ameka (1999). Far from exceptional, reduplication offers some of the most productive morphological patterns in Gengbe, with unique morpho-phonological processes that shine a light on the structure of the language.

Tone matters to Gengbe morphology as well, for example, in distinguishing the 1st person plural *mí* from the 2nd person plural *mǐ*, the 3rd person singular subject *é*, from the object *è*, and 'I will' from 'I should' in (1).² Tone is also part of the nominal/adjectival reduplicative template discussed above.

²The 3sg clitic assimilates in height, nasality, and ATR to the previous vowel but retains Low tone, for example in *kè-è* 'spread-3sg,' *tú-ì* 'close-3sg,' and *sé-è* 'bear-3sg (fruit)'

- (1) *mǎ́/mǎ́ qù nú*
 I.will/I.should eat thing
 ‘I will/should eat.’

In addition, there is an alternative reduplicative template for Low tone Gengbe verbs wherein the second syllable has Rising tone, as in *kù.kù* or *kù.kǔ* ‘uprooting/uprooted,’ as is also shown in Table (1a). This pattern is similar to reduplicative templates in Ewe, where a suffixed High tone lengthens syllables with High tone and derives Rising tone from Low tone syllables (Ameka 2012).

Although Gengbe has few instances of inflectional morphology, its derivational morphology makes use of compounding, reduplication, and tone. Similar phenomena are found in Yoruba.

2.4 Yoruba

Yoruba [iso 639-3: *yor*] is a Benue-Congo language spoken in Southwestern Nigeria, Benin, and Togo. Similar to Gengbe, Yoruba has been described as having a rich inventory of ideophones, even in early works such as Awoyale (1978, 1981, 1989) and Rowlands (1970), but also Akanbi (2014). Yoruba data for this paper are from these sources as well as from the second author, a native speaker of Yoruba; we direct the reader to these sources for further research on Yoruba ideophones, as well as for lists of examples. We use the Yoruba orthography for the examples in this paper. Yoruba has 7 oral vowels [i e ε a ɔ o u] and 5 nasal vowels [ĩ ẽ ã õ ũ], with [ã] and [õ] being allophones of the same phoneme. The mid vowels /ε/ and /ɔ/ are represented orthographically as ⟨e⟩ and ⟨o⟩, respectively, while nasality is represented with ⟨n⟩ after the vowel, such that /ĩ/ is represented orthographically as ⟨in⟩. Yoruba has 3 tones: High, Mid, and Low. High tone is conventionally marked with an acute accent (́), Low tone with a grave accent (̀), and Mid tone is unmarked.

2.5 Yoruba morphology

Similar to Gengbe, typological work has categorized Yoruba as an isolating language due to its limited inflectional morphology, and Yoruba morphology is characterized by compounding, affixation, and reduplication (Adewole 1995, Pulleyblank & Akinlabi 1988, Schleicher 1987). Tonal morphology, or word formation that uses tone as part or all of its exponence, is commonplace in Yoruba. In addition to playing a role in the reduplicative templates to be discussed in this chapter, tone can mark features in the pronominal clitic system (Akinlabi & Liberman

2001). For example, the 2nd person singular subject pronoun *o* is distinct from the 3rd person *ó*, and the 3rd person plural subject pronoun *wón* is distinct from the pronoun *won*.

Yoruba commonly derives words through compounding. Compounding can result in the formation of complex verbs through Verb+Verb or Verb+Noun constructions (Schleicher & Schleicher 1990, Seidl 2000) or in the creation of complex nouns through Noun+Noun constructions (Adewole 1995; Eleshin 2021). As a result of a vowel hiatus constraint in the language, compounding can create an environment for vowel assimilation across morpheme boundaries (Adewole 1995) or vowel elision, especially in compound verbs (Schleicher & Schleicher 1990, Seidl 2000). Compound verbs are created through Verb+Noun constructions, as in *wíjọ* ‘complain’, derived from *wí* ‘speak’ + *ẹjọ* ‘case’, or *wolé* ‘inspect a house’, derived from *wo* ‘look’ and *ilé* ‘house’, both with elision of the noun’s initial vowels, *e-* or *i-*, respectively. Compound noun examples (Noun+Noun constructions) include the following words starting with the noun *owo* ‘money’: (1) *owoorí* ‘tax’, with *orí* ‘head’, (2), *owooşù* ‘salary’, with *oşù* ‘month’, and (3) *owoolé* (*owo*+*ilé*) ‘rent’, with *ilé* ‘house’. For the second members of these compounds, there is an assimilation of the initial vowel to the preceding vowel quality. In addition to orthographic conventions for compounds and phrases in Yoruba, compounds can often be identified phonologically by their hiatus resolution strategies, and semantically by their strict collocations with often conventionalized meanings.

As an example of affixation, deverbal noun constructions typically take nominalizing prefixes, as in *a-kòwé* (AG-write) ‘secretary’ and *ì-kòwé* (INS-write) ‘pen.’ With the base verb *kòwé* found in both examples, the former employs the agentive prefix *a-* while the latter has the instrumental prefix *ì-*. Some prefixes have more than one functional usage, as with *ì-*, which is an instrument for performing an action in the example above, but which can indicate the act of performing the action in other contexts (Adewole 1995, Awobuluyi 2008, Bamgbose 1990).

Reduplication functions productively in several Yoruba word formation processes (Ehineni 2017, Pulleyblank 2009), as illustrated in Table 2. Notably, prosaic words may fully reduplicate for intensity, as in the adverbs in (2a–b), or to form agentive (nominal) constructions from verbs, as in (2c–d). Partial reduplication occurs in examples (2e–f), as these deverbal nouns reduplicate only the first consonant of the word, followed invariably by the vowel /i/ with High tone. In examples (2g–h), the morpheme *kí* ‘any’ intervenes between the stem and reduplicant (with assimilation and elision), similar to the *síá* ‘all’ construction in Gengbe, discussed in Section 2.3.

The ‘any’ structure in (2g–h) can also extend to some ideophones such as *tímùtímù-kí-tímùtímù* ‘any mattress’, where ‘mattress’ is the already redupli-

Table 2: Yoruba Reduplication

	Stem	Gloss	Reduplicated form	Gloss
a.	<i>tayò</i>	‘joyfully’	<i>tayòtayò</i>	‘very joyfully’
b.	<i>díẹ</i>	‘little’	<i>díẹdíẹ</i>	‘very little’
c.	<i>peja</i>	‘kill fish’	<i>pejapeja</i>	‘fisherman’
d.	<i>paná</i>	‘quench fire’	<i>panápaná</i>	‘fireman’
e.	<i>jẹ</i>	‘eat’	<i>jíjẹ</i>	‘eating’
f.	<i>gbàdúra</i>	‘pray’	<i>gbígbàdúra</i>	‘praying’
g.	<i>omọ</i>	‘child’	<i>omọkọmọ</i>	‘any child’
h.	<i>ilé</i>	‘house’	<i>ilékilé</i>	‘any house’

cated ideophone *tímùtímù*. Awoyale (1981) notes that this type of reduplication and infixation is permitted only for ideophones which are already functioning as nouns in Yoruba.

Though lacking inflectional morphology, Gengbe and Yoruba are rich with derivational morphology, making use of compounding, affixation, reduplication, and tone. The following section explores similar processes used in forming ideophones in these two languages.

3 Derivational morphology in Gengbe and Yoruba ideophones

3.1 Qualitative iconicity and related word forms

Like prosaic words, some pairs or sets of ideophones have related forms and meanings, often differing minimally in their depictions (Diffloth 1972).³ These iconic relationships between the sounds of a word and its meaning are referred to by Carling & Johansson (2015) as qualitative iconicity. Such associations may be language specific, such as phonoaesthemes – combinations of sounds with similar meaning (Firth 1930) – or they may be universal, such as the frequency code, which relates smallness with high pitch and high vowels cross-linguistically (Ohala 1984, 1994).

³While prosaic words are largely used to *describe*, representing events and states with arbitrary symbols, ideophones *depict*, offering vivid, gradient, and specific representations of events and states to be interpreted. Further discussion is found in Dingemanse (2015), especially as it relates to ideophones.

Paradigmatic differences in consonants, vowels, and tone all play a part in influencing the depiction offered by an ideophone. In Yoruba, for example, *gbim* and *kim* both describe degrees of heart palpitation, with the former associated with a heavier heartbeat than the latter. In Gengbe, *páji* and *táji* evoke the sound of a slap, where the former slap struck the front of the recipient's face, and the latter struck the person's cheek. Likewise, a punch to the stomach or cheek *gbùm* differs from a punch to the ribs *gùm*, which differs from a punch to the face *gim* – which High tone renders ineffectual as an attack (*gím*). Tone alone may make the difference between depictions. For example, in Yoruba, *táló* describes the sound a tiny object makes when it drops into a river, while Rising tone in *tàlǒ* indicates that the object created a ripple. Similarly reliant on tone for interpretation, *káló* evokes the sound or motion of food being quickly swallowed, and *kàlò* is associated with the metaphorical swallowing of money, such as a gambler or wasteful person may do.

If we define morphological patterns as regular differences in word form associated with regular differences in word meaning, these types of alternations do not clearly meet the mark. For such morphological analysis, one might split onsets or tones from rhymes and assign them meanings. Yet, each of these units does not clearly relate to an individual piece of the meaning, and such sound-meaning correspondences are not usually systematic enough to be considered morphology, rather than, say, sound symbolism (Hinton et al. 1994). In other words, the above examples appear more like observations of individual relationships between word forms, rather than productive or predictable patterns of form-meaning correspondence, which can be seen elsewhere in the morphology of ideophones. However, it is worth noting that minor changes in meaning associated with minor changes in word form are also typical in, for example, the pronoun systems of Gengbe and Yoruba, where tone also plays idiosyncratic roles; and all morphology varies in productivity.

3.2 Quantitative iconicity and event semantics

The event or state that an ideophone depicts may be tied to its syllable and/or word structure. These types of syntagmatic alternations and shape-based depictions fall into the category that Carling & Johansson (2015) call quantitative iconicity, and while such processes are available to other word categories, ideophones are often this type of creative-yet-conventionalized expression. For example, in Gengbe, the continuous blowing of wind is lengthened iconically *βù::*, but when wind hits the resistance of trees, and there is a repetitive rather than

continuous quality to its sound/motion, a coronal stop is added to form two syllables, and reduplication is employed *βùdùβùdù*. Lengthening and reduplication are used in both Gengbe and Yoruba to similar effect, yet Gengbe ideophone reduplication is likely syntactic, while later in Section 3.4, we present some examples of morphological reduplication in Yoruba.

In Gengbe, when a person walks in water, sliding forward without raising their feet, a single syllable is reduplicated *vlàvlà*, but when that person moves their legs through deeper water, this exertion is depicted with a lengthening of the reduplicated rhyme from one to two syllables through glide insertion *vlàjàvlàjà*. When the person picks their feet out of the water, and there is a distinct raising and lowering of the leg through the surface of the water, the action is depicted with syllables containing onset stops and a Low-High-Low-High tone pattern, *dàbúdàbú* – similarly, elephants in mud walk *ǎzàgùǎzàgù*. Lengthening through glide insertion seems to be associated with slow or protracted movement, such as in the motion of a clumsy person walking leisurely *βlàjàβlàjà*.

Reduplication and lengthening are productively used in the intensification of Yoruba ideophones as well. For example, the act of staring at something is intensified through lengthening *sì::*, as is the depiction of a finished item *po::*, or a single punctual event, such as the sound that comes from hitting two things together *gbà::*. Awoyale (1978) notes that Yoruba ideophones can be reduplicated for recurrent actions, such as *gbì* (a single heavy tread of one's boots) and *gbìgbì(gbì...)* (numerous heavy treads of one's boots). Some ideophones, such as *gbà::* (two things hitting against each other), can be lengthened for intensity *gbà::* or reduplicated indefinitely *gbà::gbà::(gbà::)* to convey the number of occurrences, in this case strikes.

Some relationships between word formation and event semantics walk us more clearly into the domain of regular, predictable morphology, for example, in the choice of reduplication or lengthening for intensification in Gengbe. To compare this with other morphological processes of the language, we first consider how a predicate's lexical aspect influences the aspectual morphology it takes. Bare Gengbe predicates describing events have a default past-time interpretation, while bare predicates describing states have a default present-time interpretation. Gbe languages often use reduplication in forming progressive constructions, varying also along the divide between events and states. Essegbey (1999), writing on Ewe, claims that true stative verbs are identified as those that resist reduplication for progressive aspect. A similar correspondence between lexical aspect and reduplication can be found in Gengbe progressive constructions as well.

For ideophones, the choice of lengthening or reduplication also reveals information about the lexical aspect of the depicted event or state. The productive link between these processes can be illustrated with a stem and its possible modifications, shedding a light on regular morphological patterns among ideophones. For example, in Gengbe, a single step by a big man *kìm* can be reduplicated (indefinitely) to indicate the many steps involved in walking, *kìmkìm(kìm)*, while the duration of an object sitting still is intensified through lengthening *kpó::*. Likewise, slow or quiet actions are emphasized or exaggerated through lengthening *blèù::*, and intense darkness lengthens *jìbò::*.

The link between repetition of punctual events and reduplication, as well as between lengthening and slow motions or states, is illustrated with the Gengbe ideophone *kédé*. A single quiet or gentle motion is lengthened, *kédé::*, a hunter stalking prey carefully is lengthened and repeated, *kédé:: kédé::*, and quick movements that are not so quiet skip the lengthening and surface with reduplication only, *kédékédé*. Not all reduplicated ideophones have a clear stem form from which they are derived, as some expressions are obligatorily reduplicated, however, Ameka (2001) has noted that the general link between event repetition and reduplication in Ewe ideophones holds in these forms as well.

These examples show that depictive lengthening and reduplication may be linked to lexically stored and aspectually bound differences in ideophones, similar to the influence of lexical aspect on verbal morphology. Some of these transformations are less productive, such as glide insertion, while others are more productive, such as full reduplication and lengthening for intensification. Reduplication, in some functions, is linked to punctual event repetition, and it is worth noting that this iteration is similar to compounding if we consider that each reduplicant depicts a different event, for example, a punch in a boxing match or a step through mud, repeated. In Gengbe, such full reduplication is likely syntactic iteration rather than morphological concatenation, as these processes can be applied creatively and indefinitely (unlike the one base + one reduplicant patterns given in Table 1) and fail to exhibit word-level phonological rules such as a prohibition on a series of Rising tones. The following section considers more clearly compositional ideophone compounds.

3.3 Compounding and complex events

Some events are composed of more than one part, so the iconic depiction of events leads to some ideophones that are decomposable. In Gengbe, the ideophone *βù::g̀bim* can be split in two, where the first syllable indicates the motion of a large object falling, and the second denotes the sound of it hitting the ground.

Similarly, in Yoruba, *gbù:gbà:* describes a car that loses control and hits something, where *gbù:* depicts the wobbling movement of the car, and *gbà:* denotes both the action and sound of the collision.

Compounding in ideophones can depict different participant involvement as well. In Gengbe, the motion of a slim person taking a step/walking is *srá/srásrá*, while the motion of a large person taking a step/walking is *gbì/gbìgbì*. When these individuals are stomping through mud side-by-side, their steps are intermingled *gbìsrágbìsrá*. These are examples of collocations – words that often occur together – but they are not clearly morphologically bound into a prosodic word. We offer no evidence of clearly-absent word-level phonology which would suggest a morphological analysis, so these examples may, like ideophone reduplication in the language, be better described as phrases rather than words.

Yoruba offers some conventionalized examples of compounding in ideophones. For example, *gbèdèmúkẹ* depicts a festive mood with maximal enjoyment and entertainment, where *gbèdẹ* depicts a simple/easy situation or event, and *múkẹ* depicts a relaxing mood or situation. As another example, with some metaphorical extension, we can understand *gbangbakedere* to depict a secret that was exposed, composed of *gbangba*, which depicts openness (especially a part of a building), and *kedere*, which depicts ‘clearly.’

As with simplex ideophones, these complex ideophones function like words rather than phrases, and unlike phrases, they can occupy the positions of various categories, as illustrated by (2) below. *Gbèdèmúkẹ* acts as noun in (2a) (only nouns can occupy this position in Yoruba, Bamgbose 1990), an adverb in (2b), and an adjective in (2c) with a difference in tone that does not affect interpretation. *Gbangbakedere* acts as noun in (2d) but as an adverb in (2e).

- (2) a. *Gbèdèmúkẹ* ni gbogbo wa wà.
 IDEO COMP all 1PL be
 ‘We are all in a festive/relaxing mood.’
 b. Ó rò gbèdèmúkẹ.
 3SG simple IDEO
 ‘It is simple in a fun way.’
 c. È kú gbèdèmúkẹ òpin ọ̀sẹ̀.
 2PL greet IDEO end week
 ‘Have a happy fun weekend!’
 d. Gbangbakedere ni l-ójú Olódùmarè.
 IDEO COMP before-eyes God
 ‘It is wide-open before God.’

e. Ó ti hàn gbangbakedere.

3SG PFV expose IDEO

‘It has been exposed openly/It is no longer a secret.’

These examples, taken in conjunction with those of prosaic compounds in Section 2 show how compounding applies across the lexicons of these two languages. We now turn to patterns of reduplication that reveal further complexities, as well as more clearly morphological phenomena: templatic and tonal morphology in ideophones.

3.4 Reduplication and templatic morphology

Reduplication is commonplace in Gengbe and Yoruba and is used, among other functions, to form nouns and adjectives from Gengbe verbs and to mark emphatic and agentive forms in Yoruba. In this subsection, we highlight regular, productive patterns in Yoruba ideophone reduplication, contrasting the full reduplication found in pluractional formation with a tonal template that marks counter-expectation and overwrites lexical tone. Such templates are non-arbitrary, but not necessarily iconic, in that they are predictable and regular patterns within the language system, though the nature of their tone and shape does not necessarily depict events and states. Dingemanse et al. (2015) refer to this type of non-arbitrariness as “systematicity”.

Commonly marked with reduplication across the world’s languages, pluractionality refers to the expression of multiplicity, usually of occurrence or participant (Newman 1980, 2012). In Table 2 above, full reduplication of Yoruba adverbs was shown to indicate intensity, and full reduplication of verbs was shown to indicate agentivity. As shown in Table 3 below, full reduplication of Yoruba ideophones indicates pluractionality. While these forms may be used to depict many flat, huge, fat, small, or bulging things, pluractional meaning is context-dependent. For example, (3a) could be used to depict multiple flat objects, or multiple people making something flat, like a team of workers flattening a section of road.

The pattern in Table 3 contrasts with the counter-expectation template illustrated in Table 4, which replaces the tone pattern of the stem. This overwrite of the underlying tone pattern happens regardless of the stem tone or number of syllables, and the resulting pattern is that of all Low tone on the first copy of the stem and all Mid tone on the second. In (4a–c), Low tone stems with two, three, and four syllables, surface with this Low-Mid pattern, as do Mid and High tone stems in (4d–e). Neither stem copy always surfaces faithfully, so it is not possible

Table 3: Pluractionality in Yoruba

	Stem	Pluractional form	Gloss
a.	<i>pẹlẹbẹ</i>	<i>pẹlẹbẹpẹlẹbẹ</i>	‘flat’
b.	<i>kòbìtì</i>	<i>kòbìtìkòbìtì</i>	‘huge’
c.	<i>bẹrẹkẹtẹ</i>	<i>bẹrẹkẹtẹbẹrẹkẹtẹ</i>	‘fat’
d.	<i>ríndín</i>	<i>ríndínríndín</i>	‘small’
e.	<i>rògòdò</i>	<i>rògòdòrògòdò</i>	‘bulging’

to determine which is the base and which is the reduplicant for this construction. While the stems in (4a) and (4e) are tonal minimal pairs, their reduplicated forms are identical, and ambiguity is avoided through predicate choice in two collocations – *dùn* ‘sweet’ usually precedes the former, and *rí* ‘appear’ usually precedes the latter. This prosodic template is reminiscent of the nominalizing reduplication pattern in (2e–f) where vowel quality is overwritten, surfacing consistently as /i/ for the reduplicant.

Table 4: Counter-expectation in Yoruba

	Stem	Gloss	Reduplicated Form	Gloss
a.	<i>ríndín</i>	‘sweet’	<i>ríndínríndín</i>	‘unusually sweet’
b.	<i>kòbìtì</i>	‘huge’	<i>kòbìtìkòbìtì</i>	‘unusually huge’
c.	<i>bẹrẹkẹtẹ</i>	‘fat’	<i>bẹrẹkẹtẹbẹrẹkẹtẹ</i>	‘unusually fat’
d.	<i>pẹlẹbẹ</i>	‘flat’	<i>pẹlẹbẹpẹlẹbẹ</i>	‘unusually flat’
e.	<i>ríndín</i>	‘small’	<i>ríndínríndín</i>	‘unusually small’

To draw a comparison with the ‘any’ reduplication in (2g–h), it is worth also mentioning another reduplicative template that applies to limited derived ideophones in Yoruba. Some ideophones, such as *kẹ̀n̄bẹ̀* ‘loose/spacious’, have a CVNVCV shape with all Low tones, a pattern that may involve reduplication, as in *gbò̀n̄gbò̀* ‘deeply rooted’. These ideophone examples are not readily decomposable into constituent morphemes, but others are derived from monosyllabic, prosaic predicates, such as *gà̀n̄gà̀* ‘conspicuously tall’, which is derived from the prosaic verb *ga* ‘tall’, and *làn̄làn̄* ‘conspicuously heavy and big’, derived from *ní̀lá* ‘big’. These examples show two different paths to mimicking the CVNVCV shape of ideophones. For *ga/gà̀n̄gà̀*, an *-n-* is inserted between the base and reduplicant,

while in *ńlá/lànlà*, the initial *n*- is deleted, while the medial *n*- remains. In addition to conforming to this CVNVCV template through insertion or deletion, both examples show that the underlying tones of the base, here Mid or High respectively, are overwritten by Low tone across the entire word. Such reduplication offers an example of systematicity, as a template that even prosaic words can conform to, through different means, to make their form non-arbitrarily linked to meaning, in this case *conspicuousness*. Further evidence of morphology in reduplication is seen in other West African languages like Siwu and Emai, which Dingemanse (2015) uses to argue that reduplication bridges description and depiction.

This snapshot of word formation processes, from the more iconic and idiosyncratic to the more systematic and productive, offers a look at the parallels between word formation in ideophones compared to the rest of the lexicon. These parallels include the use of compounding, affixation, reduplication, and tone in deriving meaning, and although some processes appear more syntactic, others suggest morphological processes active in the ideophones of Gengbe and Yoruba.

4 Conclusion

Since ideophones, like other words, inhabit the lexicon, derivational morphology – word formation that occurs there – is a natural point of comparison. Stepping past spontaneous and performative vocal gestures, we examined the fuzzy line between depictive word formation strategies and the conventionalized forms that offer us evidence for derivational morphology. In doing so, we considered various word-formation strategies, including those linked to qualitative and quantitative iconicity, as well as to systematicity, and those making use of compounding, reduplication, and tone.

Qualitative iconicity, or connections between the sounds of a word and its meaning, are commonplace and conventionalized, yet when regularity is discovered, patterns are often treated within the domain of sound symbolism, rather than morphology. In this discussion, a parallel was made between form-meaning (in this case, tone-meaning) correspondences that alter the details of events and states depicted by ideophones and those that mark the interpretation of person and number in the pronoun systems of Gengbe and Yoruba.

Quantitative iconicity, or connections between word shape and meaning, was also discussed, where regular links can be found between a morphophonological process and the event or state depicted. Lengthening is associated with slow movements and states in Gengbe, while reduplication is associated with repetition and pluractionality, as it is in Ewe, Yoruba, and many other languages. Much

like individual predicates, which are compatible with different morphological structures based on their lexical aspect, the word formation processes available to ideophones (lengthening and reduplication) are also dependent on lexically-defined aspectual differences between them, offering another point of similarity between ideophones and other lexical items.

Compounding – combining words to derive complex concepts – is also used in Gengbe and Yoruba ideophones. Compounds range from those that depict complex events, to those which are less clearly compositional, some involving metaphorical extension. Such compounding is available across the lexicon, to ideophones and prosaic words alike.

Reduplication – copying all or part of a morpheme – is particularly widespread in Gengbe and Yoruba, and is employed by derivational processes across the lexicon. We offered examples of full and partial reduplication, some with infixation and some conforming to particular tonal or prosodic templates, to highlight the complexities found in the morphology of ideophones and prosaic words alike in West African languages. We discussed systematicity, or non-arbitrariness, linked to regularity within the language system itself, and offered examples in Yoruba of an ideophone template that can even accept some prosaic words as stems. A possible continuation of this research could examine whether ideophones favor templatic and replacive strategies, those forcing stems to conform to a specified form. In future research, formalisms used to analyze reduplication and non-concatenative word formation, such as Construction Morphology (Booij 2010, Goldberg 2006) and Optimality Theory (McCarthy & Prince 1995, Prince & Smolensky 1993), are available for more pointed comparison between the patterns found in ideophones and those found elsewhere.

In focusing on these two isolating languages, we look to treat word formation in the lexicon as inclusive of ideophones. Previous research has been hampered by such omissions – consider the following quote, “Although it is conceivable that ideophonic expressions, particularly those employed to describe physical objects (e.g., *roboto* ‘round’) are an important source of adjectives in the language, ideophones are not considered in this study” (Madugu 1976: 86). Asides like these bring truth to the assertion by Dingemanse (2018) that the inclusion or exclusion of ideophones in analysis reshapes typology. Typology relies on more than just a list of which phenomena appear in which languages; it thrives on an understanding of how those phenomena work within as well as across languages.

Emphasis on the extralinguistic tendencies of ideophones sets them apart from the “regular” grammar of languages and may relegate them to exceptions or footnotes. Yet, language is naturally both arbitrary and non-arbitrary, and our linguistic analyses should be built to accommodate the whole lexicon, not just

the places we can most readily build rules around. It is in this leaky corner of the grammar where ideophones thrive, and where they have much to give to the study of language.

Abbreviations

1, 2, 3	1st, 2nd, 3rd person	NML	nominalizing prefix
AG	agentive	PFV	perfective
COMP	complementizer	PL	plural
IDEO	ideophone	SG	singular
INS	instrumental	REDUP	reduplicant
NEG	negative		

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Appendix: Gengbe ideophones

<i>bàdàbàdà</i>	(phen) speaking bitterly
<i>bê</i>	(phon) goat bleat
<i>cųĩm</i>	(phen) bird/plane rising; car speeding by; fast moving object
<i>cųĩmcųĩm</i>	(phen) object repeatedly moving fast or rising
<i>dàbúdàbú</i>	(phon) person walking in water and raising feet out of water
<i>ḍzàgùḍzàgù</i>	(phon) heavy person or elephant walking through mud
<i>ḍzé ḍzé</i>	(phon) people chattering loudly with tense or negative feeling
<i>ḍzì</i>	(phen) light person taking a step
<i>ḍzì ḍzì</i>	(phon) light person walking
<i>ḍzìrà::</i>	(phen/phon) large animal dashing away
<i>ḍzìrà?</i>	(phen/phon) lion lunging
<i>gbàí:</i>	(phon) large bell

<i>gbà̀m</i>	(phon) crash (lengthen [m] for a bigger crash)
<i>gbì</i>	(phon/phen) heavy person stepping in sand/mud/tall grass
<i>gbì</i>	(phon) large thing hitting the ground
<i>gbìgbì</i>	(phon/phen) heavy person walking in sand/mud/tall grass
<i>gbim</i>	(phon) heavy thing hitting the ground
<i>gbìsrágbìsrá</i>	(phen/phon) a heavy and a light person walking together in sand/mud/tall grass
<i>gbógbó</i>	(phon) people chattering loudly with chaotic but positive feeling
<i>gbùm</i>	(phon) loud gunshot (lengthen [m] for echo)
<i>gbùm</i>	(phon) punch to the stomach or cheek
<i>gidìgidì</i>	(phen) squirming
<i>gím</i>	(phon) ineffective punch
<i>gim</i>	(phon) punch to the face
<i>gimgim</i>	(phen) heavy person walking quickly
<i>glàḍzàglàḍzà</i>	(phen/phon) car on rough road; horse gallop; clumsy person running
<i>glàmàglàmà</i>	(phen/phon) person or object swaying side to side
<i>glòḍzò</i>	(phen/phon) big truck stopping
<i>glòḍzòglòḍzò</i>	(phen/phon) drunk person walking; car on a rough road; truck passing
<i>gràgrà</i>	(phen/phon) large animal running
<i>grèù grèù</i>	(phon) person crunching something with teeth
<i>gùdùgùdù</i>	(phon) fast running water; boiling water; big river running
<i>gùm</i>	(phon) punch to the ribs
<i>jò::</i>	(phen) snake moving; water flowing
<i>kàtà</i>	(phon) raindrop
<i>kàtàkàtà</i>	(phon) rainfall, especially on a roof
<i>kédê::</i>	(phen) quiet/gentle action; setting something down; opening a door
<i>kédê::kédê::</i>	(phen) hunter or predator stalking prey
<i>kédékédé</i>	(phen/phon) moving quickly and not quietly
<i>kim</i>	(phen) heavy person taking a step
<i>kimkim</i>	(phen) heavy person walking quickly; mid size person walking forcefully
<i>k̀pò</i>	(phen) chopping meat
<i>k̀pó::</i>	(phen) object sitting still
<i>k̀pó::k̀pó::</i>	(phen) sneaking quietly so as not to sleeping people

4 Morphology in Gengbe and Yoruba ideophones

<i>krikri</i>	(phen/phon) light animal (e.g. mouse) moving in the forest
<i>míàò</i>	(phon) cat cry
<i>mû</i>	(phon) cow moo
<i>nâ::nâ::</i>	(phen) sick/tired/injured person or animal walking also <i>blèù::, blèùblèù</i>
<i>ńáńúńáńú</i>	(phen) person chewing
<i>pájì</i>	(phon) slap to the front of the face
<i>pê</i>	(phon) small gunshot with echo
<i>pépé</i>	(phon) small gunshot
<i>pé</i>	(phon) small thing falling or hitting the ground
<i>pípí</i>	(phon) car horn
<i>pô</i>	(phon) slap on the bottom with cupped hand
<i>φím</i>	(phen) light person taking a step
<i>φímφím</i>	(phen) light person walking quickly
<i>srá</i>	(phen) light person stepping in sand/mud/tall grass
<i>srásrá</i>	(phen/phon) light person walking in sand/mud/tall grass
<i>sss</i>	(phon) snake moving through grass
<i>juríjurí</i>	(phon) people speaking a language that is not understood
<i>tâ</i>	(phon) slap on the bottom with open hand
<i>tájì</i>	(phon) slap to the cheek
<i>tété</i>	(phon) popping sound like a fire crackling or oil in a pan
<i>îfákútîfákú</i>	(phen/phon) person/cow/goat chewing
<i>îfâtîfâ</i>	(phen/phon) cutting through grass/woods; chopping meat
<i>îfêîfê</i>	(phon) leaves rustling
<i>îfî::</i>	(phon) frying sound
<i>îfrâtîfrâ</i>	(phen/phon) cutting quickly/intensely through grass/woods
<i>vlàjàvlàjà</i>	(phon) walking in tall grass; moving legs through water
<i>vlàvlà</i>	(phen) person walking in water and not raising feet
<i>wô</i>	(phon) dog bark
<i>zrìm</i>	(phon) cutting
<i>βì::</i>	(phen) person/thing falling
<i>βí::βí::</i>	(phen) light person walking slowly
<i>βlàjàβlàjà</i>	(phen/phon) clumsy person walking leisurely
<i>βlìβlì</i>	(phen/phon) people/animals/cars moving in a group
<i>βù::</i>	(phen/phon) wind blowing, big fire burning
<i>βùdùβùdù</i>	(phen/phon) wind meeting resistance (e.g. trees)
<i>βuù gbìm</i>	(phen/phon) large thing falling over (e.g. elephant, car, building)

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