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Peer reviewed

# Onomatopoeia in Guébie (Kru)<sup>1</sup>

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## 1. Introduction

Guébie is an Eastern Kru (Niger-Congo) language spoken in southwest Côte d'Ivoire. The Guébie language is classed as Threatened (6b on the EGIDS scale) (Sande 2020). The data presented here were collected by the author in collaboration with native speakers of Guébie between 2013 and 2022 and represent the Guébie spoken in the largest Guébie village of Gnagbodougnoa.

Linguistically, Guébie, like other Kru languages and languages of West Africa more broadly, has very short words, mostly CV or CVCV. It is highly tonal, with four contrastive tone levels marked here with superscripts from 1–4, where 4 is high. The word order is SAuxOV when an auxiliary is present but SVO when there is no auxiliary. At first glance, the language may appear to be isolating due to its short words; however, there is quite a lot of non-concatenative morphology, as discussed in Sande (2017), and thus the language is better classified as fusion.

This chapter focuses on describing the vast system of Guébie onomatopoeias and their relationship to the rest of the language's grammatical system. Comparisons are made to other Kru languages where possible.

## 2. Position of onomatopoeia in the language system

There is a large class of sound-symbolic words in Guébie that could be called onomatopoeias, which make up a subset of a larger class of iconic sensory terms commonly called ideophones in the Africanist literature (Childs 1994; Dingemans 2012). In Guébie, like other Kru languages (Zogbo 2022), not all words in the class of ideophones are sound-symbolic, but sound-symbolic onomatopoeias and non-sound-symbolic ideophones share phonotactic and morphosyntactic traits, which leads me to treat all of them as a single class of words. The Guébie term for these words, including both onomatopoeias and non-sound-symbolic ideophones, is *kpəli*<sup>3,3</sup>, which literally means 'noise'. In the context of this volume, I focus on onomatopoeias, or sound-symbolic ideophones, though I also discuss the relationship of onomatopoeias to non-sound-related sensory imagery terms, the broader class of ideophones, and compare these to non-onomatopoeic and non-ideophonic word classes.

Zogbo (2022) discusses the linguistic behavior of ideophones in 20 Kru languages. This paper situates Guébie within the Kru typology of onomatopoeia and provides the first full-fledged descriptions of this class of words in Guébie (for a brief phonological description of onomatopoeia in Guébie, expanded upon here, see Sande 2017, 2022). The syntax and semantics of Guébie onomatopoeias are hitherto undescribed.

Onomatopoeias in Guébie form a large, open class of lexical items, though there is no single productive process for coining new onomatopoeias by imitation. There is only one instance of a borrowed onomatopoeia that I am aware of: *miao*<sup>4.1.1</sup> 'cat meowing', likely borrowed from the French *miaou*. Onomatopoeias and other ideophones in Guébie show evidence of sound symbolism. Specifically, syllabic fricatives, which involve continuous airflow, indicate continuous noises; long vowels are common among ideophones indicating a long distance in space or time; and oral plosives are common among onomatopoeias and other

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ideophones that involve instantaneous noises or events such as a gunshot *gbar*<sup>3.1</sup> or bone breaking *kpa*<sup>41</sup>. There is no obvious sound symbolism that has to do with size.

The data presented here come from a corpus of over 12,000 utterances containing over 8,000 distinct words made up of 6,000 distinct morphemes. The corpus contains a combination of elicited and transcribed natural speech collected by the author from 2013–2022. When possible, examples presented here come from natural speech.

This paper describes the class of onomatopoeia and additional sensory image terms that pattern phonologically and morphosyntactically with onomatopoeia in Guébie. The phonology, morphosyntax, and semantics of onomatopoeia are described in detail, with reference to their similarity to or difference from the non-onomatopoeic lexicon of Guébie.

### 3. Description of Onomatopoeia

This section describes the phonology, morphology, syntax, and semantics of onomatopoeia in the context of the phonological, morphosyntactic, and semantic properties of Guébie as a whole.

#### 3.1 Phonology

##### 3.1.1 Vowel and Consonant inventory

The phonemic consonants in the non-onomatopoeic lexicon of Guébie are /p, b, t, d, c, ʃ, k, g, kʷ, gʷ, kp, gb, m, n, ɲ, ŋ, ŋʷ, f, v, s, ɓ, l, j, w/ and marginally /ɲm/ and /z/. This inventory differs slightly from those found in onomatopoeias and other ideophones: /p, b, t, d, k, g, kp, gb, ʔ, m, f, v, s, ʒ, h, ɓ, l, j, w/. Notably, /h, ʒ, ʔ/ appear in onomatopoeias and other ideophones but not elsewhere in the Guébie lexicon. Some sounds are also found in the rest of the lexicon that are not found in onomatopoeias and other ideophones, such as palatal stops and the majority of the nasal consonants. This may be accidental in that these sounds do exist in sound-symbolic words but not in the set currently represented in the Guébie corpus. Velars and labials occur more frequently than alveolar and palatal consonants in onomatopoeias but not in the rest of the Guébie lexicon.

The non-ideophone lexicon in Guébie contains ten contrastive vowels (Sande 2017): /i, ɪ, e, ε, u, ʊ, o, ɔ, ə, a/. Onomatopoeias and other ideophones contain additional vowels not found elsewhere in the Guébie lexicon. In addition to the ten vowels found elsewhere in the language, nasal vowel counterparts of all vowels except the high retracted /ɪ, ʊ/ and mid advanced tongue root vowels /e, o/ are attested.

Phonotactically, in the non-onomatopoeia lexicon, words tend to contain either all -ATR or all +ATR vowels, but not a mix; this can be analyzed as ATR harmony (Sande 2017, 2019, 2022). With only a few exceptions, onomatopoeia and ideophones, too, tend to show consistent ATR values within a word. One exception to the ATR harmony generalization in an ideophone is found in [mʊəmmʊə<sup>2.4.2.4.2.4</sup>] ‘shaking’ where we see both a -ATR vowel [ʊ] and a +ATR vowel [ə].

In the non-onomatopoeia lexicon, sonorants following nasal consonants are produced as nasals. This is never violated in the attested onomatopoeia, though there are very few nasal consonants among onomatopoeia in general.

Across Kru languages, including Guébie, reduplication is a common property of onomatopoeias (Zogbo 2022). For more on reduplication, see section 3.2.

##### 3.1.2 Syllable structure

In the non-onomatopoeia lexicon of the language, syllables are all underlyingly CV or V, where only vowels can be syllable nuclei. There are no underlying consonant clusters or codas. Onomatopoeias and other ideophones violate many of these basic syllable structure principles:

there are consonantal nuclei (1), coda consonants (2), and CCV syllables (3). In CVV sequences, which are much more common than elsewhere, vowel hiatus is often repaired by glide insertion or vowel deletion (4). Still, most syllables are CV, even among onomatopoeias.

- (1a) *v̩v̩v̩*<sup>1.1.1.1</sup> ‘a car noise’  
 (1b) *v̩ff̩f̩*<sup>1.1.1.1</sup> ‘a flowing river’  
 (2) *dum*<sup>1</sup> ‘splash’  
 (3) *pja*<sup>1</sup> ‘spitting’  
 (4) *kẽẽẽ*<sup>2.2.2</sup> ‘vroom’

Typically, non-reduplicated onomatopoeias are one syllable, as in (2) and (3), or occasionally two syllables, e.g., *bijah*<sup>1.4</sup> ‘thunder crash’. There are no attested onomatopoeias containing exclusively vowels.

### 3.1.3 Stress

There is no evidence of stress in the language.

### 3.1.4 Tone

Tone plays an important role in contrasting lexical items as well as marking grammatical features (Sande 2017, 2018, 2022). The chart in Table 1 shows contrastive tone melodies on one- to three-syllable words by lexical category. Words that only surface in tonally derived contexts in the corpus (grammatical tone contexts) are left out.

Melody	N	V	A	I	Other	Loan	Sum
1	182	129	44	10	59	6	430
2	742	714	171	5	303	20	1955
3	639	566	114	5	282	9	1615
4	314	143	64	21	114	16	672
23	398	173	63	1	81	8	724
24	145	45	14	5	17	6	232
41	172	13	18	4	3	62	272
42	91	81	20	10	39	2	243
31	457	276	58	8	59	1	859
32	126	130	17	2	36	1	312
Sum	3266	2270	583	71	993	131	7314

Table 1. Tone melodies by lexical category. The three most common tone melodies of each category are in gray. The categories are abbreviated as follows: N=Noun, V=Verb, A=Modifier, I=Ideophones (including onomatopoeias), Other=Functional morphemes, Loan=Loanwords.

Note that the most common tone melodies found in ideophones and loanwords are markedly different from the rest of the lexicon. Loanwords almost always have a 41-tone melody, which is not particularly common in any other lexical category. Onomatopoeias and other ideophones almost always have an all-low or all-high tone melody (tone 1 or 4), and the next most common melody is 42, which is not particularly common in any other category. Level tone-2 and tone-3

melodies are quite uncommon among onomatopoeias and ideophones but are very common throughout most grammatical categories.<sup>2</sup>

### 3.2 Morphology and syntax

#### 3.2.1 Word formation

Regular word-formation and derivational processes in Guébie include suffixation to change word class (for example, with an agentive suffix /-ɲɔ<sup>2</sup>/ or event nominalizer /-li<sup>2</sup>/); compounding, where the second word in the compound always surfaces with a level tone-2 melody (Sande 2017), and reduplication, which has iterative, reciprocal, nominalization, and emphatic uses (the latter only in onomatopoeia) (Sande 2022). Additionally, outside of onomatopoeias and ideophones, there are several other derivational and inflectional affixes. Verbal suffixes and enclitics include causative, passive, and object markers, and nominal suffixes include singular, plural, and definite markers. The final vowel of an adjective is determined by the humanness and phonology of the noun it modifies (Sande 2019), and adjectives can, in some cases, surface with definite enclitics. Adverbs are not morphologically derived from other nouns and do not take morphology.

As shown in this section, onomatopoeias and ideophones are not subject to the same word-formation and affixation processes as other word classes. Onomatopoeias are similar to each other and to other ideophones and are unlike other lexical categories in that they can reduplicate seemingly infinitely. The more times an onomatopoeia or ideophone is reduplicated, the more emphasis is added to its meaning. For example, the ideophone ‘very fast’ appears in the corpus most often as [fafa<sup>4.4</sup>] but also as [fa<sup>4</sup>] and [fafafafa<sup>4.4.4.4</sup>]. Similarly, the onomatopoeia for laughing appears as [ga<sup>4</sup>], [gaga<sup>4.4</sup>], and [gagaga<sup>4.4.4</sup>]. Almost all onomatopoeias and ideophones that appear more than once in the corpus were produced with a different number of repetitions in each instance. With one exception, onomatopoeias and ideophones with more than one distinct syllable reduplicate both syllables, e.g., [pɔfɔpɔfɔ<sup>2.4.2.4</sup>] ‘coughing’; the exception is [pratatatata<sup>4.1.1.1.1.1</sup>], \*[prataprataprata<sup>4.1.4.1.4.1</sup>] ‘very bright’. A few onomatopoeias, particularly those that contain nasal vowels, seem to fail to reduplicate a full syllable and instead lengthen the nasal vowel, where a longer vowel corresponds to more emphasis, e.g., [kẽẽẽ<sup>2.2.2</sup>] ‘car noise’. Non-vocalic nuclei can lengthen in the same way, e.g., [ffff] ‘fire spreading’.

Onomatopoeias are not obviously derived from other lexical items, nor are other lexical items derived from them. In general, onomatopoeias do not appear with affixal morphology. The only exception in the corpus is given in (5), where the word for a machine noise surfaces with a definite enclitic.

- (5)      ɔ<sup>3</sup>                      nɔ=sɛ<sup>2.4</sup>                      kɔkɔkɔ=a<sup>4.4.4.2</sup>                      na<sup>2</sup>  
           3SG.NOM            do.IPFV=EMPH            machine.noise=DEF            Q  
           ‘Who’s making that racket?’

In (5), the onomatopoeia has the distribution of a noun, the complement of the verb ‘do’. Only nouns and noun phrases can end in definite enclitics in Guébie, so the presence of a definite article confirms that this onomatopoeia can have noun-like behavior. However, in many other contexts, onomatopoeias do not behave like nouns. For example, in (6), the onomatopoeia

<sup>2</sup> Ideophones can also display tone melodies not found in any other lexical category. Two of these are slowly falling tones (4321) and slowly rising tones (1234):

ɛ <sup>3</sup>	wɔtɔ <sup>1.1</sup>	kɔ <sup>3</sup>	bɔ̃ɔ̃ɔ̃ <sup>4.3.2.1</sup>
3SG.NOM	be.cold	PART	very.cold
‘It’s getting very cold’			

seems to be verbal; all Guébie sentences must contain a verb, which always appears immediately after the subject of the sentence unless an auxiliary is present.

- (6)     $\sigma^3$                      $\epsilon ja^{3.1}$      $sa^3$                      $gbrigbrigbrigbrigi^{3.1.3.1.31}$   
          3SG.NOM                and        DEM.PRO                fighting.noise  
          ‘He and that guy fought.’

In other contexts, onomatopoeias seem to behave morphosyntactically and semantically like adverbs, modifying the way a verb is carried out. For example, in (7), the onomatopoeia ‘chewing’ follows the verb ‘eat’ to mean that the subject is chewing loudly while eating. Similarly, in (8), the onomatopoeia modifies the way the wind arrives. The verbs ‘eat’ and ‘come’ need not appear with an overt object in Guébie, so there is no reason to believe the onomatopoeias in (7-8) are nominal.<sup>3</sup>

- (7)     $e^2$                      $li^2$                      $\acute{b}wa\acute{b}wa\acute{b}wa^{1.1.1}$   
          2SG.NOM                eat.IPFV                chewing.noise  
          ‘You’re chewing loudly.’

- (8)     $fufu^{2.3}$                  $\sigma^3$                      $ji^3$                      $v\tilde{v}\tilde{v}^{1.1.1.1}$   
          wind                    3SG.NOM                come.PFV                blowing.noise  
          ‘The wind came blowing in.’

### 3.2.2 Syntax

Objects of verbs occur after the verb if no auxiliary is present, SVO, but between the auxiliary and verb if there is an auxiliary, SAuxOV. Onomatopoeias can appear in both of these positions with nominal-like syntax (9).

- (9)     $wa^3$                      $ji^3$                      $gb\acute{o}gb\acute{o}gb\acute{o}gb\acute{o}^{1.1.1.1}$      $n\sigma^3$   
          3PL.NOM                FUT                hammering.noise        do  
          ‘They will make hammering noises.’

- (10)     $wa^3$                      $n\sigma^3$                      $gb\acute{o}gb\acute{o}gb\acute{o}gb\acute{o}^{1.1.1.1}$   
          3PL.NOM                do.PFV                hammering.noise  
          ‘They made hammering noises.’

Onomatopoeias and other ideophones often occur clause-finally, though they need not. In fact, the same onomatopoeia in a single semantic context can appear clause-initially, clause-finally, or between the auxiliary and verb if both are present (11). This syntactic distribution is quite like the distribution of adverbs in Guébie. However, onomatopoeias, unlike adverbs, can also appear in nominal (5, 9, 10) and verbal (6) morphosyntactic positions.

- (11a)     $\sigma^3$                      $ji^3$                      $titi^{4.4}$                  $d\acute{o}kv-gb\epsilon^{2.3.3}$

<sup>3</sup> Non-onomatopoeic ideophones commonly follow stative verbs, in which case they have an emphatic meaning. Many ideophones can only be used, or are most commonly used, with a single stative verb and emphasize the meaning of that verb:

- a.     $\epsilon^3$                      $kpra^3$                      $pr\acute{o}pr\acute{o}pr\acute{o}^{1.1.1}$   
          3SG.NOM                be.sharp                very.sharp  
          ‘It’s very sharp.’
- b.     $\sigma^3$                      $nan\epsilon^{4.4}$                  $mj\acute{o}mj\acute{o}mj\acute{o}^{1.1.1}$   
          3SG.NOM                be.beautiful                very.beautiful  
          ‘She’s very beautiful.’

3SG.NOM FUT really PART-sit  
 ‘He will really sit.’

(11b)  $\text{ɔ}^3$   $\text{ji}^3$   $\text{dɔkv-gbɛ}^{2.3.3}$   $\text{titi}^{4.4}$   
 3SG.NOM FUT PART-sit really  
 ‘He will really sit.’

The fact that onomatopoeias and ideophones can appear in morphosyntactic positions typical of nouns, verbs, and adverbs makes them distinct from other lexical categories. Additionally, their lack of typical nominal, verbal, or adjectival morphology and the ability of onomatopoeias and ideophones, but not other words, to undergo emphatic reduplication distinguishes them morphosyntactically as a lexical class. Creissels (2001) identifies three morphosyntactic uses of ideophones: 1) they appear with and modify a specific verb or set of verbs (see fn. 3), 2) they appear with a verb like ‘be/do/say’ in which case the event meaning is entirely determined by the meaning of the onomatopoeia, or 3) they appear instead of a verb in an otherwise verbless clause. All three of these uses are found in Guébie, as are additional nominal uses (5, 9, 10).

### 3.3 Semantics

#### 3.3.1 General

There are onomatopoeias in Guébie that express the movement or sound of water, air, fire, animals, humans, musical instruments, vehicles, and machinery (see the appendix). These are phonologically and morphosyntactically similar to the class of non-sound-symbolic ideophones that express the intensity of some characteristic, such as color, temperature, or feeling.<sup>4</sup>

Onomatopoeias that have the semantics of the movement or sound of some element, item, or being are very commonly used in Guébie. A non-exhaustive list of examples is given in the appendix. Onomatopoeias are listed with the number of syllables they were most frequently produced with in the corpus, though most can be produced with a single syllable (or a single instance of each distinct syllable) or reduplicated repeatedly for emphasis, as described in section 3.2.

Absent from the meanings of Guébie onomatopoeias are earth-related noises like the sounds of trees, stones, leaves, and earthquakes. There are also no onomatopoeias for fish noises or movements, likely because there are no large bodies of water near the Gagnoa Guébie villages.

Non-sound-symbolic ideophones express the intensity of some other sensory characteristic (12–17). Non-onomatopoeic ideophones are phonologically and morphosyntactically indistinguishable from onomatopoeic ideophones. Guébie speakers clearly conceive of the non-sound-symbolic ideophones as part of the same class as onomatopoeias, as evidenced by this quote from one speaker: “I wonder why we have words for the sound of a color or temperature.” Guébie speakers also use the term *kpəli*<sup>3</sup> ‘noise’ to refer to both sound-symbolic onomatopoeias and non-sound-symbolic ideophones.

<sup>4</sup> There is also a class of interjections, though these are phonotactically and morphosyntactically distinct from onomatopoeias and ideophones. Interjections in Guébie are used in isolation to express a reaction, similar to ‘Oh!’ or ‘Ow!’ in English. They cannot be reduplicated for emphasis. See Meinard (2015) for more on interjections as distinct from ideophones.

a.	$\text{ɔ}^{31}$	Hey! (attention-getting)
b.	$\text{ã}^3$	Oh! (surprise)
c.	$\text{a}^{41}$	Ow! (pain)

(12) Colors<sup>5</sup>

- a. *pɔɔɔ*<sup>4.4.4</sup> ‘very white’
- b. *gbɔɔ*<sup>4.2</sup> ‘very red’
- c. *kplii*<sup>2.4.1</sup> ‘very dark’

(13) Temperature

- a. *bɔ̃ɔ̃ɔ̃ɔ̃*<sup>4.3.2.1</sup> ‘very cold’
- b. *kprɔkprɔ*<sup>1.1</sup> ‘very hot’

(14) Other physical traits

- a. *prɔprɔprɔ*<sup>1.1.1</sup> ‘very sharp’
- b. *pratataatata*<sup>4.1.1.1.1.1</sup> ‘very bright’
- c. *mjɔmjɔmjɔ*<sup>1.1.1</sup> ‘very beautiful’
- d. *fafa*<sup>4.4</sup> ‘very fast’

(15) Feelings

- a. *dododo*<sup>2.4.3</sup> ‘very calm’

(16) Distance in space and time

- a. *gaaa*<sup>1.1.1</sup> ‘a very long time’
- b. *tuuu*<sup>4</sup> ‘very far’

(17) Intensity

- a. *titi*<sup>4.4</sup> ‘very, a lot’
- b. *vru*<sup>1</sup> ‘many’
- c. *kɛɛɛ*<sup>3.1</sup> ‘a lot’
- d. *kakakaka*<sup>3.3.3.3</sup> ‘a lot’
- e. *kẽkẽkẽ*<sup>2.2.2</sup> ‘a lot’

The morphosyntactic and phonological properties of onomatopoeias and ideophones in Guébie overlap significantly with those found in other Kru languages (Zogbo 2022) and African languages in general (Childs 1994; Creissels 2001; Blench 2010; Dingemans 2012). Dingemans (2012: 663) presents a semantic hierarchy of sensory meanings where onomatopoeias are the most common and cognitive states the least common: sound < movement < visual patterns < other sensory perceptions < inner feelings and cognitive states (see also McLean 2021). As predicted, the semantic range of Guébie sensory words includes a consecutive set of the meanings in this hierarchy (sound, movement, visual patterns, other sensory patterns, and feelings), but it does not include cognitive states.

### 3.3.2 Semantic relations

There is some evidence that the meaning of a few ideophones in Guébie is being semantically extended outside of their onomatopoeic use. For example, the onomatopoeia [*pɔɔpɔɔpɔɔ*<sup>1.3.1.3.1.3</sup>] means the noise that is made when builders are creating holes in the ground that will support a house. However, the term has recently been extended to be used as a noun that refers to the posts that are placed in these holes to support houses. This could be analyzed as a case of conversion. However, based on the attested data, it is not clear that this

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<sup>5</sup> Some limited data suggest that the vowel of the color ideophones may alternate depending on the vowel(s) in the noun whose color is being described (e.g., *pɛɛɛ*<sup>4.4.4</sup>/*pɔɔɔ*<sup>4.4.4</sup> ‘very white’). More work is needed to determine whether this alternation is systematic or whether, perhaps, there are distinct ideophones meaning ‘very white’ that are used with different nouns and/or adjectives.

semantic extension or conversion of onomatopoeias to novel meanings is systematic; that is, not all onomatopoeias can be used in this way.

A few onomatopoeias seem to be synonymous and are used by the same speaker in the same context in the corpus. For example, in an elicitation context, to say ‘he is chewing loudly’, one speaker provided two possible sentences, differing only in the onomatopoeia used: [mwām wām wā<sup>1.1.1</sup>] or [ɓwafwafwa<sup>1.1.1</sup>]. Similarly, for ideophones, one speaker told the same story about a panther and a rat twice. In one instance, when the panther is shaking, he used [kumukumu<sup>4.2.4.2</sup>], and in the other instance, he used [mʊəmʊəmʊə<sup>2.4.2.4.2.4</sup>]. Despite this variation or synonymy, the onomatopoeias used for a particular meaning are generally quite consistent within and across speakers. There is no evidence of polysemy among ideophones in Guébie.

#### 4. Conclusions

This chapter represents the first thorough description of onomatopoeias and ideophones in Guébie. Onomatopoeias in Guébie are phonologically and morphosyntactically like other sensory-depicting ideophones and are distinct from other lexical categories. Onomatopoeias and ideophones contain sounds not found elsewhere in the language, such as contrastive nasal vowels. They often have all-low or all-high tone melodies, which are uncommon in other lexical categories. These phonological traits could be analyzed as making onomatopoeias and ideophones more distinct from other words to draw attention to them. Onomatopoeias and ideophones also differ from other categories in their ability to reduplicate many times for emphasis. Morphosyntactically, onomatopoeia and ideophones can appear with the distribution of nominal, verbal, clausal, or adverbial elements, while words of other categories have a much more restricted distribution. Semantically, onomatopoeias in Guébie have the meanings of noises and movements, while the broader category of ideophones also encompasses the meanings of visual and other sensory patterns.

The properties of onomatopoeias and ideophones in Guébie are similar to what has previously been described for other Kru languages (Zogbo 2022) and African languages in general (Childs 1994; Creissels 2001; Blench 2010; Dingemans 2012). One interesting difference is that while the number of instances of repetition in other Kru languages is fixed for each distinct onomatopoeia or ideophone (Zogbo 2022), the number of repetitions of each onomatopoeia and ideophone in Guébie is not fixed but varies with emphasis.

#### List of abbreviations

SG singular, NOM nominative, IPFV imperfective, EMPH, emphatic, PART particle, DEF definite, DEM.PRO demonstrative pronoun, PFV perfective, FUT future

#### Appendix

NATURAL SOUNDS	SOUND TYPES		ONOMATOPOEIA	MEANING
	4 ELEMENTS	WATER		dum <sup>1</sup>
			kakakakaka <sup>4.4.4.4.4</sup>	rain fall
AIR			ṽṽṽ <sup>1.1.1.1</sup>	blowing wind
			ɓijah <sup>1.4</sup>	thunder crash
EARTH				
FIRE		ffff	fire spreading	

	ANIMALS		vvvv <sup>3.3.3.3</sup>	fire crackling
		MAMMALS	wɔwɔwɔ <sup>3.1.3.1</sup>	dog barking
			miau <sup>4.1.1</sup>	cat meowing
		BIRDS	kɔkɔkɔ <sup>2.3.4.2</sup>	rooster crowing
			kukukukukuku <sup>1.4.4.4.4.4</sup>	pigeon cooing
		REPTILES AND AMPHIBIANTS	kwaakwa <sup>1.1.1.1</sup>	frog ribbiting
	INSECTS	fii <sup>4.4.4</sup>	mosquito or fly buzzing	
	FISH AND SEA CREATURES			
HUMAN	VOICE	gagaga <sup>4.4.4</sup>	laughing	
		sososososo <sup>1.1.1.1.1.1</sup>	singing	
	BODY	tutututu <sup>1.1.1.1</sup> , gbugbugbu <sup>1.1.1</sup>	heart beating	
		swaswaswaswaswa <sup>2.2.2.2.2</sup>	footsteps	
ARTIFACTS	MUSICAL INSTRUMENTS	butbutubutu <sup>1.1.1.1.1.1</sup>	drumming	
	VEHICLES	kẽẽ <sup>2.2.2</sup>	car noise (vroom)	
		vũũ <sup>1.2.4.1</sup>	car passing (doppler effect)	
	MECHANICAL AND ELECTRONIC EQUIPMENT AND DEVICES	gbɔgbɔgbɔgbɔ <sup>1.1.1.1</sup>	hammering	
		krɔkrɔkrɔkrɔ <sup>4.4.4.4</sup>	machine noise	
	INSTRUMENTS OF WAR AND DESTRUCTION	gbar <sup>3.1</sup> , gboo <sup>1.1</sup>	gun shot	
	BELLS, GONGS AND OTHER SIGNALING EQUIPMENT	tuu <sup>4.4.4</sup>	car horn	

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