Onomatopoeias in Closely Related Languages:
The Case of Mingang Doso and Dza

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This article is dedicated to onomatopoeias in two Jen (Adamawa, Niger Congo) varieties spoken in North-Eastern Nigeria: Dza and Mingang Doso. By analyzing 136 onomatopoeic lexemes within typologically informed prototype theory the authors conclude the following: although certain divergences are attested, onomatopoeias in Dza and Mingang Doso largely comply with the profile associated with an onomatopoeic prototype with regard to semantics, phonetics, morphology, and syntax. While the categories of onomatopoeias exhibit similar extents of canonicity in Dza and Mingang Doso, the lexical similarity between onomatopoeias in the two languages is significantly lower than that attested in other word classes. These results thus provide further evidence supporting the hypothesis according to which onomatopoeias are less likely to have cognate equivalents in the languages of the same family and they are resistant to be transmitted across the history of a language (group).

Keywords: *onomatopoeias, typology, prototype, Adamawa, Jen cluster*

1 Introduction

The present article is dedicated to Mingang Doso and Dza – two varieties of the Jen language cluster – also known as Burak-Jen (Bennett 1983) and Bikwin-Jen (Kleinewillinghöfer 1996) – that are spoken some 30 km from each other in the Karim-Lamido Area of the Taraba State in the North-Eastern Nigeria. Mingang Doso [mìŋgã̀ dɔ̀sɔ̀] (catalogued with the ISO639-3 identifier [MKO] and the glottocode [ming1254]) is spoken in the village of Munga and the adjacent settlements by some 3.000 native speakers (Campbell et al. 2017; Eberhard, Simons & Fennig 2022).[1] Mingang Doso is regarded as 'shifting' – level 7 on the language endangerment scale (Campbell et al. 2017; glottology.org). That is, although the variety is relatively widely used by a child-bearing generation (i.e., parents), its transmission to children is increasingly compromised and less successful. Dza [d͡zə̀] (catalogued with the respective identifiers [JEN] and [dzaa1238]) is spoken in the village of Jen and the surrounding area.[2] The number of Dza speakers oscillates around 100.000 and the variety is viewed as threatened – level 6b on the language endangerment scale (Eberhard, Simons & Fennig 2022) – although it may be even more endangered (see Benson 2020c; cf. Othaniel 2016a).

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[1] However, the sources cited here record the situation reported in 1995.

[2] We maintain the traditional spelling of the name of the language, i.e., Dza (see Kleinewillinghöfer 1995/2015; Othaniel 2017a; Blench 2019; Norton & Othaniel 2020) rather than Dzə (cf. Othaniel 2016a-b; Benson 2020a-b).

Within the Jen language cluster, Mingang Doso and Dza form a tight phylogenetic unit, referred to as Doso-Dza (Adelberger & Kleinewillinghöfer 1992; www.glottologue). The two varieties share 90% of their core lexicon and attest to very similar phonological developments (Norton & Othaniel 2020; see especially pp. 26-27). Apart from Mingang Doso and Dza, the Jen cluster includes eight other, closely related and geographically contiguous varieties spoken in the Taraba State: Burak, Kyak, Leelau, Loo, Maghdi, Mak, Moo, and Tha (Norton & Othaniel 2020: 18-19). The Jen language cluster itself constitutes one of the branches of Adamawa languages (Norton & Othaniel 2020), which are spread across the sub-Saharan savannah belt in the area that stretches "from the mountains bordering the basins of the Middle Benue and the Lower Gongola in northeast Nigeria across the north of Cameroon to the east into Chad and the Central African Republic" (Kleinewillinghöfer 2020: 220). The Adamawa family has, in turn, traditionally – although not without contestation (see Blench 2012; n.d.) – been considered to belong to the Savannas linguistic group within the Niger-Congo linguistic realm (Kleinewillinghöfer 2016; 2020; Güldemann 2018: 207).

Despite their number and areal extent, Adamawa languages, including the Jen cluster, are among "the least documented" on the African continent (Kleinewillinghöfer 2020: 220). Mingang Doso and Dza can be viewed as a case in point. The only data available on the Mingang Doso language are two 100- and 300-entry wordlists compiled as part of comparative studies on the Jen cluster (Kleinewillinghöfer 1995/2015; Othaniel 2017b), an unfinished translation of the New Testament, and a grammatical sketch (Benson & Andrason 2022). Dza is also under-studied although thanks to the laudable work of Nlabephee Othaniel and Peace Benson, this situation is currently changing and certain features of Dza have been described: phonetics/phonology (Othaniel 2016a; 2017a; 2022), noun phrases (Benson 2020a; Benson & Ayieko 2019), ideophones (Benson 2020b), and verbal morphosyntax (Othaniel 2020), as well as language contact with Hausa (Benson 2020c; see also a general outline of the Dza grammar authored by Othaniel (2016a)).

The present article aims to alleviate a scholarly lacuna in the knowledge of Mingang Doso and Dza by describing and analyzing a grammatical category that is also heavily under-researched in the languages of Africa – onomatopoeias. The study is developed within typologically driven, prototype approach to onomatopoeias (Andrason, Phiri & Fehn forthcoming) and responds to the following research question: Is the compliance of Mingang Doso and Dza onomatopoeias with the typological prototype identical or, on the contrary, do the two varieties exhibit varying extents of the prototype's instantiation? This question encompasses two more specific enquiries: (a) testing Mingang Doso and Dza onomatopoeias against the onomatopoeic prototype and (b) comparing the onomatopoeias in Mingang Doso with those attested in Dza, including the presence of shared (possibly cognate) lexemes.

To achieve this goal, we will start our article by familiarizing the reader with the framework that underlies our study (Section 2). Subsequently, we will introduce original data from Mingang Doso and Dza (Section 3). After that, we will evaluate our results within the adopted framework, answer the research question, and explain how our study contributes to the general theory of onomatopoeias (Section 4). At the end, we will draw conclusions and propose avenues for future research (Section 5).

2 Framework

In our study of onomatopoeias, we follow the method used by Andrason, Phiri & Fehn (forthcoming) in their article dedicated to a Kalahari Khoe language, Tjwao. That is, we collect onomatopoeias with the help of an operationalized (and inevitably simplified) definition and test the collected items for their compliance with a typologically driven onomatopoeic prototype.

Following Andrason, Phiri & Fehn (forthcoming), onomatopoeias are operationally defined as lexemes that depict – i.e., mimic, simulate, or imitate – sounds existing in the real world. This depicting character of onomatopoeias or their iconicity can be of two types: imagic or diagrammatic. The former exploits "absolute or natural resemblance between a real-world sound and the lexeme"; the latter exploits "relative or relational similarity between reality and language" (ibid.; see also Klamer 2001; Nänny and Fischer 2006). Given their depicting nature, onomatopoeias form part of the larger lexical class of ideophones (Dingemanse 2012; Andrason, Phiri & Fehn forthcoming).

Onomatopoeias collected with the definition provided above are expected to comply with a set of semantic, phonetic, morphological, and syntactic properties that Andrason, Phiri & Fehn (forthcoming) view as inherent to an onomatopoeic prototype. The prototypical character of these properties has been hypothesized given their crosslinguistic pervasiveness in lexemes that are viewed as onomatopoeias and/or the saliency with which they (i.e., these properties) distinguish onomatopoeias from the other grammatical categories. By drawing on the studies authored by Ameka (1992, 2006), Rubino (2001), Childs (1994, 2003), Voeltz & Kilian-Hatz (2001), Reay (2006), Dingemanse (2011, 2012, 2014, 2015, 2017), Feist (2012), Lahti, Barrett and Webster (2014), Meinard (2015), Stange (2016), Ibarretxe-Antuñano (2017), Körtvélyessy (2020), and Andrason (2020), and complementing them with original Kalahari Khoi evidence, Andrason, Phiri & Fehn (forthcoming) propose the following prototypical onomatopoeic properties:

(a) Regarding semantics, a prototypical onomatopoeia "entertain[s] a referential function" (Andrason, Phiri & Fehn forthcoming): by "point[ing] at external noises, [it] focus[es] on an object of conceptualization" (Meinard 2014: 157).[3] Specifically, onomatopoeias express sounds produced by people and other living species (either vocal or non-vocal) as well as sounds made by natural phenomena and immaterial things (Körtvélyessy & Štekauer 2020). The meaning of a prototypical onomatopoeia is specialized or (nearly) monosemous, namely, a specific sound produced by a specific referent (Andrason, Phiri & Fehn forthcoming).

(b) Regarding phonetics, a prototypical onomatopoeia allows for extra-systematic phones and phonotactics (e.g., onsets, codas, and syllable structures). This extra-systematicity is visible in the fact that some sounds and sound combinations are absent or rare in the language in which onomatopoeias occur. However, extra-systematic sounds may also be foreign to languages in general, i.e., unattested in the lexical classes other than onomatopoeias (as well as ideophones, interjections, and conative calls) and therefore likewise absent in the International Phonetic Alphabet. A prototypical onomatopoeia

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[3] See the term "representative/referential interjections" used by Daković (2006: 62) when classifying onomatopoeias in Slavonic languages.

extensively exploits suprasegmental features such as tone and length, as well as prosody and intonation. Often such suprasegmental features transgress rules operating in other categories found in a hosting language: onomatopoeias make use of more degrees of vocalic and consonantal length and/or distinct tonal patterns, even in languages where length and tone are absent or untypical; they are also realized with "special phonation, air stream intensity, and melody" (Andrason, Phiri & Fehn forthcoming). Pluri-syllabic onomatopoeias exhibit rhythmic, harmonious, rhyme-like patterns (ibid.).

(c) Regarding morphology, a prototypical onomatopoeia is an underived, "pure creation" matrix (Meinard 2015: 151). It is mono-morphemic and does not contain inflections and derivations, nor does it make use of compounding mechanisms (Andrason, Phiri & Fehn forthcoming). It may however exploit replications (reduplications, triplications, and more complex sequences) – with or without vowel alternation and linking elements – as well as repetitions. All such sequences have a more expressive/phonetic rather than semantic/derivative function.

(d) Regarding syntax, a prototypical onomatopoeia is isolated. When used in a sentence, it is extra-clausal, topologically peripheral (appears in the left or right periphery) and separated by pause and/or contouring from the other sentential elements (Andrason, Phiri & Fehn forthcoming; see also Körtvélyessy 2020 and Heine 2023).[4]

The prototype of an onomatopoeia is an ideal that has been designed by linguists and is used to organize the category rather than to define it. The onomatopoeic category itself contains all and any instantiations of the prototype attested in the languages of the world – these may, however, comply with the prototype to a larger or lesser degree. Those onomatopoeias that match the prototype fully are canonical; those that match it to some extent, are semi-canonical; and those that match it only minimally are non-canonical. This means, in turn, that all the prototypical features can be (to a greater or lesser extent) violated without relegating a particular instantiation outside of the category.[5] As a result, the onomatopoeic category becomes flexible. By exhibiting varying degrees of canonicity, categorial members form a network that radiates from the core exemplified by the prototype to the periphery, where it transmutes into other grammatical taxa (Andrason, Phiri & Fehn forthcoming; regarding the prototype approach and radial network see Evans & Green; Janda 2015; Andrason & Dlali 2020).

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[4] While such extra-systematic syntactic properties are certainly prototypical, my own research suggests that onomatopoeias have "inherent" ability to be syntagmatic and thus syntactically systematic. That is, even the canonical onomatopoeias can be used as predicates or parts of predicates (in such cases they have their own argument structure) as well as modifiers (of verbs/adjectives and, perhaps less so, nouns). This in turn motivates their common grammaticalization into genuine verbs, complex predicates, adverbs, and adjectives (Andrason 2021a; Andrason & Heine 2023).

[5] For instance: due to metaphorical and/or metonymic extensions, onomatopoeias can be polysemous (Akita 2013); most onomatopoeias do not contain extra-systematic phones (it is the ability that is typical and not their frequency; Andrason, Phiri & Fehn forthcoming); onomatopoeias are often clause-internal which prompts their grammaticalization into verbs, adverbs, and adjectives (Andrason & Heine 2023). In some languages, e.g., in English and Slovak, onomatopoeias tend to be systematic, thus violating several prototypical phonetic and morphological properties (Körtvélyessy 2020).

As far as their origin is concerned, onomatopoeias can be etymological (primary) or non-etymological (secondary). That is, they may result from direct imitation, from the exploitation of phonesthemes associated with certain imitative functions and their analogical extension, from borrowing from other languages, from folk etymological reinterpretations, and from recruiting other lexical classes for onomatopoeic purposes (Körtvélyessy 2020: 36; Körtvélyessy & Štekauer 2020: 336; Andrason 2021b; Andrason, Phiri & Fehn forthcoming). In conformity with the prototype, direct imitations (or pure-creation matrices) predominate whereas borrowing is less common (Andrason, Phiri & Fehn forthcoming). While this fact seems to demonstrate that onomatopoeias are mostly created language internally rather than language externally (i.e., due to language contact), little is known about the perseverance of language-internal onomatopoeias during the history of a language and thus the phylogenetic and family-related properties of onomatopoeias.

Indeed, comparative studies that would demonstrate the properties of onomatopoeias in related languages and reveal their phylogenetic characteristics are extremely scarce. To our knowledge, the only language family in which onomatopoeias have systematically been analyzed from a comparative perspective are Slavonic languages (Daković 2006). Interestingly, the examination of onomatopoeias in Polish, Russian, Serbian, and Croatian shows that non-cognate onomatopoeias (i.e., those that do not share form (and meaning) across these languages) are more numerous than cognate onomatopoeias (i.e., those that share their form (and meaning); ibid. 146-153). This suggests, in turn, that onomatopoeias are transmitted with difficulty across the history of a language group and rather tend to be "renewed" in different branching varieties.

Therefore, in addition to documenting onomatopoeias in Dza and Mingang Doso (two under-researched varieties) and testing them with regard to their compliance with the crosslinguistic prototype, the present article also aims to provide empirical evidence that examines the phylogenetic behavior of onomatopoeias in closely related languages. Are onomatopoeias in the Dza-Doso cluster generally similar (and thus likely originate from a common ancestor) or, like in Slavonic languages, do they tend to differ (and have distinct sources); and what is the extent of this similarity or divergence?

3 Data

The evidence presented in this section draws on the fieldwork that was conducted in the Karim-Lamido Area of the Taraba State in the North-Eastern Nigeria in April and May 2022. During these research activities, which formed part of a wider research project aimed at documenting and describing elements of the grammar and lexicon of Dza and Mingang Doso (see Benson & Andrason 2022), we collected not only onomatopoeias but also ideophones, more broadly.

The first part of our fieldwork was dedicated to Dza and carried out in the Jakka, Pənzhi, Nwabang, Angwan Sarki, and Və Ngwashi districts of the village Jen – the cultural center of the Dza people and the place with the highest concentration of Dza speakers. The second part of the fieldwork was dedicated to Mingang Doso and carried out in Munga – the only village where this variety is spoken. In Munga, the data were collected in the settlements (or clan areas) of Bunkaubu, Bugbamui, and Mundang.

Onomatopoeias were collected through three methods: elicitation, translation, and linguistic introspection (i.e., native-speaker competence of one of the authors). A few tokens were extracted from natural speech examples. We interviewed 14 speakers in total: six of Dza and eight of Mingang Doso. The interviews were conducted in Dza, which is also mutually intelligible with Doso. During the fieldwork dedicated to onomatopoeias and ideophones, we recorded 73 audio files with the total length of 341 minutes (3,57 GB). Overall, the collected material comprises of folktales, songs, life narratives, proverbs, poems, and spontaneous conversations.

The table below presents the 136 onomatopoeias which we gathered over the course of our fieldwork by means of the operationalized definition introduced in section 1. For Dza, we collected 67 lexemes, while for Mingang Doso there were 69. The onomatopoeias are transcribed with the International Phonetic Alphabet, arranged alphabetically (for Dza), and accompanied by a concise description of their meaning.

Table 1: Onomatopoeias in Dza and Mingang Doso

Dza (D)	Mingang Doso (M)	meaning, i.e., sound (of)
át͡sɨ́-át͡sɨ́	èt͡ʃá (èt͡ʃá)	sneezing
	àt͡sɨ́ (àt͡sɨ́)	
bjɛ̃-bjɛ̃	ʃɛ̃	water boiling
brí	fì.ằw.ù (fì.ằw.ù)	birds flying or fluttering
búm	bú:m	something exploding
dùbɨ́ŋ	t͡ʃùl	small stone falling into water
dùbɨ́ŋ-dùbɨ́ŋ	t͡ʃùbúl-t͡ʃùbúl	walking on water
dúm	t͡ʃùbúl	a big stone falling into water
ə́h	ə́h (ə́h)	having hiccup
ʔ		
fù	fàb	a snake hissing
fũ̀::	hɨ̀ɲȭw	a cat hissing
gàt͡ɔ́-gàt͡ɔ́	gɨ́t-gɨ́t	a horse galloping
gɨ́-gɨ́	gúl	heart beating
gɨ́n-gɨ́n	gɨ́n-gɨ́n	banging the door
gɨ́tɨ́-gɨ́tɨ́	t͡ʃáp-t͡ʃáp	jumping
gjú-gjú	ùh-ùh (ùh-ùh)	made by an owl
gùbɨ́ŋ	gúk	swallowing something
	gùlúk	
há	hà:	yawning
há-há	kwɑ̃́w (kwɑ̃́w)	made by a crow
há-há-há (há)	hé-hé-hé (hé)	laughing loudly
hē (hē hē)	hm̀:: (hm̀::)	singing

hē:-hē:-hē: (hē:-hē:-hē:)	hē::hèhè (hē::hèhè)	crying
hì (hì)	hì:-hì:	made by a horse
hɔ́-hɔ́	kwì::hɔ́-hɔ́	made by a pig
hɔ̀hŭ-hɔ̀hŭ	ɔ̂::í (ɔ̂::í)	made by a donkey
hù::w	t͡ʃùŋ	a pipe puffing
húw-ùh-húw	kjȅk-kjȅ(k)	made by a goose
hwɛ̃́::	fìnìnì-fìnìnì	made by a bee or fly flying
hwì-hwì	hwít (hwít)	whistling
kát	k͡pám	locking something
kə́n-kə́n	ríp-ríp	hitting against something
kì-kì	kjàk-kjàk	a clock ticking
kìlíŋ-kìlíŋ	k͡pìrín-k͡pìrín	a bell ringing
kɔ̃́:hrŭ	kɔ̃́gòŋ-gòŋ	snoring
kɔ́kɔ̀kɔ̀-kɔ́kɔ̀kɔ̀	t͡ʃáw-t͡ʃáw	made by a chicken or hen
k͡pɑ́-k͡pɑ́	krìm (krìm)	chomping, crunching, cracking, munching
kú::kú::	kûkû (kûkû)	made by a cuckoo
kũ̀::	àw	belching or burping
kúkùlùkú:	kû:kùkùrūkú:	made by a cock
kwə́hɛ̀-kwə́hɛ̀	kwə̀hɛ́k-kwə̀hɛ́k	coughing
kwɛ̃́-kwɛ̃́	kjȅk-kjȅk	rocking and swinging
mbɛ̀::	mbɛ́:: (mbɛ́::)	sound made by sheep
mìjɔ́-mìjɔ́	mìɲãw	a cat meowing
mò::	mò::(mò::)	a cow mooing
ɔ́	ə̀k	puking
ɔ́-ɔ́	ɔ̂-ɔ̂ (ɔ̂-ɔ̂)	made by a frog
ɔ̂::(ɔ̂::)	ɲ̀ɨ̏:: (ɲ̀ɨ̏::)	a dog growling
p	fɨ̃w (fɨ̃w)	blowing
pá-pá	pwák-pwák	clapping
pɔ̀n	ʔ	smacking one's tongue or lips, squelching
pjá	ʃár	peeing
pjɔ̀	pjə̀m	spitting
põ̀-põ̀	pù::t (pù::t)	a trumpet
pù	bùt	passing wind
pwá	pwá	fire(wood) cracking
pwá-pwá	gɔ́w	a gun shooting
ʃɔ̀-ʃɔ̀	ʃák-ʃák	a tam-tam / tambour / drum

	kp͡ɨ́m -kp͡ɨ́m	
tím	g͡bám	falling down
t͡ʃwə́n-t͡ʃwə́n	kp͡ə̀ʊ̀-kp͡ə̀ʊ̀	water drops dripping
ùh	ù:-ù:	a wolf howling
ùh-húm (húm)	kìrí (kìrí)	laughing lightly
vú:m-vú:m	jùm-jùm	a car hooting
wí-wí-wí	jú-jú	siren of an ambulance / police car
wú (wú)	wǔn (wǔn)	a dog barking
wú::n-wú::n	fíɲâw	a (moto)car or motor working
wùf	wùb	slurping
wù::	vū:: (vū::)	wind blowing

3.1 Properties

3.1.1 Semantics

All onomatopoeias collected in our fieldwork are referential content lexemes. By imitating and pointing to a particular noise present in the real world, they center an object of depiction (Meinard 2014: 157-158). For instance, the lexemes D *wú* and M *wǔn* mimic and express a sharp, explosive, and aggressive sound made by dogs. This relationship with objects of conceptualization and an orientation towards real-world referents is even more tangible in another common use of onomatopoeias. In Dza and Mingang Doso, onomatopoeias represent, express, and denote not only a sound produced in the real world but also the action, activity, or event associated with that sound. For example, in the case of D *wú* / M *wǔn* mentioned above, the two lexemes depict not only the sound made by a dog ('woof') but also the action of producing this sound (i.e., barking ('(do) woof', i.e., 'bark'; of course, the language also has a special verb signifying 'bark', i.e., *dʒúdʒi*).

With regard to the referent that produces the particular sound or performs an action that leads to its production, a few types of onomatopoeias can be distinguished. The first class comprises onomatopoeias that depict sounds produced by living organisms. Animals are referents of 21 lexemes in Dza and Mingang Doso. The majority of them (12x) are domestic species: dogs and cats (e.g., D *mìjɔ́-mìjɔ́* / M *mìɲaw̌*), donkeys and horses (e.g., D *hì* / M *hì:-hì:*), cows and sheep (e.g., D *mbɛ̀::* / M *mbɛ́::*), poultry including cocks, chickens, hens, and geese (e.g., D *húw ùh-húw* / M *kjɛ̂k-kjɛ̂(k)*), and pigs (e.g., D *hɔ̌-hɔ̌* / M *kwì::hɔ̌-hɔ̌*). Wild animals are slightly less common referents of onomatopoeias (9x) in our data and the following species have onomatopoeic lexemes associated with them: cuckoos (D *kú::kú::* / M *kûkû*), crows (D *há-há* / M *kwǎw*), owls (D *gjú-gjú* / M *ùh-ùh*), and birds in general (D *brí* / M *fìǎwù*), frogs and snakes (e.g., D *fù* / M *fàb*), bees and flies (D *hwɛ̌::* / M *fìnìnì-fìnìnì*), as well as wolves (D *ùh* / M *ù:-ù:*). The animals may produce the sounds that the above-mentioned onomatopoeias mimic, in an oral manner (e.g., D/M *mò::* which depicts meowing) or a non-oral manner (e.g., D *gàtɔ́-gàtɔ́* / M *gɨ́t-gɨ́t* which depict galloping).

Humans are sources of an equal number of the onomatopoeias collected in both Dza and Mingang Doso, i.e., 21 lexemes. The human onomatopoeias typically imitate sounds made orally: snoring, coughing, crying, having hiccups, laughing, chomping/crunching, blowing, whistling, swallowing, smacking one's tongue, spitting, belching, singing, yawning, puking, and slurping (see, D *ɔ́* / M *ə̀k* and D *wùf* / M *wùb* for the last two actions).[6] In contrast, only two onomatopoeias mimic sounds exclusively made by other body parts: passing wind (D *pù* / M *bùt*) and clapping (D *pá-pá* / M *pwák-pwák*). An additional three onomatopoeias imitate sounds made by both humans and animals: jumping (D *gɨ́tɨ́-gɨ́tɨ́* / M *t͡ʃə́p-t͡ʃə́p*), walking on water (D *dùbɨ́ŋ-dùbɨ́ŋ* / M *t͡ʃùbúl-t͡ʃùbúl*), and the heart beating (D *gɨ́-gɨ́* / M *gúl*).[7]

The remaining 24 onomatopoeias have inanimate objects and phenomena as their primary referents. In this class, the following sources of the sounds can be identified: a bell (D *kɨ̀lɨ́ŋ-kɨ̀lɨ́ŋ* / M *k͡pɨ̀rín-k͡pɨ̀rín*), door (D/M *gɨ́n-gɨ́n*), stone (e.g., D *dùbɨ́ŋ* / M *t͡ʃùl*), car/engine (D *wú::n-wú::n* / M *fíɲâw*), clock (D *kì-kì* / M *kjàk-kjàk*), gun (D *pwá-pwá* / M *gə́w*), lock (D *kát* / M *k͡pám*), pipe (see D *hù::w* / M *t͡ʃùŋ*), siren (D *wí-wí-wí* / M *jú-jú*), trumpet (D *pɔ̃-pɔ̃* / M *pù::t*), as well as non-material things and phenomena such as water (D *t͡ʃwə́n-t͡ʃwə́n* / M *k͡pə̀ʊ̀-k͡pə̀ʊ̀*), wind (D *wùù:* / M *vū::*), or fire(wood) (D/M *pwá*). In certain instances, the sound produced by an object and the action associated with it may imply some additional manipulation effected by animate beings, typically humans, e.g., banging a door (D/M *gɨ́n-gɨ́n*),

Lastly, in a few cases, the referents may be both animate (human or animal) and inanimate. For example, the onomatopoeias mimicking sounds associated with rocking (D *kwɛ̃́-kwɛ̃́* / M *kjɛ̀k-kjɛ̀k*), falling down (D *tím* / M *g͡bám*), or hitting something (D *kə́n-kə́n* / M *ríp-ríp*) may have both animate and inanimate referents (see, *papa* 'grandpa' and *kəakulɨ və papa* 'grandpa's chair' that can be used with the onomatopoeia D *kwɛ̃́-kwɛ̃́*).

The above indicates that in both Dza and Mingang Doso, onomatopoeias tend to be semantically specialized: they imitate a specific sound that is produced by a specific referent and, as a result, they denote a specific action associated with that sound-referent configuration. In this regard, onomatopoeias can be viewed as (nearly) monosemous. We use the term 'nearly' because onomatopoeias do allow for some degree of polysemy.

The polysemy of onomatopoeias may stem from various sources. To begin with, from the standpoint of cognitive linguistics and, especially, the pragmatics-semantics continuum embraced by this school of thought (see Andrason & Locatell 2016: 16-23), no two contexts in a language are fully identical. Conversely, any two uses of a word or construction – including onomatopoeias – by necessity differ, even if minimally. More importantly, onomatopoeias can always be extended metaphorically to referents and actions that are different from the respective original iconic/imitative referent and action. Furthermore, some onomatopoeias allow for broader spectra of referents. For instance, rather than referring to a specific species, an onomatopoeia can point to phylogenetically related or phenotypically similar species (e.g., bees, flies, and all small flying insects: D *hwɛ̃́::* / M *fìnìnì-fìnìnì*) or depict sounds produced by any referent (see the onomatopoeias of sounds associated with jumping, rocking, swinging, cracking, hitting against, walking on water, falling down).

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[6] See also semi-orally, i.e., sneezing (where the expulsion of air occurs primarily through the nose).

[7] While this onomatopoeia is typically used with human referents, it is not incompatible with animals either. Furthermore, most human onomatopoeias may be extended to animals especially if these are personified.

Overall, in Dza and Mingang Doso, onomatopoeias may refer not only to the speaker themselves (thus pointing to the 1st person) and their interlocutor(s) (the 2nd person) but also to co-participants (the 3rd person). Accordingly, despite forming part of the class of interactives (Heine 2023), onomatopoeias allow the speaker to talk about real-world phenomena rather than only interact with reality. In doing so, onomatopoeias, both in Dza and Mingang Doso (as cross-linguistically), contrast with canonical emotives and conatives: the former are typically reflexive pointing to the emotional state of the speaker, whereas the latter are directive pointing to the interlocutor.

3.1.2 Phonetics

In the collected onomatopoeias, we did not find any extra-systematic phones. This means that at least in those onomatopoeic lexemes that are relatively entrenched in Dza and Mingang Doso and, thus, conventionalized as genuine words, the phonetic material used coincides with the sounds found in the general phonetic inventories of Dza and Mingang Doso. This however does not imply that onomatopoeias are always built around systematic sounds. On the contrary, speakers have access to more idiolectal variants that may exhibit some degree of phonetic extra-systematicity. For instance, the onomatopoeia imitating whistling can be fully "verbalized" (see D *hwì-hwì* and M *hwít*) or it can mimic whistling more directly, thus approximating the realization of an actual whistle.[8]

An extra-systematic phonetic feature that is much more visible and pervasive in Dza and Mingang Doso onomatopoeias than individual phones concerns phonotactics. Indeed, several sound combinations present in onomatopoeias are either absent or, at least, rare in the analyzed languages.

To begin with, onomatopoeias violate certain constraints on the form of word-final codas. In Dza, only [ŋ] occurs in a word-final position (Othaniel 2016b: 22-23). Onomatopoeias, in contrast, may additionally end in a stop ([t] – *kát*), fricative ([f] – *wùf*), approximant ([w] – *húw*, *ùh-húw*, *hù::w*), or fricative/approximant ([h] – *ə́h*, *ùh*). The extra-systematicity of onomatopoeic codas is even more evident in Mingang Doso. In this language, only the nasals [m] and [ŋ], and the approximants [j] and [w] may appear in word-final codas. In onomatopoeias, however, several other word-final consonants are grammatical, especially stops, such as [k] (*gúk*, *gùlúk*, *kjɛ̃̀k-kjɛ̃̀(k)*, *kjàk-kjàk*, *kwə̀hék-kwə̀hék*, *ə̀k*, *pwák-pwák*, *ʃák-ʃák*), [t] (*gít-gít*, *hwít*, *pù::t*, *bùt*), [p] (*t͡ʃáp-t͡ʃáp*, *ríp-ríp*), and [b] (*fàb*, *wùb*), sonorants, i.e., liquid [l] (*t͡ʃùl*, *t͡ʃùbúl*, *t͡ʃùbúl-t͡ʃùbúl*, *gúl*) and trill [r] (*ʃár*), and the fricative/approximant [h] (*ə́h*, *ùh-ùh*). In fact, as far as Mingang Doso onomatopoeias are concerned, the most common syllable structure is closed (-VC#). This contrasts with the more typical open syllabic structure (-V#) attested in nominal and verbal roots. Second, in Dza and Mingang Doso, "VC patterns do not occur in isolation" (Othaniel 2016b: 22). This constraint does not operate in onomatopoeias, as illustrated by *ə́h* and *ùh* in Dza (if [h] is analyzed as a consonant) and *ə́h*, *ùh-ùh*, and, especially, *ə̀k* in Mingang Doso. Third, and in further violation of the phonotactic rules governing the general vocabulary of these two languages, onomatopoeias may consist of consonants only. See *ʔ* and *p* in Dza and *ʔ* and *hm̀::* in Mingang Doso. Lastly, in Dza and Mingang Doso, complex #CC- onsets typically consist of an obstruent and an approximant

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[8] This is related to the performative character of onomatopoeias.

(Othaniel 2016b: 23) In onomatopoeias, other onset clusters are possible: [mb-] *mbὲːː* and [hr-] *kɔ́ːhrǔ̃* in Dza and [kr-] *krìm* in Mingang Doso.

In Dza and Mingang Doso, onomatopoeias extensively exploit supramental features such as length and tone as well as prosody and intonation. First, onomatopoeias allow for extra-long vowels in addition to short and long vowels that form part of the general phonetic/phonemic sound system of Dza and Mingang Doso. The illustrative examples are *fūːː*, *hùːːw*, *kūːː*, *mòːː*, *mbὲːː* and *wùːː* in Dza and *fūːː*, *hùːːw*, *kūːː*, *mòːː*, *mbὲːː*, and *wùːː.* in Mingang Doso. Second, each onomatopoeia has its own lexical tonal pattern. Of course, this property is not extra-systematic as both Dza and Mingang Doso are tonal languages with complex tonal configurations – as is the case of all Jen cluster varieties more generally. Interestingly, no tonal tendencies can be discerned in the onomatopoeic material collected and no tonal patterns seem to be limited to onomatopoeias either. Third, with regard to intonation, onomatopoeias can and/or are often realized with "special phonation, air stream intensity, and melody" (Andrason, Phiri & Fehn forthcoming) which is certainly related to their inherent performativity. The most illustrative examples are: *kúkùlùkú:* and (M) *kûːkùkùrūkú:* (with a particular melody imitating the rooster's song), D *wí-wí-wí* / M *jú-jú* (imitating the tune of an ambulance), and D *átsɨ́-átsɨ́* / M *ètʃá/àtsɨ́* (intense air stream imitating sneezing). All onomatopoeias can – although need not – be performed with such features so that they approximate more closely the sounds made in the real world.

Pluri-syllabic onomatopoeias tend to exhibit rhythmic, harmonious, and/or rhyme-like patterns. This is most evident with onomatopoeias that make use of replications (reduplication, triplication, etc.) as well as repetitions (see section 3.1.3). However, even those lexemes that are not replicated or repeated, but can be viewed as single units, may draw on the same vowel, e.g., *gùlúk*, *tʃùbúl*, *fìnìnì*, and *kìrí* in Mingang Doso. Rhymes are evident in *kúkùlùkú:* (D) and *kûːkùkùrūkú:* (M), as well as in *ùh-húw* (D), *ùh hùm* (D), and *kɔ̃́gòŋ-gòŋ* (M). Nevertheless, the presence of identical vowels in all syllables of a lexeme is not necessary as illustrated by *átsɨ́*, *dùbíŋ*, *gàtɔ́*, *gùbíŋ*, *hɔ̀hǔ̃*, and *mìjɔ́* in Dza and *ètʃá*, *àtsɨ́*, *fì.ȁw.ù*, *hìɲow̃*, *kwìːːhɔ́-hɔ̃́*, *ɔ̃̀ːːí*, *kwɜ̀hɛ́k*, *mìɲaw̃*, and *fíɲâw* in Mingang Doso.

3.1.3 Morphology

All onomatopoeias attested in Dza and Mingang Doso are underived pure-creation matrices. That is, the onomatopoeic lexemes collected by us have most likely emerged as proper onomatopoeias and thus their imitative function is primary: they were coined to directly imitate a given sound produced in the real world. Conversely, no onomatopoeia is secondary, thus being derived from a lexeme that belonged to another lexical class, e.g., verbs, nouns, or adverbs.

No onomatopoeia included in our database contains inflectional bound morphemes. Similarly, onomatopoeias do not contain derivative bound morphemes, especially those that would mark them as onomatopoeias. That is, Dza and Mingang Doso do not induce any types of "onomatopoe-izers" that would be comparable to ideophonizers such as *-iyani* in Xhosa (Andrason 2020: 154) and *-iyane* in Zulu (Msimang & Paulus 2001) and Ndebele (Zondo 1982). Compounding mechanisms also fail to be exploited in onomatopoeias. Therefore, onomatopoeias in Dza and Mingang Doso may be viewed as morphological simplicia.

The only true exception to the morphological simplicity of onomatopoeias postulated above are replications. In such cases, an onomatopoeic lexeme consists of a series (two, three, or

more) of identical singletons that are all pronounced as one phonological word with no pause or phrase contouring that would separate them. Reduplications are the most common among all replications. The following examples are found in Dza: *átsɨ̂-átsɨ̂*, *bjɛ̃-bjɛ̃*, *dùbíŋ-dùbíŋ*, *gàtɔ́-gàtɔ́*, *gɨ́-gɨ́*, *gín-gín*, *gɨ́tɨ́-gɨ́tɨ́*, *gjú-gjú*, *há-há*, *hɔ̌-hɔ̌*, *hɔ̀hǔ-hɔ̀hǔ*, *hwì-hwì*, *kɔ́n-kɔ́n*, *kì-kì*, *kìlíŋ-kìlíŋ*, *kwɔ́hɛ̀-kwɔ́hɛ̀*, *kwɛ̌-kwɛ̌*, *mìjɔ́-mìjɔ́*, *ɔ́-ɔ́*, *pá-pá*, *pɔ̃-pɔ̃*, *pwá-pwá*, *ʃɔ-̃ʃɔ̃*, *t͡ʃwɔ́n-t͡ʃwɔ́n*, *vú:m-vú:m*, and *wú:.n-wú:.n*. Triplications are also attested although much less frequently. In Dza, only three triplicated onomatopoeias are attested: *há-há-há*, *hē:-hē:-hē:* and *wí-wí-wí*. An extreme case of replications is *kɔ́kɔ̀kɔ̀-kɔ́kɔ̀kɔ̀*, which can be analyzed as a reduplication of a triplicated series of singletons.

For all replicated onomatopoeias, the use of singletons with the same meaning is either ungrammatical or strongly dispreferred. In fact, most singletons that form such replicated onomatopoeias are unattested at all. This means that replicated onomatopoeic structures are not derived from original singletons but rather emerged "catastrophically" as such and have been replications since the beginning of their grammatical life. Accordingly, replication would constitute an expressive morphological or morpho-phonetic mechanism rather than a derivative one. The only potential exceptions are *dùbíŋ-dùbíŋ* (D) and *t͡ʃùbúl-t͡ʃùbúl* (M) as well as *pwá-pwá* (M). To be exact, *dùbíŋ-dùbíŋ* and *t͡ʃùbúl-t͡ʃùbúl*, which mimic the sound made while walking on water, seem to be built around the singletons *dùbíŋ* and *t͡ʃùbúl* respectively, which represent the sound made by a stone falling into water. Similarly, *pwá-pwá*, which represents the sound made when shooting a gun may have drawn on the singleton *pwá* imitating fire(wood) cracking. In both cases, the use of reduplication may be motivated. For *dùbíŋ-dùbíŋ* and *t͡ʃùbúl-t͡ʃùbúl*, it can be related to the continuity of the action of walking on water in comparison to a punctiliar event when a stone falls into water. For *pwá-pwá*, it can be related to the echo often produced while shooting. In contrast, replicated onomatopoeias such as *dùbíŋ-dùbíŋ* (D), *t͡ʃùbúl-t͡ʃùbúl* (M), and *pwá-pwá* (M) do not encode the meaning of intensity. This behavior distinguishes onomatopoeias from some ideophones (e.g., those depicting colors) in which re(du)plication expresses intensity; compare *gúdú* 'heavily' with *gúdú gúdú* 'extremely heavily' (Benson 2002b: 342-343).

Several other onomatopoeias allow for repetitions. In Mingang Doso this is attested with *èt͡ʃá* (*èt͡ʃá*), *àt͡sɨ́* (*àt͡sɨ́*), *fì.ã̀w.ù* (*fì.ã̀w.ù*), *ɔ́h* (*ɔ́h*), *kwã̌w* (*kwã̌w*), *ɔ̀:.í* (*ɔ̀:.í*), *hwít* (*hwít*), *krìm* (*krìm*), *kûkû* (*kûkû*), *mbɛ́:* (*mbɛ́:*), *mɔ̀:*(*mɔ̀:*), *ɲɨ̀:* (*ɲɨ̀:*), *fĩw* (*fĩw*), *pù:.t* (*pù:.t*), *kìrí* (*kìrí*), *wṵ́n* (*wṵ́n*), and *vū:* (*vū:*). Contrary to the replications analyzed above, repetitions may appear both as singletons and in series. In a further contrast with replications, the elements used in a repetitive series can be (and often are) separated by a pause that may range from relatively short to more prolonged. As a result, repetitions constitute an analytic and synthetic phenomenon. Despite the (more or less common) presence of singletons, the repetition is once again a more expressive and iconic process rather than a properly derivative one. The meaning of the repeated sequence is essentially the same as that conveyed by the corresponding singleton. For instance, both *èt͡ʃá* and *èt͡ʃá èt͡ʃá* denote sneezing, with the only difference that the latter suggests being the actual repetition of the event.

Whether replicated or repeated, the onomatopoeic sequences tend to exploit the juxtaposition of identical singletons. Inversely, the use of any linking elements is avoided. The only possible, although uncertain, case of a linker could be *ú(h)* in *húw-ùh-húw* in Dza. Similarly, no examples of vowel alternation in replicated or repeated sequences are attested. The only examples of changes in the replicated/repeated material are the occasional instances in which the

final consonant of a singleton is optionally omitted (see *kjɛ̀k-kjɛ̀(k)* in Mingang Doso) or the first syllable is elided (see *kɔ̌gòŋ-gòŋ* in Mingang Doso).

Holistically, the category of onomatopoeias can be viewed as morphologically opaque. No feature identifies any given lexeme as a member of the onomatopoeic category; inversely, onomatopoeias are compatible with a broad array of morpho-phonetic structures. This is evident if one compares *p* and *ʔ*, with *brí* and *dúm*, *k͡pǎ-k͡pǎ* and *mìjɔ́-mìjɔ́*, and *kɔ́kɔ̀kɔ̀-kɔ́kɔ̀kɔ̀*, *kúkùlùkúː* and *hēː-hēː-hēː*. In other words, despite certain morpho-phonetic tendencies described in the present and the previous sections, onomatopoeias are formally unconstrained and may arguably exhibit any form.

3.1.4 Syntax

The syntactic systems of both Dza and Mingang Doso onomatopoeias are virtually identical. To begin with, onomatopoeias may appear holophrastically as free constructions (cf. Andrason & Heine 2023). For example, *wú* imitating barking can be used as an isolated self-standing utterance, for instance when teasing a dog (1).

(1)   Dza
        Wú wú!
        ONOM
        'Woof-woof!'

However, every onomatopoeia may also be associated with a sentence. In such cases, onomatopoeias may be extra-clausal. This extra-clausality is visible through the peripheral position of onomatopoeias – similar to that occupied by dislocated elements – and their prosodic detachment. For example, in (2), the onomatopoeia *wú* appears in the left periphery of the sentence, outside of the core clause, and is separated from the other sentential elements by a well-audible pause:

(2)   *Wú wú,*   *ìdzwa*   *sɨ̀n*   *dʒúdʒi* (Dza)
        ONOM   dog   COP.NPST   barking
        'Woof-woof, a dog is barking.'

While holophrastic and extra-clausal uses are grammatical, in most examples collected by us, onomatopoeias behave as syntagmatic parts of the respective clauses. Although, in all such cases, onomatopoeias are placed at the end of a clause and thus in a peripheral position, they are generally not separated by a pause from the preceding constituent(s) (compare (2) with (3.a-d) and especially (4.a-b)).

Two main construction types of clause-internal uses of onomatopoeias can be distinguished. In the first construction type, onomatopoeias appear immediately after an "uttering" verb, i.e., a verb that expresses an idea of producing some type of sound, whether a speech or non-speech sound. The meaning of the verb typically coincides (or is semantically compatible) with the specific sound imitated by the respective onomatopoeia; see, *dûm-* 'bark' (3.a), *tá-* 'cry' (3.b), *dʒupi-* 'call' (3.c), and *lè-* (*ɓím*) 'sing (a song)' (3.d). In this usage, onomatopoeias exhibit a fuzzy or intermediate functional profile. They function as semi-complements (i.e., quotations introduced

by utterance verbs) and semi-modifier constructions (i.e., elements qualifying or specifying the action expressed by the verb; cf. Andrason & Heine 2023).

(3)   a.   *Ìɗwà   dɨ   dûm   wɨ́n wɨ́n* (Mingang Doso)
                dog   COP   bark   ONOM
                'A dog is barking woof-woof.'

        b.   *Twə̀   sɨ̀n   tá-tá   mìjɔ́-mìjɔ́* (Dza)
                cat   COP.NPST   crying   ONOM
                'A cat is crying meow-meow.'

        c.   *Hywapɨkĩ   tʃwe   jəŋ   bɨ   jɛ̀ãɪ̀bwɪ̀dʒupɨ   kúkùlùkúː* (Dza)
                dawn   do   COMPL   then   cock   call   ONOM
                'At dawn, the cock crows cock-a-doodle-doo.'

        d.   *Gò   dɨ   lè   ɓím   kûkû kûkû* (Mingang Doso)
                cuckoo   COP   sing   song   ONOM
                'A cuckoo is singing cuckoo-cuckoo.'

Very frequently, onomatopoeias are found in the so-called "quotative constructions" (Andrason & Heine 2023), i.e., after two verbs characterized by very broad semantics: a verbum dicendi *tsa-/sa-* (also reduced to *a*) 'say' and a verbum facendi *tʃwe-* 'do'. In such instances, onomatopoeias also seem to exhibit a fuzzy profile: they function as verbal complements that are in the process of developing towards genuine parts of complex predicates (as is the case in Nguni languages; Andrason 2021a).

(4)   a.   *Ìɗwà   à   ɲɨ̃ːː ɲɨ̃ːː* (Mingang Doso)
                dog   say   ONOM
                'A dog growls grrr-grrr.'

        b.   *Jɔ̀   sɨn   tʃwenìŋ   hɔ̃́-hɔ̃́* (Dza)
                pig   COP.NPST   doing   ONOM
                'A pig is oinking oink-oink.'

Additionally, in some cases, non-uttering verbs, i.e., verbs expressing actions in principle unrelated to sound production, may directly be followed by an onomatopoeia (5). In such instances, onomatopoeia function as modifier constructions (Andrason & Heine forthcoming).[9]

(5)   *Bwə̀   sɨn   hywəlɨ gàtɔ́-gàtɔ́* (Dza)
        horse   COP.NPST   jump   ONOM
        'A horse is galloping clippity-clip.'

In the other construction type, the uttering verbs (see *dʒúdʒi* 'bark' in (6.a) and *ta-* 'cry' in (6.b)) are "linked" to an onomatopoeia by means of the quotative marker *a*, derived from the short or elided form of *tsa/sa* 'say'. The same syntactic construction is possible with the verbum facendi

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[9] This function is one of the two most common functions available to ideophones in Dza (Benson 2020b).

tʃwe 'do' (6.c). In contrast, there are no examples in our data in which the quotative marker would follow the verbum dicendi *tsa-/sa-* 'say'.

(6)   a.   *Ìdzwa sìn   dʒúdʒi   a   wú wú* (Dza)
                 dog   COP.NPST   barking   say   ONOM
                 'A dog is barking woof-woof.'
    b.   *Vamde   ta   a   ɔ̂ː.í ɔ̂ː.í* (Mingang Doso)
                 donkey   cry   say   ONOM
                 'A donkey cry hee-haw hee-haw.'
    c.   *Ìdzwa sìn   tʃweniŋ a   ɔ́ː ɔ́ː* (Dza)
                 dog   COP.NPST   doing say   ONOM
                 'A dog is growling grrr-grrr.'

Overall, from a syntactic perspective, onomatopoeias in Dza and Mingang Doso instantiate most of the syntactic roles available to ideophones (and thus onomatopoeias) across languages: free constructions, quotative constructions as complements of quotative and performative verbs, and modifier construction of a verb (Andrason & Heine 2023). Although Dza and Mingang Doso onomatopoeias are often used in a syntagmatic manner, the degree of their grammaticalization towards genuine predicates, complex predicates, and/or modifiers is low.

3.2 Relationship of onomatopoeias in Dza and Mingang Doso

At the most, out of 136 onomatopoeias, only 40 lexemes (and thus 29% of the total set) may be cognate and are phylogenetically related. To be exact, in 16 instances, the lexemes found in Dza and Mingang Doso are identical or differ only in the length of the vowel, the tone, or the fact that they exhibit replications or repetitions.

Table 2: Shared onomatopoeias – (quasi) identical lexemes

Dza	Mingang Doso	meaning, i.e., sound (of)
átsɨ́-átsɨ́	àtsɨ́ (àtsɨ́)	sneezing
búm	búːm	something exploding
ə́h	ə́h (ə́h)	having hiccup
gín-gín	gín-gín	banging the door
há	hàː	yawning
hēː-hēː-hēː (hēː-hēː-hēː)	hēːːhèhè (hēːːhèhè)	crying
hì (hì)	hìː-hìː	made by a horse
kúːːkúːː	kûkû (kûkû)	made by a cuckoo
mbɛ̀ːː	mbɛ́ːː (mbɛ́ːː)	made by a sheep
mòːː	mòːː(mòːː)	a cow mooing
pwá	pwá	fire(wood) cracking

In five instances, onomatopoeias in Dza seem to have either lost the word-final coda consonant (*-t*, *-k*, and *-n*) or weakened the stop (*-b*) to a fricative (*-f*) if compared to Mingang Doso. In one case, the long vowel [ùː] used in Mingang Doso corresponds to a short vowel with the final aspirated approximant [ùh] in Dza. This Dza structure may also be interpreted as [uṳ], which would attest to some type of weakening if compared to Mingang Doso (i.e., devoicing of the second mora of the vocalic nucleus).

Table 3: Shared onomatopoeias – similar lexemes

Dza	Mingang Doso	meaning
hwì-hwì	hwít (hwít)	whistling
kwə́hɛ̀-kwə́hɛ̀	kwə̀hɛ́k-kwə̀hɛ́k	coughing
ùh	ùː-ùː	a wolf howling
wú (wú)	wű̃n (wű̃n)	a dog barking
wùf	wùb	slurping

Further instances of weakening in Dza may result from omission of the first part of the lexemes (*kwìːːhɔ́̃-hɔ́̃* (M) > *hɔ́̃-hɔ́̃* (D)), replacement of [r] with [l] (*kûːkùkùrūkúː* (M) > *kúkùlùkúː* (D)), absence of nasalization (*ɔ́̃-ɔ́̃* (M) > *ɔ́-ɔ́* (D)), and the change from a fricative to an approximant (*vūːː* (M) > *wùːː* (D)). Nevertheless, all the onomatopoeias of this type may also be independent formations and thus unrelated phylogenetically. In such a case, the similar forms found in Dza and Mingang Doso would stem from the similar iconic strategies used by the speakers of the two varieties to represent real-world sounds. Interestingly, the phonetic changes [–nasal] ~ [+nasal] and *w* ~ *v* do not coincide with the phonetic alternations taking place in other types of lexemes between Dza and Mingang Doso (cf. Norton & Othaniel 2020). In contrast, the alternation of the intervocalic *l* in Dza and *r* in Mingang Doso is attested outside of onomatopoeias (Norton & Othaniel 2020: 55).

Table 4: Potentially shared onomatopoeias – similar lexemes and/or independent creations

Dza	Mingang Doso	meaning, i.e., sound (of)
hɔ́̃-hɔ́̃	kwìːːhɔ́̃-hɔ́̃	made by a pig
kúkùlùkúː	kûːkùkùrūkúː	made by a cock
ɔ́-ɔ́	ɔ́̃-ɔ́̃ (ɔ́̃-ɔ́̃)	a made by frog
wùːː	vūːː (vūːː)	wind blowing

The remaining 96 onomatopoeias (71%) are most likely unrelated phylogenetically and have thus been developed independently in Dza and Mingang Doso. The form of a small sub-group of them

(10 lexemes) can be viewed as slightly similar. However, this partial similarity probably reflects analogous strategies used to imitate sounds found in the real world.[10]

Table 5: Unrelated onomatopoeias – similarity due to analogous imitative strategies

Dza	Mingang Doso	meaning, i.e., sound (of)
gàtɔ́-gàtɔ́	gít-gít	a horse galloping
há-há-há (há)	hé-hé-hé (hé)	laughing loudly
kì-kì	kjàk-kjàk	a clock ticking
kìlíŋ-kìlíŋ	k͡pìrín-k͡pìrín	a bell ringing
mìjɔ́-mìjɔ́	mìɲãw	a cat meowing
pá-pá	pwák-pwák	clapping
pjɔ̀	pjɔ̀m	spitting
pɔ̃-pɔ̃	pù::t (pù::t)	sound made by a trumpet
pù	bùt	passing wind
vú:m-vú:m	jùm-jùm	a car hooting

The forms of all the other onomatopoeias (86 lexemes) differ profoundly in Dza and Mingang Doso. In these cases, the two languages explore radically distinct strategies to represent sounds found in reality and the onomatopoeias used are certainly not cognate.

Table 6: Unrelated onomatopoeias – lack of similarity

Dza	Mingang Doso	meaning, i.e., sound (of)
bjɛ̃-bjɛ̃	ʃɛ̀	water boiling
brí	fì.ã̀w.ù (fì.ã̀w.ù)	birds flying or fluttering
dùbɨ́ŋ	t͡ʃùl	small stone falling into water
dùbɨ́ŋ-dùbɨ́ŋ	t͡ʃùbúl-t͡ʃùbúl	walking on water
dúm	t͡ʃùbúl	a big stone falling into water
fũ::	hìɲõw	a cat hissing
gítɨ́-gítɨ́	t͡ʃáp-t͡ʃáp	jumping
gjú-gjú	ùh-ùh (ùh-ùh)	sound made by an owl
gùbɨ́ŋ	gúk	swallowing something
	gùlúk	
hù::w	t͡ʃùŋ	a pipe puffing

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[10] It should be noted that *pù* and *bùt* could be related phylogenetically as D *p* sometimes corresponds to M *b* (Norton & Othaniel 2020: 25) and the loss of the final *-t* would coincide with the phenomenon of weakening discussed above (cf. D *hwí* with M *hwít*).

húw-ùh-húw	kjɛ̌k-kjɛ̀(k)	sound made by a goose
hwɛ́::	fìnìnì-fìnìnì	sound made by a bee or fly
kát	k͡pám	locking something
kɔ́n-kɔ́n	ríp-ríp	hitting against something
kɔ́:hrʉ̌	k͡ɔ́gòŋ-gòŋ	snoring
kɔ́kɔ̀kɔ̀-kɔ́kɔ̀kɔ̀	t͡ʃáw-t͡ʃáw	sound made by a chicken or hen
k͡pɑ̌́-k͡pɑ̌́	krìm (krìm)	chomping, crunching, munching
ɔ́	ɔ̀k	puking
ɔ̌::(ɔ̌::)	ɲɪ̀:: (ɲɪ̀::)	a dog growling
p	fɪ̌w (fɪ̌w)	blowing
pɔ̀n	ʔ	smacking one's tongue or lips
pjá	ʃɑ̌r	peeing
pwá-pwá	gɔ́w	a gun shooting
ʃɔ̀-ʃɔ̀	ʃák-ʃák	sound made by a tam-tam/drum
	k͡pɨ́m-k͡pɨ́m	
tím	g͡bám	falling down
t͡ʃwɔ́n-t͡ʃwɔ́n	k͡pɔ̀ʊ̀-k͡pɔ̀ʊ̀	water drops dripping
ùh-hùm (hùm)	kìrí (kìrí)	laughing lightly
wí-wí-wí	jú-jú	siren of an ambulance/police car
wú::n-wú::n	fíɲâw	a (moto)car or motor working

Lastly, in a very few cases, the forms of the onomatopoeias in Dza and Mingang Doso are similar (the only difference is the absence of the final vowel/consonant in one variety if compared to the other) but express different meanings. Compare *gɨ́tɨ́-gɨ́tɨ́* imitating the sound of jumping in Dza with *gɨ́t-gɨ́t* imitating a galloping horse in Mingang Doso; as well as *pwá-pwá* mimicking a gun shooting in Dza with *pwák-pwák* mimicking clapping in Mingang Doso (cf. also *pwá* which depicts fire(wood) cracking in both languages). These formal parallels most likely stem from the perceived similarities in the respective sounds produced in the real world: jumping and galloping on the one hand, and shooting and clapping, on the other hand.

4 Discussion

The data presented in the previous section indicate that, in both Dza and Mingang Doso, onomatopoeias tend to be canonical and thus largely comply with the profile associated with an onomatopoeic prototype in scholarly literature. Nevertheless, certain (minimal) divergences from the prototype and cases of lesser canonicity are also attested. Specifically:

(a) From a semantic perspective, onomatopoeias in Dza and Mingang Doso entertain referential function and center the object of conceptualization. That is, tautologically, they represent real-world sounds that are produced, in relatively equal proportions, by animals, people, and inanimate objects or phenomena. The meaning of onomatopoeias tends to be specialized with most lexemes being nearly monosemous. The attested cases of polysemy emerge when an onomatopoeia is compatible with a sound produced by a class of genetically related and/or phenotypically similar species and when a given sound (which an onomatopoeia imitates) can be produced by all types of animate and inanimate referents. Onomatopoeias typically point to co-participants (3rd person referents) although they may also point to the speaker and interlocutor (and thus 1st person and 2nd person referents).

(b) From a phonetic perspective, onomatopoeias do not contain extra-systematic phones. They are however often extra-systematic as far as their phonotactics are concerned exhibiting sound combinations that are absent or rare in Dza and Mingang Doso. Their word-final codas, word-initial onset-clusters, and overall syllable structure may violate the rules that operate in the other part of the lexicon of these two languages, e.g., in nouns and verbs. Onomatopoeias extensively exploit supramental features such as tone and length (with an additional extra-systematic extra-long degree in vowels), as well as prosody and intonation (marked phonation, particular intensity, and melody). Many pluri-syllabic onomatopoeias exhibit a harmonious rhyme-like structure although several others do not.

(c) From a morphological perspective, all onomatopoeias are primary. They are pure creation matrices that have emerged as onomatopoeias proper. Onomatopoeias do not contain inflections and derivations, nor do they make use of compounding. Onomatopoeias greatly exploit replications (reduplications being the most common) and repetitions, generally without vowel alternations and/or linking elements. All such replicas have a more expressive/phonetic than semantic/derivative function and foundation. Holistically, the category of onomatopoeias is morphologically opaque.

(d) From a syntactic perspective, onomatopoeias may be used holophrastically, or as extra-clausal parts of sentences separated by pause from the other sentential elements. However, they are also often used as syntagmatic parts of clauses. In such cases, although they occupy a sentence-peripheral position (final), they are not separated by a pause. Clause-internal uses can be with or without a linking quotative marker. Such syntagmatic onomatopoeias are often functionally fuzzy – they function as quotations/adverbials, true adverbials, or complements/parts of complex predicates.

This profound compliance with an onomatopoeic prototype, equal in Dza and Mingang Doso, corroborates the appropriateness of the onomatopoeic prototype proposed previously in scholarship. The most significant and somewhat baffling divergence concerns phonetics and in particular the absence of any extra-systematic phones in onomatopoeias collected in our fieldwork. There is some crosslinguistic evidence suggesting that in languages with rich written tradition, onomatopoeias are "tamed" and exhibit more systematic phonetic forms, especially if written corpora constitute the basis of analysis (Körtvélyessy 2020). In contrast, in languages with principally oral tradition, onomatopoeias are more likely to exhibit an extra-systematic phonetic profile and thus "deviat[e] from the phonological system of this language" (Andrason, Phiri &

Fehn forthcoming). Given that both Dza and Mingang Doso do not have a rich and long written tradition and that all our data are oral, this lack of extra-systematic phones in the onomatopoeias in two languages is unexpected. Additionally, the clause-internal uses (as complements, adverbials, quotations, and parts of complex predicates), with or without a quotative marker, attested in Dza and Mingang Doso are also common in onomatopoeias across languages (see footnote 3). As explained, this inherent ability of onomatopoeias to also be clause-internal motivates their grammaticalization into other fully syntagmatic lexical classes (Andrason & Heine 2023).

While the categories of onomatopoeias exhibit similar extents of canonicity in Dza and Mingang Doso, the lexical similarity between onomatopoeias in these languages is significantly lower than that attested in other word classes, e.g., nouns and verbs. Accordingly, although onomatopoeias in Dza and Mingang Doso exhibit an identical extent of extra-semanticity and canonicity, this extra-systematic and canonic character seems to be achieved in different "lexical" manners. As explained in the introductory section, Dza and Mingang Doso share 90% of their lexicons included in the Swadesh list of 100 words and generally attest to very similar phonological developments (Norton & Othaniel 2020: 26-27). In contrast, shared onomatopoeic vocabulary ascend maximally to 29%. This means that in the category of onomatopoeias, cognates are three times less common than in Dza and Mingang Doso in general. Our results thus corroborate observations made by Daković (2006) with regard to Slavonic languages, in particular, the lesser propensity of onomatopoeias to have cognate equivalents in the languages of the same family. This confirms, in turn, the relative resistance of onomatopoeias to be transmitted across the history of a language (group) and their inverse propensity to be "reinvented" at different historical stages in branching varieties. Given that not only Slavonic languages but also the two closely related Jen varieties (typologically radically different from Slavonic) exhibit similar behavior, this behavior of onomatopoeia may have a wider crosslinguistic dimension. The fact that "not a single ideophone [including onomatopoeic ones] can be set up in its phonologic form" for Proto-Bantu (Meeussen 1967: 115) would also be consistent with the above observation. This "greater mutability" of onomatopoeias (cf. Andrason 2020: 155) may stem from "their inherent expressiveness" (ibid.) and iconicity. That is, the relatively direct relationship onomatopoeias entertain with extra-linguistic reality and the apparent need to imitate it, seems to motivate speakers to re-invent onomatopoeias over the course of the history of a language to constantly match real-world sounds (as perceived by humans) with their linguistic representations.[11]

5 Conclusion

In this paper, we documented onomatopoeias in Dza and Mingang Doso and demonstrated that the onomatopoeic category in each of the languages complies largely, and to an identical extent, with the prototype of an onomatopoeia postulated in scholarship. The lexical similarity between onomatopoeias in Dza and Mingang Doso is however significantly lower than that attested in other

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[11] Interestingly, as far as we can tell, there is only one onomatopoeic loanword, i.e., *brí* (Dza) which seems to have been borrowed from Hausa. This fact distinguishes onomatopoeias from interjections, which are borrowed from other languages (mainly English and Hausa) much more frequently.

word classes of these languages. Our results thus provide further evidence supporting the hypothesis according to which onomatopoeias are less likely to have cognate equivalents in the languages of the same family; they are apparently resistant to be transmitted across the history of a language (group) and tend to be reinvented at different historical stages in branching varieties.

While this hypothesis seems plausible being thus far corroborated by Slavonic and Jen data, it should be tested on a more diverse language sample in order to establish its cross-linguistic robustness and propensity. One of the authors of this article is engaged in research activities which aim to accomplish this objective.

Acknowledgements

Abbreviations

COP	copula
D	Dza
M	Mingang Doso
NPST	non-past
ONOM	onomatopoeia

References

Adelberger, Jörg & Kleinewillinghöfer, Ulrich. 1992. The Muri Mountains of North-Eastern Nigeria – An outline of the ethnographic and linguistic situation. *Nigerian Field* 57. 35–48.

Akita, Kimi. 2013. Constraints on the semantic extension of onomatopoeia. *Public Journal of Semiotics* 5(1). 21–37.

Ameka, Felix. 1992. Interjections: the universal yet neglected part of speech. *Journal of Pragmatics* 18(2-3). 101–118.

Ameka, Felix. 2006. Interjections. In Brown, Keith (ed.), *Encyclopedia of language and linguistics*, 743–746. Oxford: Elsevier.

Andrason, Alexander. 2020. Ideophones as linguistic "rebels" – The extra-systematicity of ideophones in Xhosa. Part 1. *Asian and African Studies* 29(2). 119–165.

Andrason, Alexander. 2021a. Ideophones as linguistic "rebels" – The extra-systematicity of ideophones in Xhosa. Part 2. *Asian and African Studies* 30(1). 1–30.

Andrason, Alexander. 2021b. Laughter interjections in Xhosa. *Studies in African Languages and Cultures* 55. 31–71.

Andrason, Alexander & Dlali, Mawande. 2020. The (crucial yet neglected) category of interjections in Xhosa. *STUF – Language Typology and Universals* 73(2). 159–217.

Andrason, Alexander & Heine, Bernd. 2023. On the grammaticalization of ideophones. In Hancil, Sylvie & Tantucci, Vittorio (eds), *Different slants on grammaticalization*. Amsterdam: John Benjamins.

Andrason, Alexander & Christian Locatell. 2016. The perfect wave. *Biblical and Ancient Greek Linguistics* 5. 7–121.

Andrason, Alexander, Phiri, Admire & Fehn, Anne-Maria. Forthcoming. The meaning and form of onomatopoeias in Tjwao. *Canadian Journal of Linguistics*.

Bennett, Patrick. 1983. Adamawa-Eastern: Problems and prospects. In Dihoff, Ivan (ed.), *Current approaches to African linguistics*, Vol. 2, 23–48. Dordrecht: Foris.

Benson, Peace. 2020a. A description of Dzə (Jenjo) nouns and noun phrases, an Adamawa language of Northeastern Nigeria. *Вестник Санкт-Петербургского университета. Востоковедение и африканистика* 12(4). 490–504.

Benson, Peace. 2020b. Ideophones in Dzə (Jenjo), an Adamawa language of Northeastern Nigeria. *Language in Africa* 1(3). 336–352.

Benson, Peace. 2020c. Hausa and Jenjo: The case of an invasive species. In: Egya, Sule, Dadi-Mamud, N. & Alhaji Usman, Mohammed (eds.), *Studies in scientific and cultural ecology*, 116–127. Makurdi: Sevhage.

Benson, Peace & Andrason, Alexander. 2022. *A living grammar sketch of Mingang Doso*. Salem: Living Tongues Institute for Endangered Languages.

Benson, Peace & Ayieko, Gerry. 2019. An X-Bar theoretic account of Jenjo noun phrases. *Dutsin-ma Journal of English and Literature* 2(1). 246–259.

Blench, Roger. 2012. Niger-Congo: An alternative view. http://www.rogerblench.info/ Language/Niger-Congo/General/Niger-Congo%20an%20alternative%20view.pdf

Blench, Roger. 2020. An atlas of Nigerian languages. https://rogerblench.info/Language/ Africa/Nigeria/Atlas%20of%20Nigerian%20Languages%202020.pdf

Blench, R. n.d. https://www.rogerblench.info/Language/Niger-Congo/AU/Adamawa%20 language%20list.pdf

Campbell, Lyle, Lee, Nala Huiying. Okura, Eve, Simpson, Sean & Ueki, Kaori. 2017. *The catalogue of endangered languages* (ElCat). Database available at http://endangeredlanguages.com/userquery/download/ (Accessed 2020-09-24).

Childs, Tucker. 1994. African ideophones. In Hinton, Leanne, Nichols, Johanna & Ohala, John J. (eds.), *Sound symbolism*, 178–204. Cambridge: Cambridge University Press.

Childs, Tucker. 2003. *An introduction to African languages*. Amsterdam: John Benjamins.

Daković, Sibilla. 2006. *Interiekcje w języku polskim, serbskim, chorwackim i rosyjskim. Opis i konfrontacja*. [Interjections in Polish, Serbian, Croatian, and Russian. Description and comparison.] Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego.

Dingemanse, Mark. 2011. *The meaning and use of ideophones in Siwu*. Nijmegen: Radboud University. (Doctoral dissertation).

Dingemanse, Mark. 2012. Advances in the cross-linguistic study of Ideophones. *Language and Linguistics Compass* 6. 654–672.

Dingemanse, Mark. 2014. Making new ideophones in Siwu: Creative depiction in conversation. *Pragmatics and Society* 5(3). 355–383.

Dingemanse, Mark. 2015 Ideophones and reduplication: Depiction, description, and the Interpretation of repeated talk in discourse. *Studies in Language* 39(4). 946–970.

Dingemanse, Mark. 2017. Expressiveness and system integration. On the typology of ideophones, with special reference to Siwu. *STUF – Language Typology and Universals* 70(2). 363–384.

Eberhard, David M., Simons, Gary F. & Fennig, Charles D. (eds.). 2022. *Ethnologue: Languages of the World*. 25th edition. Dallas, Texas: SIL International.

Evans, Vyvyen & Green, Melanie. *Cognitive linguistics: An introduction*. Edinburgh: Edinburgh University Press.

Feist, Jim. 2012. "Sound symbolism" in English. *Journal of Pragmatics* 45. 104–118.

Güldemann, Tom. 2018. Historical linguistics and genealogical language classification in Africa. In Güldemann, Tom (ed.), *The languages and linguistics of Africa*, 58–444. Berlin: De Gruyter Mouton.

Heine, Bernd. 2023. *The grammar of interactives*. Oxford: Oxford University Press.

Ibarretxe-Antuñano, Iraide. 2006. Estudio lexicológico de las onomatopeyas vascas: El Euskal Onomatopeien Hiztegia: Euskara-Ingelesera-Gaztelania. *Fontes Linguae Vasconum* 101. 145–159.

Janda, Laura. 2015. Cognitive linguistics in the year 2015. *Cognitive Semantics* 1. 131–154.

Klamer, Marian. 2001. Expressives and iconicity in the lexicon. In: Voeltz, Erhard & Kilian-Hatz, Christa (eds.), *Ideophones*, 165–183. Amsterdam: John Benjamins.

Kleinewillinghöfer, Ulrich. 1995/2015. Bikwin-Jen – Comparative wordlist (Swadesh 100). https://www.blogs.uni-mainz.de/fb07-adamawa/ files/ 2011/11/Bikwin-Jen-comparative-wordlist-100.pdf

Kleinewillinghöfer, Ulrich. 1996. Die nordwestlichen Adamawa-Sprachen – Eine Übersicht. *Frankfurter Afrikanistische Blätter* 8: 80–103.

Kleinewillinghöfer, Ulrich. 2020. Adamawa. In Vossen, Reiner & Dimmendaal, Gerrit (eds.), *The Oxford handbook of African languages*, 220–230. Oxford: Oxford University Press.

Körtvélyessy, Lívia. 2020. Onomatopoeia – A unique species? *Studia Linguistica* 74(2). 506–551.

Körtvélyessy, Lívia & Štekauer, Pavol. 2020. Onomatopoeia. On the crossroads of sound symbolism and word formation. In Körtvélyessy, Lívia & Štekauer, Pavol (eds.), *Complex words. Advances in morphology*, 335–361. Cambridge: Cambridge University Press.

Lahti, Katherine, Barrett, Rusty & Webster, Anthony. 2014. Introduction. *Pragmatics and Society* 5(3). 335–340.

Meeussen, Achille Emile. 1967. Bantu grammatical reconstructions. *Africana Linguistica* 3. 79–121.

Meinard, Maruszka. 2015. Distinguishing onomatopoeias from interjections. *Journal of Pragmatics* 76. 150–168.

Msimang, C. Themba & Poulos, George. 2001. The ideophone in Zulu: A re-examination of conceptual and descriptive notions. In Voeltz, Erhard & Kilian-Hatz, Christa (eds.), *Ideophones*, 235–250. Amsterdam: John Benjamins.

Nänny, Max & Fischer, Olga. 2006. Iconicity: Literary texts. In Brown, Keith (ed.), *Encyclopedia of language and linguistics*, Vol 5, 462–472. Oxford: Elsevier.

Norton, Russell & Othaniel, Nlabephee. 2020. The Jen language cluster: A Comparative analysis of wordlists. *Language in Africa* 1(3). 17–99.

Othaniel, Nlabephee. 2016a. Jenjo Grammar write-up. Bukuru: Theological College of Northern Nigeria Bukuru. (Unpublished manuscript).

Othaniel, Nlabephee. 2016b. Jenjo Phonology Statement. Bukuru: Unpublished manuscript. Theological College of Northern Nigeria. (Unpublished manuscript).

Othaniel, Nlabephee. 2017a. A phonological comparative study of the Jen language cluster. Bukuru: Theological College of Northern Nigeria. (BA thesis).

Othaniel, Nlabephee. 2017b. Jen Cluster Comparative Wordlist. (Unpublished manuscript).

Othaniel, Nlabephee. 2020. Verbal morphosyntax of Dza, an Adamawa language of Taraba state. Bukuru: Theological College of Northern Nigeria (MA thesis).

Othaniel, Nlabephe. 2022. A phonetic study of breathy voicing in Dza. Paris: Université Paris Cité (M2 thesis).

Reay, Irene. 2006. Sound symbolism. In Brown, Keith (ed.), *Encyclopedia of language and linguistics*, Vol. 11, 531–539. Amsterdam: Elsevier.

Rubino, Carl. 2001. Iconic morphology and word formation in Ilocano. In Voeltz, Erhard & Kilian-Hatz, Christa (eds.), *Ideophones*, 303–320. Amsterdam: John Benjamins.

Stange, Ulrike. 2016. *Emotive interjections in British English. A corpus-based study on variation in acquisition, function and usage*. Amsterdam: John Benjamins.

Voeltz, Erhard & Kilian-Hatz, Christa. 2001. Introduction. In Voeltz, Erhard & Kilian-Hatz, Christa (eds.), *Ideophones*, 1–9. Amsterdam: John Benjamins.

Zondo, Jerry. Some aspects of the Ideophone in Ndebele. *Zambezia* 10(2). 111–126.