Towards a linguistic analysis of conative animal calls in Babanki and Bum
(Grassfields languages of Cameroon)

Alexander Andrason and Pius W. Akumbu

This article offers a systematic analysis of conative animal calls (CACs) in Babanki and Bum—two Central Ring Grassfields Bantu languages of North-West Cameroon. The authors analyze the semantics, phonetics, morphology, ecolinguistics, and cognancy of 39 Babanki and 20 Bum CACs and conclude the following: (a) in both languages CACs largely instantiate the prototype of a CAC with regard to semantics, phonetics, and morphology; (b) several linguistic properties exhibited by CACs have their source in the ecosystems inhabited by the respective communities of speakers; (c) the similarity of the CACs in Babanki and Bum is low and their cognancy minimal despite the two languages being closely related.

1. Introduction

The present article is dedicated to the study of conative animal calls in two Central Ring languages of the Cameroonian Grassfields, namely, Babanki (ISO 639-3 bbk, Glottocode baba1266) and Bum (ISO 639-3 bmv, Glottocode bumm1238). Both varieties are spoken in the North-West Region of Cameroon, some 113-142 kilometers apart from each other, by relatively small communities of native speakers (Eberhard, Simons, and Fennig 2023; Hammarström et al. 2023).[1] To be exact, Babanki is spoken in two principal settlements, Kejom Ketinguh (Babanki Tungoh) and Kejom Keku (Big Babanki), by less than 40.000 speakers, perhaps even no more than 25.000 (Faytak and Akumbu 2021: 333; see also Akumbu and Chibaka 2012: 3). Bum is spoken north of Fundong by some 15.000 speakers (Lamberty 2002: 4-5; cf. 21.000 reported in Eberhard, Simons, and Fennig (2023)). Although Babanki and Bum are vigorous languages, they already exhibit signs of language shift: education and health services are predominantly in English; Cameroun Pidgin is widely used as an alternative communicative tool in

---

[1] 113 km separate Bum from the Babanki of Kejom Keku, while 142 km separate Bum from the Babanki of Kejom Ketinguh.

trade; and both English and Cameroun Pidgin often feature in church and are increasingly more present in interactions at home (Lamberty 2002: 12; Akumbu and Wuchu 2015; Fatyak and Akumbu 2021; see also Ayafor and Green 2017).

As most Grassfields languages, Babanki and Bum have traditionally been severely under-researched. Recently, due to the work of one of the authors of the present article, this dire situation has greatly improved (see Akumbu 2008; 2009; 2011; 2015; 2016; 2019; 2023; 2024; Akumbu and Chibaka 2012; Akumbu and Wuchu 2015; Akumbu, Hyman, and Kießling 2020; Akumbu and Kießling 2021; 2022; Fatyak and Akumbu 2021). Bum, in contrast, still lacks systematic studies. The only works that we are aware of comprise of brief discussions of the nominal system (Hyman 1980; Akumbu 2009), a preliminary study of the verb phrase (Bangsi 2016; see also Noumbi 1981), and a dictionary of some 1,800 entries (Ndokobaï, Hedinger, and Akumbu 2023). Within the various language domains and grammatical and lexical categories, one class of constructions has particularly been overlooked in Babanki, Bum, and the entire Grassfields family. This concerns conative animal calls (CACs) or, according to an operationalized definition, word-like directive constructions that are used by humans in their communication with other animal species (Andrason 2022; Andrason and Phiri 2023).[2] CACs are briefly mentioned by Akumbu and Lionnet's (forthcoming) study of Babanki interjections and liminal signs, but, to the best of our knowledge, have not featured in any discussion of Bum.

The present study responds to the above-mentioned epistemic lacuna and offers a systematic description of CACs in Babanki and Bum—the first of this type not only in these two languages but also in the Grassfields and Bantoid language groups.[3] In doing so, we follow a prototype approach to linguistic categorization and CACs specifically (Andrason and Karani 2021; Andrason 2022; Andrason and Phiri 2023) and couch our grammatical description within non-formal theories of language (see Goldberg 2003; Dryer 2006; Dixon 2010).

The article is structured in the following manner: in Section 2, we expose our conceptual framework and explain data collection methods. In Section 3, we present Babanki and Bum data, which we evaluate in Section 4. In Section 5, we conclude the study and propose future lines of research.

---

[2] Properly speaking, CACs are conative calls addressed to *non-human* animals since homo sapience is also an animal species.

[3] We understand Bantoid in its narrow sense, i.e., without Bantu languages. CACs have been analysed in some Bantu languages, e.g., Xhosa (Andrason 2022).

2. Theory and methods

As mentioned in the previous section, our analysis of CACs is developed within a prototype approach to linguistic categorization (see Evans and Green 2006). Accordingly, we follow the conceptual framework that has widely been espoused in research on CACs (e.g., in Maasai, Xhosa, Tjwao, and several other (mostly African) languages; see Andrason and Karani (2021), Andrason (2022; 2023), and Andrason and Phiri (2023)) and that also underlies the most relevant study of all interactive word classes to which CACs belong (see Heine 2023).[4] This means that we understand the CAC category as a cloud of members that radiate from the categorial center to the periphery proportionally to the decrease of their compliance with the protype, which demarcates the conceptual and topological nucleus of the category. Members that fully comply with the prototype are canonical and occupy a central position in the category('s model). In contrast, members that comply with the prototype only minimally are non-canonical and populate the category's peripheries. As a result, the belonging to the CAC category is not a binary relation of an 'either-or' type but instead a gradient function of degree. Crucially, entities that fail to instantiate the prototype—including those that violate most of its characteristics—are not *a priori* denied their categorial membership and thus a CAC status.

As is evident from the above, the critical element in the CAC category is the prototype. Although the category is much more than its prototype, the prototype structures the category by constituting the reference point against which the canonicity and the extent of belonging of all the members is measured. The prototype itself is defined cumulatively as a collection of properties referred to as prototypical features. Elaborate discussions of the various features proposed as prototypical are available in recent works on CACs and we invite the reader to consult these publications (see Andrason and Karani 2021; Andrason 2022; 2023; Andrason and Phiri 2023). Below we offer a concise summary of those prototypical features that will be relevant for the present study and guide our account of CACs in Babanki and Bum.

---

[4] Systematic analyses dedicated specifically to CACs are scarce not only in the Grassfields family but also in other language phyla (see Poyatos 2002: 178; Andrason and Karani 2021: 4). Taking apart the recent articles published by Andrason alone and in collaboration with other linguists, the most important contributions include: Bynon (1976) on Tamazight, Siatkowska (1976) and Daković (2006) on several Slavonic languages, Amha (2013) on Zargulla, and Jääskeläinen (2021) on Finnish. Less comprehensive treatments of CACs have been offered *inter alia* by Grochowski (1988), Ameka (1992), Poyatos (1993; 2002), Fleck (2003), Wierzbicka (2003), Ambrazas et al. (2006), Abdulla and Talib (2009), Aikhenvald (2010), and Denisova and Sergeev (2015). Most of these studies are dedicated to other categories or linguistic phenomena, e.g., interjections, imperatives, and "para-language," or are conceived as general grammatical descriptions of a respective language. For a more detailed account of the history of research on CACs (including the review of much older sources from 19th c. to early 20th c.) consult Andrason and Karani (2021) and Andrason (2023).

- Semantically, a prototypical CAC expresses the idea of motion (summonses call animals, dispersals chase them away, and directionals modify their movement in terms of inception/termination, direction, speed, and manner), is addressed to domestic rather than wild species, and its semantic potential is relatively limited.

- Phonetically, a prototypical CAC is monosyllabic, makes extensive use of consonantal (rather than vocalic) material, tolerates extra-systematic phones and phonotactics, potentially hosting non-IPA sounds (e.g., kisses and whistles), and largely exploits suprasegmental features such as length and various types of marked phonations.

- Morphologically, a prototypical CACs is opaque, being a monomorphemic root with no inflectional and derivational markers and no other elements incorporated through compounding.[5]

- Recently, drawing on Dogon data, it has been proposed that a prototypical CAC and the CAC category in its totality are heavily "depende[nt] on their natural and socio-cultural environment" (Andrason and Sagara forthcoming; see also Amha 2013). This link between the structure of (a) language or its parts on the one hand and the ecosystem (both a physical/natural habitat and a socio-cultural context) on the other hand—and in particular, the dependency of the former on the latter—is referred to as 'ecolinguistics' (Steffensen and Fill 2014; Fill 2018; Li, Steffensen and Huang 2020; Penz and Fill 2022).

- Additionally, from a phylogenetic perspective, the evidence provided by three dialects of Akan, i.e., Asante, Bobo, and Fante, suggests that the cognancy level of CACs in closely related languages is (significantly) lower than is the case of general lexicon (Andrason, Antwi, and Duah 2023; see similar observations concerning Slavonic languages and Macha Oromo offered by Daković 2006 and Andrason, Onsho Mulugeta, and Shimelis Mazengia 2024).[6]

Given the difficulties inherent to collecting data from any language used in rural areas that are remote from urban and administrative centers, our data-collection activities were necessarily heterogenous and consisted of introspection, semi-structured interviews, and focus-group discussions. First, half of the Babanki CACs described in this study have been provided by the second author, drawing on his

---

[5] The different semantic types of CACs, i.e., summonses, dispersals, and directionals, are also correlated with determined phonetic and morphological features. This means that their prototypical formal make-up may differ (see Andrason and Karani 2021).

[6] Prototypical features also concern syntax (see Andrason and Karani 2021: 26-33, 35-36). Due to the scarcity of corpora demonstrating spontaneous speech, we do not analyze the syntax of CACs in this article. Given the prototype approach which we have espoused, the above features can be and, in some cases, often are violated. Importantly, such violations are motivated and, as the prototype itself, essential for an accurate understanding of the entire category.

native-speaker competence. These lexemes were subsequently contrasted with five other Babanki native speakers (Vivian Ba-ah, Regina Phubong, Cornelius Wuchu, Victor Vishi, and Benjamin Nkwenti) during sessions conducted through WhatsApp between January and March 2023. The remaining half of the CACs were produced spontaneously by the above-mentioned team during a number of WhatsApp group-discussion sessions that lasted approximately 3 hours. CACs in Bum were elicited from a native speaker (Julius Ntang) through semi-structured interviews conducted via WhatsApp in November 2022 and April 2023. These sessions lasted about an hour each. All CACs in Babanki and Bum were recorded with smart phones as .ogg or .acc audio files and stored online on a safe repository platform facilitated by the Living Tongues Institute for Endangered Languages.

The CACs have been collected by means of the operationalized definition introduced at the beginning of the article. While simplified and less precise than the definition of the prototype of CAC (see Andrason and Karani 2021: 33-36), this definition has turned highly useful in our previous fieldwork activities dedicated to collecting CACs in several languages across Africa: Xhosa in South Africa (Andrason 2022), Tjwao in Zimbabwe (Andrason and Phiri 2023), Oromo in Ethiopia (Andrason, Onsho Mulugeta, and Shimelis Mazengia 2024), and Dogon in Mali (Andrason and Sagara forthcoming). Furthermore, in interviews and focus discussions, we made use of written guidelines that had been developed during the same previous fieldwork activities, which we adapted to the reality of Babanki and Bum. These guidelines listed actions typically conveyed by CACs and animals that tend to be their referents, as well as suggested the most common lexico-grammatical forms with which a directive-to-animal function could be encoded in the languages of the world.

3. Data presentation

In course of the heterogenous fieldwork activities described above, we were able to collect 39 CACs in Babanki and 20 in Bum. Table 1 below captures all these constructions and provides their IPA transcriptions as well as the meaning, i.e., the action that a CACs is supposed to trigger and the animal(s) to which it is addressed. The exact realizations of kisses, snaps, spanks, whistles, and CACs produced with objects will be explained in section 3.2.[7]

The data from Babanki may be regarded as roughly comprehensive given that the usual size of CAC categories in a language ascends to around 40 or 50 constructions: 39 in Tjwao (Andrason and Phiri

---

[7] We have decided to introduce our data at the beginning of the present section rather than in an appendix at the end of the article. This allows us to avoid translating every Babanki/Bum CAC quoted in the text (or explaining its meaning) as this information is already available to the reader.

2023), 40 in Xhosa (Andrason 2022), 45 in Arusa Maasai (Andrason and Karani 2021), 52 in Macha Oromo (Andrason, Onsho Mulugeta, and Shimelis Mazengia 2024), and 57 in Togo-Teŋu-Kan Dogon of Dourou (Andrason and Sagara forthcoming). In contrast, the data from Bum may be less complete. They do, however, capture the most stabilized and entrenched CACs that are found in this language and, therefore, in our view, warrant their inclusion in the present study and a comparison with Babanki.

Babanki		Bum	
IPA	Meaning	IPA	Meaning
bùús	summon cats	fúù	chase away dogs
bwìnə́	make goats, sheep, cattle, dogs, and cats turn back or return	káhí	turn goats, sheep, dogs, cats, poultry (chickens, ducks), and cattle (cows) to the side
dzìmə́	incite dogs and cats to chase prey; make them follow the speaker	kfáfì	stop motion of goats, sheep, dogs, cats, poultry (chickens, ducks), and cattle (cows)
dʒùú	chase away goats, sheep, dogs, cats, cattle	kɔ̀kɔ̀kɔ̀kɔ́ɔ́kɔ́k	summon poultry (chickens)
fùú	chase away goats, sheep, dogs, cats, poultry (chickens), pigs	mɛ̀ɛ́ʔ	summon goats and sheep
ɣáʔ	incite dogs and cats to chase a prey; encourage goats, sheep, dogs, poultry (roosters), cattle, and pigs to mate	mɔ̀ɔ́ʔ	summon cattle (cows)
háréì	chase away cattle and horses; encourage cattle to eat grass during the day	lɔ́ɔ̀	chase away dogs
hə́ə́íʔ	chase away cattle and horses; encourage cattle to eat grass during the day	lótʃáà	chase away dogs
hə́rə́ə̀	chase away cattle and horses; encourage cattle to eat grass during the day	ndán	start and sustain motion of goats, sheep, dogs, cats, poultry (chickens, ducks), and cattle (cows)
kə̀tsàf	incite dogs to chase game during hunting	ŋníwū	summon cats

kɨ́rɨ́	summon poultry (chickens)	ʃˑ	chase away goats, sheep, dogs, poultry (ducks)
kɔ̀kɔ̀kɔ̀…	summon poultry (chickens)	tʃáì	chase away goats, sheep, dogs, cats, poultry (ducks), and cattle (cows)
kúʔ	make goats, sheep, dogs, cats, and cattle go up and climb; incite them to mate	tʃàlà	chase away dogs
kwéè	incite dogs to chase game during hunting	tʃíná	silence goats, sheep, dogs, cats, poultry (chickens, ducks), cattle (cows)
kwɛ́n	make goats, sheep, dogs, cats, cattle, and pigs enter a space (e.g., bush or stable)	ǀʷ	summon goats and sheep
lùú	chase away dogs, poultry (chickens), and pigs; make them move	‖	summon poultry (ducks) and cattle (cows)
mὲɛ́ʔ	summon goats and sheep	{kiss-1}	summon dogs, cattle (cows), horses
mɔ̀ní	summon pigs	{object-1}	summon pigs
mɔ̀ɔ́ʔ	summon cattle (cows)	{snap-1}	summon cattle (cows), horses, poultry (ducks)
mùús	summon cats	{spank-1}	chase away horses
myã́wúʔ	summon cats		
ɲàm	summon pigs		
ɲɨ́ŋ	speed up motion of goats, sheep, dog, cats, cattle		
ɲúʔmə́	make dogs and cats sit down		
ʃˑ[8]	chase away goats, sheep, dogs, poultry (chickens); silence all animals		

---

[8] We do not use the IPA length symbol ː with vowels because each vowel can bear a different tone. In the only example containing a long consonant, we make use of ː to avoid spellings such as ʃʃ (which may suggest two syllables) or ʃ͡ʃ (which arbitrarily ascribes a nucleic role to one of the ʃ symbols). We thus choose the lack of coherence over the lack of precision.

tímə́	stop motion of goats; sheep, dogs, cats, and cattle	
tʃáááìʔ	chase away goats, sheep, cattle, horse; encourage cattle to eat grass during the day	
tʃɛ́̃ɛ̀ɛ̀ìʔ	chase away goats, sheep, dogs, cattle, horses, and pigs	
tʃə́ŋ	make goats, sheep, dogs, cats, cattle turn to the side	
tʃɔ̀ó	chase away goats, sheep, dogs, cats, poultry (chickens), and pigs; make them pass or move across	
wàà	chase away birds (hawks, chickens)	
yééè	chase away goats, sheep, dogs, cats, poultry (chickens), cattle when causing destruction on crops or food	
ʔʃ	summon goats, sheep, cats, pigs	
ǀʷ	summon goats, sheep, dogs, cats, cattle	
‖	summon poultry (chickens) and cattle	
{kiss-1}	summon goats, sheep, dogs, cats, cattle	
{snap-1}	summon poultry (chickens) and cattle	
{tune-1}	tend cattle	
{whistle-1}	summon dogs	

Table 1. Conative animal calls in Babanki and Bum

3.1. Semantics

The typical action expressed by CACs in Babanki and Bum—i.e., the action that any given CAC is expected to trigger on the part of the animal—concerns motion. Indeed, all 39 CACs attested in Babanki (100%) convey some motion nuances. The semantic potential of 32 of these CACs (82%) is in fact limited to the idea of motion. In Bum, 19 out of the 20 CACs (94%) are compatible with motion—for all of them motion constitutes the only semantic component attested. Inversely, CACs that express actions unrelated to motion are rare. In Babanki, there are 7 such constructions (18%). No CAC is restricted to a motion-unrelated meaning. In Bum, there is 1 such CAC (2%), which is exclusively used to silence

animals (*tʃíná*). There are no significant differences between motion and non-motion CACs as far as their origin is concerned (i.e., being primary, secondary, or borrowed).[9] That is, in Babanki, 3 out of 7 non-motion CACs are primary (*hɔ́ɔ́íʔ*, *ʃː*, and *tʃááàìʔ*), while the remaining 4 are either secondary (*ɣáʔ* and *kúʔ*) or borrowed (see *háréì* and *hɔ́rɔ̀ɔ̀* adopted from Fulfulde). For motion CACs, this ratio is similar: out of 39 motion CACs, 21 are primary, 15 are secondary, and 3 are borrowed.[10]

With regard to the main semantic types of motions conveyed by CACs, no coherent hierarchies can be discerned although in both languages the particular frequency of summonses seems evident. In Babanki, summonses are the most common types of CACs: 20 CACs can be used to call animals with 17 exclusively being associated with this function. Directionals are second most common. There are 14 CACs that are employed to modify the motion of animals of which 8 are limited to this usage. Dispersals are the least common being instantiated by 9 CACs. 3 of them function exclusively as dispersals. In Bum, summonses are again the most common (9 CACs), followed by dispersals (6 CACs) and directionals (3 CACs). In Bum, all such CACs are only used in one action-related function. As far as motion-unrelated CACs are concerned, three meanings are attested: encouraging cattle to eat grass during the day (4 CACs), inciting to mate (2 CACs), and silencing (2 CACs). Of these, one silencing CAC is found in Bum while the remaining meanings are limited to Babanki.

With regard to the animal addressees of CACs, domestic species clearly predominate over wild species. All CACs in Bum (20x) and all but one in Babanki (38x) can be directed to domestic animals. In contrast, only 2 CACs are in principle compatible with wild animals (see *wàà* that is used with birds and *ʃː* that is applicable to all animals). As far as the specific domestic species are concerned, the following picture emerges. In Babanki, dogs, cats, and cattle have the largest number of CACs. 21 CACs are used with dogs, with 3 constructions being exclusively associated with these animals; cats—21 / 3 exclusive; and cattle 21 / 1 exclusive. For the remaining species the frequencies are as follows: goats and sheep 18 / 1 exclusive; poultry—11 / 2 exclusive; pigs 10 / 2 exclusive; horses 6 non-exclusive; and birds 2 / 1 exclusive. In Bum, dogs also have the largest number of CACs, i.e., 11 of which 4 are exclusively used with these animals; goats and sheep—9 / 2 exclusive; cows 9 / 1 exclusive; poultry 9 / 1 exclusive; cats 6 / 1 exclusive; horses 3 / 1 exclusive; and pigs 1 non-exclusive. Many of the CACs that are limited to a

---

[9] Primary CACs are forms that have been used as CACs since the beginning of their grammatical life as well as those that, although limited to their use as CACs, have acquired this status due to the profound extent of CAC-ization (i.e., grammaticalization/lexicalization into CACs). Secondary CACs are CACs that draw on other lexical classes (e.g., nouns and verbs) and entire phrases and clauses, and this diachronic relationship remains patent.

[10] The very low number of non-motion CACs makes an equivalent comparison in Bum unreliable.

particular species are summonses exhibiting an onomatopoeic foundation, e.g., *mɔ̀ɔ́ʔ* and *mɛ̀ɛ́ʔ* in Babanki and *kɔ̀kɔ̀kɔ̀kɔ́ɔ́kɔ́k* in Bum.

The semantic potential of CACs in Babanki may range from (virtually) monosemous to largely polysemous. The increase in polysemy stems from two main factors: the animal referent may be more general and/or the action expressed by a CAC may be of more than one semantic type. In Babanki, *bùús* and *mùús* are exemplary cases of monosemy—they are directed to a specific species (cats) and convey a specific meaning (summoning). The same may be observed with *mɔ̀ní* and *ɲàm* used to call pigs, as well as *kɔ̀tsàf* and *kwê* used to incite dogs to chase prey. In contrast, *ʃː* is compatible with all animals and can be employed to both repel and silence them. It should be noted that goats and sheep always share their CACs. This is also, to some extent, the case of household birds (poultry), which have a number of CACs applicable to them all. Nevertheless, such CACs tend to select one specific type of poultry as their preferred (yet not exclusive) referent, i.e., either roosters, hens, chicks, or ducks. Similarly, horses always share their CACs with cattle (although this relation is not reciprocal and there are CACs that are compatible with cattle but not horses). Overall, the vast majority of Babanki CACs are not limited to a single species but may be used with several species whether phylogenetically related or phenotypically similar, as well as those that entertain comparable roles in the local community and economy. In Bum, the semantic potential of CACs is somewhat more limited. This stems from the fact that CACs in Bum invariably express a single specific action. Their referents may, however, range from a single species (e.g., dogs: *fû, tʃàlà, lɔ̂, lɔ́tʃâ*; pigs: {object-1}, horses: {spank-1}) to two species, whether related (e.g., *ʃʷ* used with goats and sheep) or unrelated (e.g., ‖ used with cows and ducks), or even a more diverse set of animals (e.g., *ʃ̩* used with goats, sheep, dogs, and poultry and *káhí* used with goats, sheep, dogs, cats, poultry, and cows). Nevertheless, we suspect that this exclusivity of Bum CACs with regard to their actions may, to some degree, be due to the limitation in our data. It is probable that several of the Bum CACs covey a somewhat broader scope of actions and thus exhibit at least minimally larger polysemy.

3.2. Phonetics

CACs exhibit a series of phonetic tendencies which become particularly manifest if primary and secondary CACs are studied separately. These tendencies concern the robustness (or shortness) of the phonetic form of a CAC, its consonantal (or vocalic) character, and extra-systematicity (or systematicity).

To begin with, CACs tend to be short. This is relatively evident in Babanki where 22 CACs are monosyllabic or consist of monosyllabic segments replicated in a series (see section 3.3), while only 13 CACs are disyllabic. Disyllabicity is somewhat correlated with the secondary status of a CAC (e.g., *bwìná*

and *dzìmɔ́*) or its borrowing (*háréî* and *hɔ́rɔ̀ɔ̀*)—in total, there are 8 such CACs. In contrast, five disyllabic CACs are primary (e.g., *hɔ́ɔ́íʔ, kírí,* and *myã̄wúʔ*). Overall, disyllabic lexemes constitute 24% of the 21 primary CACs. For the 18 secondary and borrowed CACs, disyllabic forms ascend to 44%. In Bum, the prevalence of monosyllabic forms over disyllabic forms is comparable to what we observed in Babanki: 10 CACs contain one syllable or are built of such monosyllabic segments, while 6 consist of two syllables. Similarly, the above-mentioned correlation between mono-syllabicity and primary CACs on the one hand, and disyllabicity and secondary/borrowed CACs on the other hand, is palpable in Bum although perhaps being slightly less evident than in Babanki. Trisyllabic CACs or longer constructions are unattested in both languages. It should however be noted that the phonetic shortness of CACs in Babanki and Bum is not particularly remarkable as monosyllabic roots, including verbal and nominal, are the most common root types in Babanki (Akumbu and Chibaka 2012: 24-26) and, as far as we know, Bum.

While CACs may draw on both consonants and vowels in Babanki and Bum, consonantal material seems more visible and is, in our opinion, more fundamental in CACs. This stems from two reasons. First, while purely vocalic CACs are unattested (the closest equivalent of such forms are CACs that in Babanki consist of an approximant and a vowel, e.g., *wàà* and *yééè*), a number of CACs are exclusively built around consonants. Such consonantal CACs are ʔʃ̩ in Babanki and ʃ̩ː, ǀʷ, and ǁ̩ in Babanki and Bum. Second, no CAC begins with a pure vowel and is thus onset-less. Inversely, all CACs have consonantal onsets with only a few exhibiting an approximant (see the above-mentioned *wàà* and *yééè,* as well as *hɔ́ɔ́íʔ).*[11]

Although the majority of CACs make use of systematic sounds, i.e., phones that are found in the standard phonetic repertoire of Babanki and Bum, CACs may also contain extra-systematic phonetic elements or be entirely made up of such extra-systematic material. The first type of extra-systematicity comprises of phones that, although absent in the general word stock in Babanki and Bum, can be found in standard sound systems in the languages of the world and are, therefore, included in the International Phonetic Alphabet. Four such extra-systematic IPA sounds are attested in CACs in Babanki and Bum. All of them are consonants. Contrary to the phonetic repertoire of the prosodic system (or sentence-grammar in Heine's (2023) terminology), CACs make use of clicks. The first click is a dental click often coarticulated with strongly u-shaped lips and thus labialized, i.e., [ǀʷ]. This click may sometimes be produced with the closure made more closely to the palatal zone than dental, thus approximating [ǂ]. In all such cases, the click is bright and high pitched (cf. Sands 2022). The other click

---

[11] As far as codas are concerned, CACs may exabit any type of form. They can end in a pure vowel, a diphthong, or a consonant.

is a retracted (alveolar) lateral click [ǁ̠]. This click is louder and more "intense" than [ǁ] (cf. Sands 2022: 21). The remaining extra-systematic sounds found in CACs in Babanki are the glottal fricative or approximant [h] (e.g., *hǝ́ǝ́íʔ*) and the trill [r] (e.g., *kírí).* However, [h] is not restricted to CACs but also present in onomatopoeias and ideophones (Akumbu 2024). In contrast, [r] is only attested in the CAC *kírí* used to summon chickens. Interestingly, no extra-systematic vowels are found in our data.

The class of extra-systematic sounds that is larger comprises of sounds that extend beyond the International Phonetic Alphabet. These include sounds made orally (i.e., whistles, kisses, and what we refer to as a tune) and non-orally (i.e., snaps and spanks, and sounds made with objects). {whistle-1}, attested in Babanki, is a series of short high-tone high-pitch whistles produced with strongly protruded lips. Following Poyatos (1993; 2002), this type of whistle may be codified with the symbol {SH- SH- SH (...)] or [S↑-S↑-S↑ (...)]. {kiss-1}, found in Babanki and Bum, is a cross-linguistically common kissing sound that, in the literature dedicated to CACs, has been noted as [↓ʘ']. This kiss consists of two closures: one is dorsovelar being made with the tongue while the other is labial and made with (strongly) protruded lips. Decreased air pressure in the air pocket created by this double closure produces air suction into the mouth (ingressive airstream) when the front/bilabial closure is released (Poyatos 1993; 2002; Andrason and Karani 2021; Andrason and Sagara forthcoming). The [↓ʘ'] segment itself is often replicated in a series. The remaining oral non-IPA sound (only present in Babanki) is an uninterrupted melodic vocalization to which we refer as {tune-1}. This tune is a holistic song-like pattern hummed to tend cattle. The class of non-oral sounds is less robust. Babanki and Bum contain {snap-1} or a short finger snap that can be repeated in a series with relatively short intervals. Additionally, Bum speakers make a common use of a spank in their interactions with horses. This sound, referred to as {spank-1}, combines an auditory feature (i.e., a relatively loud but dull bang similar to claps often used in CACs in the languages of the world; see Andrason, Antwi, and Duah 2023) with a gestural and tactile component. Lastly, one of the CACs employed in Bum to communicate with pigs (see {object-1}) is made by means of a receptacle, usually a dish that is used to give food to pigs. The speaker hits the dish against a wall or the ground and alerts the animals to come to eat.[12]

As far as phonotactics are concerned, CACs may exhibit syllable structures that are unattested in the general word stock of Babanki and Bum. That is, apart from the standard syllable structures such as V, C(G)V, C(G)VC, and N (Akumbu and Chibaka 2012: 24-25), CACs allow for C and CC syllables and

---

[12] Of course, this is not the only situation when Bum and also Babanki speakers make use of objects to interact with animals. For instance, a Bum person may hit the carved wood where salt is served to goats and cows to invite the animals to consume salt before going to eat grass in the fields. It seems, however, that the CAC used with pigs is the most regularized and entrenched.

thus consonantal nuclei other than nasals. These extra-systematic syllables are found in ʔʃ̩ in Babanki and in ʃ̩ː, ʃ̩ʷ, and ‖ in Babanki and Bum. The same CACs demonstrate that, contrary to the standard system, CACs tolerate entirely consonantal word structures. It should also be noted that, in the general word stock, the glottal stop ʔ does not appear in an onset position (Akumbu and Chibaka 2012: 19). In CACs, ʔ may appear in syllable onsets as illustrated by ʔʃ̩ often found in the replicated series ʔʃ̩-ʔʃ̩-ʔʃ̩.[13]

A clearly recognizable feature of CACs is length. In Babanki and, to the best of our knowledge, Bum, vowel length is not contrastive. Importantly, long vowels seem to be absent in the general word stock in both languages, being limited to ideophones where lengthening expresses duration and intensification (Akumbu and Chibaka 2012: 22, 204). In CACs, long vowels are common and need not convey any type of intensity or emphasis: *hɔ́ɔ́íʔ, hɔ́rɔ̀ɔ̀, wàà.* In fact, several CACs regularly exhibit extra-long realizations of their vowels. See, for example, *tʃɔáɔ́áìʔ, tʃ̰ɛ̰̃ɛ̰̃ɛ̰̀ɛ̰̀ìʔ,* and *yééè i*n Babanki. Babanki and Bum also tolerate long consonants in CACs as illustrated by ʃ̩ː which can be lengthened to ʃ̩ːː or exhibit even more exaggerated duration.

Another peculiarity of CACs is the use of contour tones and diphthongs in forms such as *bùús, mùús,* and *tʃɔáɔ́ìʔ* in Babanki or *tʃɔái, mɛ̀ɛ́ʔ,* and *mɔ̀ɔ́ʔ* in Bum. While being extremely rare in the prosaic systems of both languages, contour tones and diphthongs are relatively frequent in CACs, whether primary or secondary. At least as far as Babanki is concerned, contour tones and diphthongs have also been reported in ideophones and onomatopoeia (Akumbu 2024).[14] At this stage of our research, we are uncertain of any functional motivation of the presence of contour tones in CACs as well as in ideophones and onomatopoeia.

CACs distinguish themselves from the many other lexical classes in Babanki and Bum by the so-called modulations, i.e., loudness, marked intensity, articulatory speed, intonation, and phonation (cf. Andrason and Karani 2021: 34). Indeed, Babanki/Bum CACs are often shouted, pronounced with particular intensity, speed, and excessive high pitch, sung following a determined melody pattern, or uttered with strongly modified voice, being hummed, murmured, and/or whispered. One CAC, i.e., *tʃ̰ɛ̰̃ɛ̰̃ɛ̰̀ɛ̰̀ìʔ,* is regularly pronounced with heavy laryngealization or creaky voice.

Some of the semantic types of CACs are correlated with determined phonetic features. Babanki and Bum summonses tend to be realized with the so-called "friendly intonation" (cf. Andrason and

---

[13] Codas in CACs are in conformity with the general word stock. They do not exhibit more codas than what is tolerated in other lexical classes, i.e., /m/, /n/, /ŋ/, /f/, /s/, /b/, and /ʔ/ (Akumbu and Chibaka 2012: 19). See, for instance, *kɔ̀tsàf, ɲàm, kwɛ́n, tʃɔ́ŋ, bùús,* and *ɣáʔ* in Babanki.

[14] The lesser frequency of contour tones and diphthongs in Bum is most likely due to the limited number of CACs collected so far.

Karani 2021: 36; Andrason 2022) and thus uttered with a gentle voice, higher pitch, and melodically (cf. Andrason, Antwi, and Duah 2023). They also draw more extensively on extra-systematic sounds than any other semantic types. To be exact, in Bum, only 1 summons out of the 6 attested is phonetically systematic (i.e., *ŋníwū*). In Babanki, out of 16 summonses, 6 are phonetically extra-systematic (e.g., *ʔʃ-ʔʃ-ʔʃ, ǀʷ,* and ‖). In contrast, dispersals tend to be realized with hostile pronunciation: loudly, quickly, and harshly (cf. Andrason and Karani 2021; Andrason 2022; Andrason, Antwi, and Duah 2023). They also exploit sibilants to a larger extent than the other types of CACs (cf. Andrason 2023). Out of 9 dispersals in Babanki and 7 in Bum, 4 draw on a sibilant (see [ʃ] attested in *ʃ̩* in Babanki and Bum) or an affricate sibilant (see [t͡ʃ] in *tʃááầʔ, tʃḛ̌ə̀ɛ̀ʔ, tʃɔ̀ó* in Babanki and *tʃâi, tʃàlà,* and *lótʃâ* in Bum).[15]

3.3. Morphology

CACs tend to be morphologically simple in Babanki and Bum, and this simplicity is recognizable in primary and, albeit less so, secondary CACs.

All primary CACs (21 in Babanki and 13 in Bum) are monomorphemic. They contain neither inflectional nor derivational affixes. They also fail to make use of compounding mechanisms. The only exceptions to morphological simplicity are replications, which are particularly common in summonses.[16] Indeed, several summonses tend to occur in series, as illustrated by *kírí-kírí-kírí, mòní-mòní-mòní, ɲàm-ɲàm-ɲàm, ʔʃ-ʔʃ-ʔʃ, ǀʷ-ǀʷ-ǀʷ,* and ‖-‖-‖ in Babanki. For these CACs, the use of singletons is rare, dispreferred, or disallowed. The clearest examples of this are *kɔ̀kɔ̀kɔ̀ kɔ̀kɔ̀kɔ̀* in Babanki and *kɔ̀kɔ̀kɔ̀kɔ́ɔ́kɔ́k* in Bum. This replicative structure is also patent in {whistle-1}, {kiss-1}, and {snap-1} found in Babanki and Bum, which must be envisioned as holistic replicative patterns. Importantly, the addition of another segment to the above-mentioned CACs does not trigger a change in meaning: the CAC expresses the same action and is addressed to the same animal. Furthermore, the replication found in CACs does not have an intensifying force contrary to the replication present in ideophones (Akumbu and Chibaka 2012: 22, 204). Indeed, the forms *ʔʃ-ʔʃ-ʔʃ, ǀʷ-ǀʷ-ǀʷ,* and ‖-‖-‖ are not more 'emphatic' than several other summonses that are not replicated. Therefore, as is typical of replications found in CACs across languages, the replication attested in CACs in Babanki and Bum constitutes an expressive phonetic strategy rather than an (exclusively) derivative and thus morphological device. Overall, like

---

[15] Some of these dispersals are secondary CACs, e.g., Babanki *tʃɔ̀ó,* and Bum *tʃàlà* and *lótʃâ.*

[16] Following Andrason and Karani (2021), we use the term 'replication' to refer to word-like patterns. The term 'repetition' is, in turn, employed to refer to words appearing in a series. For the characteristics differentiating replications and repetitions in CACs consult Andrason and Karani (2021).

ideophones, replicated CACs would violate the constraints that regulate the general word structure in Babanki and Bum (see Akumbu and Chibaka 2012: 26) allowing for reduplicated and triplicated structures.

Secondary CACs—which are 15 in Babanki and 4 in Bum—exhibit a slightly greater extent of morphological complexity. When it is present, this complexity is however the property of the sources of CACs rather than CACs themselves.

To begin with, nearly all secondary CACs draw on imperative verbs. In Babanki, 13 secondary CACs derive from imperatives with which they are still fully homophonous: *bwìnə́* 'return!,' *dzìmə́* 'chase!,' *dʒùú* 'go!,' *fùú* 'go out!,' *ɣáʔ* 'grip!,' *kúʔ* 'climb!,' *kwén* 'enter!,' *lùú* 'leave!,' *ɲíŋ* 'run!,' *ɲúʔmə́* 'sit (down)!,' *tímə́* 'stand (up)!, *tʃə́ŋ* 'turn!,' and *tʃòó* 'pass!.' It should be noted that in Babanki, imperative CACs are marked by a final high tone. This final high tone surfaces as an epenthetic schwa when the imperative is formed with low tone roots—a strategy that allows these roots to avoid a contour tone, which is generally dispreferred in the phonetic system of this language (Akumbu, Kießling, and Hyman 2020). This may be observed in CACs such as *bwìnə́*, *dzìmə́*, and *ɲúʔmə́*. In low-tone roots that end in a vowel, the schwa assimilates to the radical vowel as illustrated by the forms such as *fùó*, *dʒùú*, *lùú*, and *tʃòó*. Alternatively, lengthening stems from the need to accommodate the contour tone—a phenomenon which is typologically frequent. In contrast, the imperative form of high-tone roots coincides with their respective roots: *ɣáʔ*, *kúʔ*, *kwén*, *ɲíŋ*, and *tʃə́ŋ*. From the onset, this last class of deverbal CAC would morphologically agree with CACs by exhibiting a radical form with no inflectional markers. While de-imperative CACs may host inflections (inherited from the original imperatives), they do not make use of derivational marking and compounding strategies. Additionally, two CACs are derived in Babanki from nouns, i.e., *ɲàm* 'animal, cattle' and *kòtsàf* 'booty.' These nouns are monomorphemic with no inflections, derivations, or compounded elements. In Bum, the four secondary CACs attested in our database derive from imperatives: *fúù* 'exit!,' *lɔ̀ɔ̀* 'leave!,' *lɔ́tʃáà* 'get out!,' and *tʃàlà* 'pass!'

In addition to primary and secondary CACs, 3 lexemes are loanwords. In Babanki, *mɔ̀ní* derives from the English word *money*, while *háréì* and *hárə́ɔ̀* are identical to the Fulfulde CACs used with cows and horses. Similar to primary and some secondary CACs, these forms lack any type of morphological complexity. Lastly, three CACs in Bum, i.e., {object-1}, {snap-1), and {spank-1}, are excluded from the classification as either primary, secondary, or borrowed.

As is the case of phonetics, the morphological structures of summonses and dispersals are subject to certain (more specific) tendencies. As mentioned above, summonses are correlated with replications. In contrast, dispersals generally have punctual forms, avoiding replicated patterns.[17]

When considered holistically, the categories of CACs in Babanki and Bum are opaque. This means that no morphological pattern is exclusively associated with CACs and a directive-to-animal function. Inversely, CACs may exhibit any type of form, ranging from shorter to more robust. This not only holds true of the CAC category envisaged jointly (compare the primary ʃː and ‖ with the secondary kə̀tsàf and mɔ̀ní, borrowed from English) but is also evident in the subset of primary CACs. Compare |ʷ, ʔʃ̩, kírí (both typically found in the replicated series kírí-kírí-kírí and ʔʃ-ʔʃ-ʔʃ), bùús, and tʃáá:ìʔ.

3.4. Ecolinguistics

The members of the Babanki and Bum ethnic group live in very similar environmental conditions and ecosystems. Both communities are located in the Western High Plateau in Cameroon. The Western High Plateau is a high relief of mountains and massifs that is characterized by an equatorial climate of the Cameroon type. This means generally cool temperatures, relatively heavy rainfall, and predominantly Sudan savanna-like vegetation, i.e., short bushes and shrubs as well as trees. Although this plateau used to be densely covered by forest, such forest areas are currently limited to zones adjacent to rivers, being replaced elsewhere by grassland—a process that is mostly due to human activities and agriculture-related deforestation (Gwanfogbe *et al.* 1983).

Given the shared ecosystem, the Babanki and Bum are exposed to and own identical animals. These primarily include goats and sheep, dogs and cats, poultry (mostly chickens and ducks), cattle (typically, cows), and pigs. Expectedly, all these animals are reflected in CACs in both languages. In contrast, Babanki and Bum people do not keep horses. Horses that are found in the areas inhabited by these two communities are rather owned by the cattle-herding Fulani. The Bum seem to have interacted with the Fulani more intensively than the Babanki. As a result, they have developed a horse-specific CAC (a non-oral, semi-auditory and semi-gestural spank; see section 3.2) and a few additional 'horse CACs' that can also be employed with other animals. All these CACs are well known among the Bum speakers and stabilized in the community. With regard to the Babanki, only a small group of them lives in areas that are adjacent to Fulani settlements and has had contact with the Fulani and thus

---

[17] These punctual forms may of course be repeated. In such instances, each CACs is separated by a pause and the sequence constitutes an analytical syntactic pattern.

horses. Therefore, only those Babanki people who interact directly with the Fulani are familiar with expressions directed towards horses, the remaining community members being generally unaware of these CACs. Furthermore, contrary to what can be observed in many languages in Western and Central Africa where donkeys are common referents of CACs (Andrason, Antwi, and Duah 2023; Andrason and Sagara forthcoming), there are no expressions directed towards donkeys among the CACs collected by us. Although North-West Cameroon lies beyond the area associated with the (common) presence of donkeys in farming systems (Blench 2000; 2004), donkeys used to be found in the Babanki and Bum communities in the past according to the native speakers. Since the 1980s, donkeys have gradually become rare and ultimately ceased to be part of the livestock. Accordingly, the CACs directed to donkeys which must have existed in the 20th century, are now lost without a trace. Lastly, dogs and cats are not pets *sensu stricto* (contrary to their role in Western households) but rather entertain an important function: hunting (still commonly practiced) and defense in the case of dogs and protection from small rodents, reptiles, and arthropods (bugs and insects) in the case of cats. Overall, despite certain language-specific idiosyncrasies and differences, the similar fauna to which Babanki and Bum speakers are exposed manifests itself through highly similar hierarchies of addresses in both languages: dogs > cats > cattle > goats/sheep > poultry > pigs > horses > birds in Babanki and dogs > goats/sheep > cattle > poultry > cats > horses > pigs in Bum (see section 3.1).

The ecosystem shared by the two communities and the resultant common socio-cultural foundation of CACs are also evident through the personal names used for certain animals. According to our data, dogs are virtually the only animals that are given proper names in Babanki and Bum. Their names reflect the knowledge and worldview of the speakers and the stereotypes propagated in the respective communities—which once again coincide to an extent. For example, the perception of Japan's technological prowess, shared by both Babanki and Bum, is reflected in the dog names *dʒàpān* (Babanki) and *dʒàpân* (Bum). According to native speakers, this name manifests the wish that the dog would become as efficient in hunting as the effectiveness associated with Japanese products. Other canine names that draw on nationalities reflect similar folk generalizations associated with certain countries and their citizens. That is, in Bum, *dʒámân* 'German' has its roots in the conviction of Germany's political and financial hegemony, *tʃáínà* 'China' in China's rising economic power, and *zàyî* 'Zaire' in Congo's musical reputation. Other proper names of dogs draw on English personal names (e.g., *dʒìmí* < Jimmy and *ràmbō* < Rambo), colors (e.g., *blāk* < black), and common names (e.g., *lókì* < lucky and *wískì* < whisky). Given a greater exposure to the Fulani, Bum speakers also give proper names to horses. These names tend to be of Fulfulde origin: *wát* < Fulfulde *wárt* 'come back.'

3.5. Cognancy

According to our data, out of the 59 CACs collected (i.e., 39 in Babanki and 20 in Bum), at the most 18 (30%) are 'shared,' i.e., they coincide formally, at least to some extent, in the two languages. In other words, there are 9 pairs of CACs that could be cognate and derive from a shared ancestor. Babanki shares 23% of CACs with Bum, while Bum shares 45% of CACs with Babanki. 16 of the shared CACs (i.e., 8 pairs) are primary CACs: 12 (i.e., 6 pairs) are built around IPA phones while 4 (i.e., 2 pairs) exploit non-IPA sounds. 2 shared CACs (i.e., 1 pair) are secondary.

The shared CACs that draw on IPA phones—i.e., *kɔ̀* (found in *kɔ̀kɔ̀kɔ̀ kɔ̀kɔ̀kɔ̀* and *kɔ̀kɔ̀kɔ̀kɔ́ɔ́kɔ́k*), *mɛ̀ːɛ́ʔ*, *mɔ̀ːɔ́ʔ*, *ʃ̩ː*, *ǀʷ*, and *ǁ*—not only coincide formally but also express the same meaning (see however that the exact animal referents may sometimes differ slightly in Babanki and Bum). Specifically, *kɔ̀-*, *mɛ̀ːɛ́ʔ*, *mɔ̀ːɔ́ʔ*, *ǀʷ* and *ǁ* are all used to summon animals, while *ʃ̩ː* is used to chase them away. Although in light of this formal and functional similarity, these CACs could be interpreted as true cognates, for the reason specified below, this resemblance may have a non-cognate foundation as well. First, as far as *ʃ̩ː*, *ǀʷ*, and *ǁ* are concerned, the use of sibilant- and click-driven CACs in dispersals and summonses respectively is highly common from a crosslinguistic perspective. Indeed, sibilants are extensively exploited to chase away animals, being the most recognizable exponent of a prototypical dispersal (Andrason 2023). Similarly, even in non-click languages, clicks, including dental and lateral, tend to be used to call animals; see, for instance, Arusa Maasai (Andrason and Karani 2021), Akan (Andrason, Antwi, and Duah 2023), Oromo (Andrason, Onsho Mulugeta, and Shimelis Mazengia 2024), and Dogon (Andrason and Sagara forthcoming). Consequently, the presence of *ʃ̩ː*, *ǀʷ*, and *ǁ* in both Babanki and Bum need not derive from a shared ancestor but could be attributed to the exploitation of universal crosslinguistic principles. Second, the CACs *kɔ̀-*, *mɛ̀ːɛ́ʔ*, and *mɔ̀ːɔ́ʔ* have an onomatopoeic foundation and imitate the sounds made by the animals that are being summoned, i.e., poultry (chickens), goats/sheep, and cattle (cows) respectively. As a result, their similarity with regard to both form and function in Babanki and Bum need not derive an ancestor CAC that existed in the proto language. Equally likely is that this similarity has emerged independently in both languages by exploiting iconic, i.e., imitative strategies. Indeed, as in Babanki and Bum, KO-, ME- and MO-type CACs are widely used in the languages of the world to summon poultry, goats/sheep, and cattle. This is attested, for instance, in Arusa, some Akan dialects, Dogon, Kihunde, Konso, Macha Oromo, Mokpe, Polish, Slovak, and Syrian Arabic (Andrason and Karani 2021; Andrason, Antwi, and Duah 2023; Andrason, Onsho Mulugeta, and Shimelis Mazengia

2024; Andrason and Sagara forthcoming).[18] Third, the mere fact that the CACs discussed in this paragraph are identical in the two Central Ring Grassfields languages renders their cognancy unlikely. While Babanki and Bum exhibit a high ratio of cognates (see further below), the comparative list of 436 lexemes compiled by Hyman in the 70s (Hyman n.d.) does not include a single word that would be strictly identical in these two languages. On the contrary, changes affecting vowels, consonants, tonal patterns, or word structure are ubiquitous (this is evident in the forms *fùú* and *fû* discussed below).

CACs that exhibit the same form in Babanki and Bum and exploit non-IPA sounds or are non-oral, i.e., {kiss-1} and {snap-1}, also largely coincide in function. That is, although the scope of their animal referents varies slightly, these CACs are summonses in both languages. Although this formal and functional similarity could be analyzed in terms of cognancy, this again need not be the case, and the two pairs of CACs may have emerged independently in Babanki and Bum due to crosslinguistic pressures. This especially holds true of {kiss-1} given that similar kisses are commonly used to summon animals in many languages, e.g., Arusa Maasai (Andrason and Karani 2021), Xhosa (Andrason 2022), Akan (Andrason, Antwi, and Duah 2023), Oromo (Andrason, Onsho Mulugeta, and Shimeli Mazengia 2024), and Dogon (Andrason and Sagara forthcoming).

Additionally, the CAC *fùú* used to chase away many types of animals in Babanki exhibits formal similarity with *fû* employed to chase away dogs in Bum. Both CACs are secondary and derive from verbal roots inflected in their imperative forms, i.e., *fùú* and *fúù* 'go out! exit!' While the above may suggest that these CACs are cognate—they certainly exploit cognate verbal forms that derive from a shared form that existed in the proto language (cf. Hyman n.d., 94)—the very process of harnessing this root for a directive-to-animal function may have occurred independently in Babanki and Bum and again stemmed from iconic pressures. That is, although [f] is not a common consonant in dispersals (Andrason 2023: 95-96), it may be iconically related to an intense blow of air which is sometimes used to repel insects and smaller animals.

Overall, the cognancy of the CACs attested in Babanki and Bum is remarkably low. As explained above, at the most, it ascends to 23% in Babanki and 45% in Bum. If we discount forms that could have emerged independently due to universal and/or iconic pressures rather than descending from a shared ancestor, Babanki and Bum do not have undeniable cognates, with the exception of *fùú* and *fû*. This low degree of cognancy in CACs in Babanki and Bum is clearly visible in the primary CACs used to summon cats. Babanki and Bum exploit three main strategies attested across languages to form these types of CAC: {miau}-type (found in Akan, Kihunde, and Oromo), {niau}-type (found in Maasai and Xhosa), and

---

[18] It is also possible that this similarity constitutes an areal feature.

{b/mVs}-type (found in Bono and Arabic). While Babanki makes use of the first and the third of these strategies, Bum opts for the second one.

The low cognancy level of CACs demonstrated above starkly contrasts with the cognancy extent attested in the general lexicon. After reviewing the comparative list of 436 words (Hyman n.d.), we concluded that around 85% of lexemes are cognate in Babanki and Bum and derive from forms that existed in the proto language. This high lexico statistical similarity attested in the general vocabulary is consistent with the general close phylogenetic relatedness of these two languages (Grollemund et al. 2015; see also Hammarström *et al.* 2023).

4. Summary and discussion

The data presented in section 3 reveal the following profile of the CAC categories in Babanki and Bum:

- Semantically, CACs mainly express actions related to motion, have domestic species as their referents, and can be (nearly) monosemous as well as polysemous.

- Phonetically, CACs, especially their primary subclass, tend to be monosyllabic. They exploit consonantal material more extensively than vocalic material, exhibit extra-systematic sounds (both IPA or non-IPA) and sound combinations, and are marked by a series of suprasegmental features such as length and various types of modulations.

- Morphologically, CACs are often roots with no inflections, derivations, and compounding—a property that makes the entire category opaque. (Additionally, summonses and dispersals are correlated with a series of more specific phonetic and morphological properties in agreement with what has been observed in other languages.)

- Ecolinguistically, the organization of the CAC category is considerably conditioned by the fauna and flora found in the territories where the Babanki and Bum live and the economy the two communities practice.

- Phylogenetically, the categories of CACs in Babanki and Bum contain much fewer cognates than is the case of other lexical classes. Most CACs that coincide formally and functionally may owe their similarity not to cognancy, but rather to iconic and universal strategies exploited in the two languages separately.

The above demonstrates that Babanki and Bum CACs tend to match the features associated with the prototype of a CAC and, as a result, the CAC categories in these two languages may be viewed as canonical. The most pervasive violation of the prototypical features is polysemy. That is, although as predicted by the prototype, monosemy is attested, polysemous CACs seem to be equally common.

However, since similar extents of polysemy of CACs have been observed in several other languages (Andrason 2022; Andrason and Phiri 2023; Andrason, Antwi, and Duah 2023; Andrason, Onsho Mulugeta, and Shimeli Mazengia 2024), "the polysemy of CACs may be […] greater than assumed thus far" (Andrason 2022: 49). Our results seem to support this revision to the prototype. Overall, the most significant divergences from the prototype with regard to phonetics and morphology are found in secondary CACs—a phenomenon that is also well documented in scholarly literature (Andrason and Karani 2021).

As a result, our study overwhelmingly corroborates the soundness of the prototype of CACs with regard to semantics, phonetics, and morphology as has been posited in scholarly literature and verified in several other language systems. More importantly, however, it provides evidence supporting the ecolinguistic and phylogenetic features which have been included in the prototype model only recently and, contrary to the semantic, phonetic, and morphological properties, have not been substantiated by a large and diversified spectrum of languages. Indeed, our findings strongly confirm the hypothesis that, to a much larger extent than is typical of many other lexical classes, CACs depend on the natural habitat and socio-cultural context (cf. Andrason and Sagara forthcoming) and are resistant to be inherited throughout the history of a language or a language branch (cf. Andrason, Antwi, and Duan 2023; see also Daković 2006 and Andrason, Onsho Mulugeta, and Shimeli Mazengia 2024).

The present research has some additional bearings for the general typology of CACs. First, our data corroborates a semantic and formal relationship between CACs and imperative verbs. Both classes are directive and draw on short or even monomorphemic forms. Given this semantic and morphological similarity, it is unsurprising that most secondary CACs derive from imperative verbs across languages (cf. Andrason, Antwi, and Duah 2023; see also Aikhenvald 2010). Second, apart from allowing for the manifestation of clicks in non-click languages, CACs may exhibit some tendency to exploit the trill [r] in non-trill languages. This phenomenon is attested not only in Babanki but also Akan (Andrason, Antwi, and Duah 2023) and Dogon (Andrason and Sagara forthcoming). Third, primary summonses tend to have an iconic foundation, imitating the sounds made by the respective animals that are being called,   and formally overlap with onomatopoeias.

Lastly, we also hope that with this research we have meaningfully contributed to Babanki and Bum scholarship, especially as far as the phonetics and phonology of these two languages are concerned. CACs demonstrate that radical contour tones and diphthongs (i.e., those found in roots) are not foreign to Babanki and Bum speakers. Secondly, the Babanki and Bum are not unfamiliar with clicks, trills, and glottal fricative/approximants. Similarly, length(ening) and replications do not always carry intensifying functions in Babanki and Bum; While the intensifying function of

length(ening) and replications may indeed apply to onomatopoeias and ideophones, it is not inherent to CACs.

5. Conclusion

In this article we offered a systematic analysis of conative animal calls in Babanki and Bum—two under-researched Central-Ring Grassfields languages of Cameroon. The data presented demonstrates that, in both languages, the categories of CACs instantiate the prototype of a CAC to a large extent with regard to both semantics, phonetics, and morphology; that several linguistic properties of CACs have their source in the ecosystems inhabited by the respective communities of speakers; and that the similarity between the CACs in Babanki and Bum is low and their cognancy minimal.

Of course, our study has not addressed all the questions related to CACs in Babanki and Bum and Grassfields languages more generally. Given the scarcity of corpora capturing spontaneous language use, we did not analyze the syntax of Babanki and Bum CACs. Without doubt, such an analysis is necessary to design a (more) complete picture of the CAC category in these two languages. Furthermore, while reluctance to a phylogenetic transmission is evident in the Central-Ring Grassfields languages studied in the present article, the phylogenetics of CACs in the other members of this family remain unknown. To ensure that the low inheritance ratio of CACs is indeed a characteristic of the entire branch of languages, a study of CACs in Kuk, Kung, Mmen, Oku, and especially, Kom—which separates Babanki in the south from Bum in the north—is needed. Our intention is to conduct all such studies in the near future.

Abbreviations

C—consonant; CAC—conative animal call; G—glide; N—nasal; V—vowel.

References

Abdulla, A.B., and Nasir Talib. 2009. "The Meanings of Interjections in English and Arabic." *Journal of the College of Arts University of Basrah* 50: 89–107.

Aikhenvald, Alexandra. 2010. *Imperatives and Commands.* Oxford: Oxford University Press.

Akumbu, Pius W. 2008. *Kejom (Babanki) Orthography Statement.* Yaoundé: CABTAL.

Akumbu, Pius W. 2009. "Bum Noun Class System." In: *Current Perspectives in Phono-syntax and Dialectology*, edited by Gordon S. K. Adika, Felix Abídèmí Fábùnmi and Akeem Şégun Sàláw, 212–226. Ghana: University of Winneba.

Akumbu, Pius W. 2011. "Tone in Kejom (Babanki) Associative Construction." *Journal of West African Languages* 38 (1): 1–20.

Akumbu, Pius W. 2015. "Babanki Verb Tone." *Studies in African Linguistics* 44/1: 1–26.

Akumbu, Pius W. 2016. "Babanki Coda Consonant Deletion and Vowel Raising: A Case of Allomorphy." *Proceedings of the 42nd annual meeting of the Berkeley Linguistics Society,* 3–20. Berkeley: Berkeley Linguistics Society.

Akumbu, Pius W. 2019. "A Featural Analysis of Mid and Downstepped High Tone in Babanki." In: *Theory and Description in African linguistics: Selected Papers from the 47th Annual Conference on African linguistics,* edited by Emily Clem, Peter Jenks and Hannah Sande, 3–20. Berlin: Language Science Press.

Akumbu, Pius W. 2023. *Babanki (Kejom) Living Dictionary.* https://livingdictionaries.app/ babanki

Akumbu, Pius W. 2024. "Ononomatopoeia in Babanki." In: *Onomatopoeia in the World's Languages*, edited by Lívia Kortvelyessy and Pavol Štekauer, 105-116. Berlin: Mouton de Gruyter.

Akumbu, Pius W. and Evelyn Fogwe Chibaka. 2012. *A Pedagogic Grammar of Babanki.* Cologne: Rüdiger Köppe.

Akumbu, Pius W., Larry M. Hyman and Roland Kießling. 2020. "The Segmental and Tonal Structure of Verb Inflection in Babanki." *Phonological Data and Analysis* 2/2: 1–33.

Akumbu, Pius W. and Roland Kießling. 2021. "Literal and Metaphorical Usages of Babanki Eat and Drink Verbs." *Afrika und Übersee* 94: 1–38.

Akumbu, Pius W. and Florian Lionnet. Forthcoming. "Interjections and Liminal Signs in Babanki." *Journal of West African Languages.*

Akumbu, Pius W. and Cornelius W. Wuchu. 2015. *Kejom (Babanki) Linguistic Practices in Farming Economies.* Kansas City: Miraclaire Academic Publications.

Ambrazas, Vytautas, Emma Geniušienė, Aleksas Girdenis, Nijolė Sližienė, Dalija Tekorienė, Adelė Valeckienė and Elena Valiulytė. 2006. *Lithuanian Grammar*. Vilnius: Baltos Lankos.

Amha, Azeb. 2013. "Directives to Humans and to Domestic Animals: The Imperative and Some Interjections in Zargulla." In: *Proceedings of the 5th International Conference on Cushitic and Omotic languages, Paris, 16-18 April 2008*, edited by Marie-Claude Simeone-Senelle and Martine Vanhove, 211–229. Köln: Rüdiger Köppe.

Ameka, Felix. 1992. "The Meaning of Phatic and Conative Interjections." *Journal of Pragmatics* 18/2-3: 245–271.

Andrason, Alexander. 2022. "Conative Animal Calls in Xhosa: Testing the Prototype." *Africana Linguistica* 28: 25–54.

Andrason, Alexander. 2023. "The Non-arbitrariness of Some Conative Calls Used to Chase Animals." *Linguistica Silesiana* 44: 73–103.

Andrason, Alexander, and Michael Karani. 2021. "Conative Calls to Animals: From Arusa Maasai to a Cross-linguistic Prototype." *Łódź Papers in Pragmatics* 37/1: 3–40.

Andrason, Alexander, and Admire Phiri. 2023. "Talking to Animals in a Moribund Language: Pragma-semantics, Phonetics, and Morphology of Conative Animal Calls in Tjwao." *Linguistic Variation* 23/2: 318–342.

Andrason, Alexander, Mike Ofori Antwi, and Duah Reginald Akuoko. 2023. "Phylogenetics of Conative Animal Calls: Asante, Bono, and Fante." Talk at the Semantics Colloquium, Institute für Linguistik, Goethe Universität Frankfurt, 04.05.2023.

Andrason, Alexander, and Idrissa Sagara. Forthcoming. "The Grammar of Conative Animal Calls: The Case of Togo Teŋu Kan of Dourou (Dogon)." *Asian and African Studies* 33/1.

Andrason, Alexander, Onsho Mulugeta and Shimelis Mazengia. 2024. "Conative Animal Calls in Macha Oromo: Function and Form." *Linguistic Vanguard* aop. 1-9. https://doi.org/10.1515/lingvan-2023-0056.

Ayafor, Miriam, and Melanie Green. 2017. *Cameroon Pidgin English: A Comprehensive Grammar*. Amsterdam: John Benjamins,

Bangsi, Wilfred. 2016. "Tone Melodies on the Bum Verb." MA thesis, University of Buea.

Blench, Roger. 2000. "A History of Donkeys, and Mules in Africa." In: *The Origins and Development of African Livestock. Archaeology, Genetics, Linguistics and Ethnography*, edited by Roger Blench and Kevin MacDonald, 339–354. London: UCL Press.

Blench, Roger. 2004. "The history and spread of donkeys in Africa." In: *Donkeys, People and Development. A Resource Book of the Animal Traction Network for Eastern and Southern Africa* (*ATNESA*), edited by Paul Starkey and Denis Fielding, 22–30. Wageningen: ACP-EU Technical Centre for Agricultural and Rural Cooperation.

Daković, Sybilla. 2006. *Interiekcje w języku polskim, serbskim, chorwackim i rosyjskim. Opis i konfrontacja.* Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego.

Denisova, Tat'jana and Leonid Sergeev. 2015. "O nekotorykh osobennostjakh verkhovogo dialekta v govorakh čuvašskoj diaspory Ul'janovskoj oblasti." *Vestnik ČGPU im. I. J. Jakovleva* 85/1: 32–37.

Dixon, Robert M.W. 2010. *Basic Linguistic Theory. Methodology. Vol 1.* Oxford: Oxford University Press.

Dryer, Matthew. 2006. "Descriptive Theories, Explanatory Theories, and Basic Linguistic Theory." In: *Catching Language. The Standing Challenge of Grammar Writing*, edited by Felix Ameka, Alan Dench and Nicholas Evans, 207–234. Berlin: Mouton de Gruyter.

Eberhard, David M., Gary F. Simons and Charles D. Fennig (eds.). 2023. *Ethnologue: Languages of the World.* 26th edition. Dallas, Texas: SIL International. Online version: http://www.ethnologue.com.

Evans, Vyvyan and Melanie Green. 2006. *Cognitive Linguistics: An Introduction.* Edinburgh: Edinburgh University Press.

Faytak, Matthew, and Pius W. Akumbu. 2021. "Kejom (Babanki)." *Journal of the International Phonetic Association* 51/2: 333–354.

Fill, Alwin. 2018. "Introduction." In *The Routledge Handbook of Ecolinguistics*, edited by Alwin Fill and Hermine Penz, 1–7. New York: Taylor & Francis.

Fleck, David. 2003. *A Grammar of Matses.* PhD dissertation, Rice University, Houston.

Goldberg, Adele. 2003. "Constructions: A New Theoretical Approach to Language." *Trends in Cognitive Science* 7/5: 219–224.

Grochowski, Maciej. 1988. „Wprowadzenie do analizy syntaktycznej wykrzykników." *Polonica* 13: 85–100.

Grollemund, Rebecca, Simon Branford, Koen Bostoen, Andrew Meade, Chris Venditti and Mark Pagel. 2015. "Bantu Expansion Shows that Habitat Alters the Route and Pace of Human Dispersals." *PNAS* 112/43: 13296–13301.

Gwanfogbe, Mathew, Ambrose Meligui, Jean Moukam, and Jeanette Nguoghia. 1983. *Geography of Cameroon.* Hong Kong: Macmillan Education.

Hammarström, Harald, Robert Forkel, Martin Haspelmath, and Sebastian Bank. 2023. *Glottolog 4.8.* Leipzig: Max Planck Institute for Evolutionary Anthropology (Available online at http://glottolog.org, Accessed on 2023-04-18.)

Heine, Bernd. 2023. *The Grammar of Interactives.* Oxford: Oxford University Press.

Hyman, Larry M. 1980. "Babanki and the Ring Group." In: *Noun Classes in Grassfields Bantu*, edited by Larry M. Hyman and Jan Voorhoeve, 225–258. Paris: SELAF.

Hyman, Larry M., n.d., *Comparative Ring Bantu Field Notes* (with the assistance of Abel Vukugah, Jilly Ngwaínmbi, Noah Ndifon Ndba, Peter Ngong Saní, Joseph Wango, Helen Kia, Domenic Cham, Tomothy Buo, Thomas Ntchu, Akei Ephraim, Marcus Nsieckeh, Michael Ndesa and Richard Dinga Geh).

Jääskeläinen, Anni. 2021. "Eläinten omat sanat: Eläimille suunnatut interjektiot ihmisen ja eläimen vuorovaikutuksen osina." In: *Kieli ja elain. Vuorovaikutusta ja kielioppia monilajisissa yhteisöissä*, edited by Rea Peltola, Anni Jääskeläinen and Katariina Harjunpää, 133–184. Helsinki: Suomalaisen Kirjallisuuden Seura.

Lamberty, Melinda. 2002. *A Sociolinguistic Survey of Bum.* SIL International.

Li, Jia, Sunne Steffensen and Guowen Huang. 2020. "Rethinking Ecolinguistics from a Distributed Language Perspective." *Language Sciences* 80 (101277): 1–12.

Ndokobaï, Robert Hedinger and Pius W. Akumbu. 2023. *Bum Living Dictionary* https://livingdictionaries.app/bum

Penz, Hermine and Alwin Fill. 2022. "Ecolinguistics: History, Today, and Tomorrow." *Journal of World Languages* 8/2: 232–253.

Poyatos, Fernando. 1993. *Paralanguage: A Linguistic and Interdisciplinary Approach to Interactive Speech and Sounds.* Amsterdam: John Benjamins.

Poyatos, Fernando. 2002. *Nonverbal Communication across Disciplines. Volume II: Paralanguage, Kinesics, Silence, Personal and Environmental Interaction.* Amsterdam: John Benjamins.

Siatkowska, Ewa. 1976. *Zachodniosłowiańskie zawołania na zwierzęta: stan obecny, funkcje historyczne, stosunek do systemu językowego.* Warszawa: Wydawnictwa Uniwersytetu Warszawskiego.

Steffensen, Sunne and Alwin Fill. 2014. "Ecolinguistics: The State of the Art and Future Horizons." *Language Sciences* 41: 6–25.

Wierzbicka, Anna. 2003. *Cross-cultural Pragmatics: The Semantics of Human Interaction.* Berlin: De Gruyter.

—————————————————

Alexander Andrason is a researcher at the Center for African Studies at the University of Cape Town. He holds a PhD in Semitic Languages (University Complutense in Madrid), a PhD in African Languages (Stellenbosch University), and a PhD in General Linguistics (University of Iceland). He specializes in cognitive linguistics, linguistic typology, grammaticalization theory, language contact, and critical pedagogy. He speaks some thirty living languages and has an extensive knowledge of various ancient languages. His language interests include the Afro-Asiatic, Indo-European, Khoe, Niger-Congo, Nilotic, and Turkic families.
Alexander can be contacted at: aleksand@hi.is
and alexander.andrason@uct.ac.za

Pius W. Akumbu is a researcher at Langage, Langues et Cultures d'Afrique (LLACAN), a research unit of the French National Centre for Scientific Research (CNRS) and INaLCO University that specializes in the study of the languages and cultures of Africa. His research focuses on the documentation and description of Grassfields Bantu languages of the North-West and West Regions of Cameroon, language revitalization, and languages in education policy in Africa. Pius can be contacted at: pius.akumbu@cnrs.fr