

THE GRAMMAR OF CONATIVE ANIMAL CALLS: THE CASE OF TOGO-TEJU KAN OF DOUROU (DOGON)

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This article offers the first systematic account of the grammar of conative animal calls (CACs) in the family of Dogon languages. After analyzing the meaning and form of 57 CACs in a Dogon variety spoken in the village of Dourou in Mali – the so-called Togo-Teju-Kan of Dourou – the authors conclude the following: the category of CACs in Togo-Teju Kan of Dourou largely complies with the crosslinguistic prototype of CACs in terms of its semantics, phonetics, morphology, and syntax and exhibits a considerable extent of extra-systematicity when compared to the lexical classes of the sentence grammar of this language. While these results generally corroborate the validity of the prototype of CACs posited in scholarship, the authors also propose a few, more or less fundamental, theoretical refinements and argue for a more prominent incorporation of the ecolinguistic evidence into the study of CACs.

Keywords: Dogon, Togo-Teju Kan, conative animal calls, interjections, interactives

1. Introduction

The present article concerns a Dogon variety that is spoken in the village of Dourou, the capital of the Dourou Community, located in the Bandiagara Region in Mali. The Dogon of Dourou is one of the Togo-Teju Kan varieties and, henceforth, we will refer to it as the Togo-Teju Kan of Dourou or TTKD in short. Togo-Teju Kan itself is a Dogon language spoken by approximately 127 000 people in the south-eastern part of the Dogon country, in the area comprised between the escarpment of Bandiagara and the non-Dogon fringe that penetrates some 20-30 km north-west from the Burkina border into Mali.¹ To be exact, Togo-Teju Kan is not a single uniform language but rather a linguistic continuum confined between two main dialectal poles: Togo Kan and Teju Kan. (Sometimes, two further dialects, i.e., Guimiri/Guinwourou Kan and Worou Kan, are also distinguished).² Within this Togo-Teju continuum, TTKD seems to be located more closely to the Teju Kan dialect.³

Togo-Teju Kan is one of the most under-researched Dogon languages. To be accurate, the Togo Kan dialect *has* been documented and meticulously described by HEATH in his excellent grammar.⁴ In contrast, as far as we know, the Teju

¹ HEATH, J. *A Grammar of Togo Kan (Dogon Language Family, Mali)*, p. 4; GUINDO, A. S. *Multilinguisme et enseignement / apprentissage des langues en Pays dogon*, p. 198.

² *Ibid.*

³ Indeed, the village of Dourou is included in the Teju Kan area by HOCHSTETLER, DURIEUX and DURIEUX-BOON (see HOCHSTETLER, L., DURIEUX, J., DURIEUX-BOON, E. *Sociolinguistic Survey of the Dogon Language Area*, p. 57; see also GUINDO, A. S. *Multilinguisme et enseignement / apprentissage des langues en Pays dogon*, p. 162). TTKD documented by us exhibits a number of differences if compared with Togo Kan described by HEATH (2015); and the TTKD variety itself is often referred to as “Tejusɔ” (i.e., the Teju language) by its speakers (SAGARA, I. *Dogon (Tejusɔ) Living Dictionary*; SAGARA, I., ANDRASON, A. *A Living Grammar Sketch of Tejukan Dogon*). Nevertheless, TTKD may more precisely be falling within the radiation scope of Guimiri/Guinwourou Kan: the Dourou village lies some 3 kilometers from Guimini – the (historical) center of the Guimini people; similar to many settlements in the Dourou Community, the village of Dourou was founded by the Guimini people; and as is the case of Guimiri Kan speakers and the village Guimini (HEATH, J. *A Grammar of Togo Kan (Dogon Language Family, Mali)*, p. 4; GUINDO, A. S. *Multilinguisme et enseignement / apprentissage des langues en Pays dogon*, p. 198), the most common surname in Dourou is **Sagara**. Regarding the difficulties involved in the classification of Dogon varieties consult HOCHSTETLER, DURIEUX and DURIEUX-BOON (see HOCHSTETLER, L., DURIEUX, J., DURIEUX-BOON, E. *Sociolinguistic Survey of the Dogon Language Area*) and GUINDO (see GUINDO, A. S. *Multilinguisme et enseignement / apprentissage des langues en Pays dogon*).

⁴ HEATH, J. *A Grammar of Togo Kan (Dogon Language Family, Mali)*.

Kan dialect and other varieties, including Guimiri/Guinwourou Kan, have not received an equally detailed treatment.⁵ There is, however, a TTKD dictionary with nearly 2000 entries and a grammar sketch that the authors of this article published recently.⁶

Our paper contributes to the documentation and description of the Togo-Tenju Kan language, in particular, its Tenju Kan dialectal area. It does so by studying the category of conative animal calls (CACs) – or lexicalized vocal (or oral) directive constructions with which humans try to influence the behavior of animals⁷ – that is itself one of the most under-researched parts of Dogon grammar, African languages, and all languages in general. Indeed, CACs do not feature in HEATH's Togo Kan grammar,⁸ nor are they mentioned in the (otherwise outstanding) grammatical treatises of any other Dogon variety authored by PLUNGIAN, HEATH, and MCPHERSON.⁹ The systematic studies of CACs

⁵ See a similar observation made by HEATH (HEATH, J. *A Grammar of Togo Kan (Dogon Language Family, Mali)* p. 4.

⁶ See SAGARA, I. *Dogon (Tejukan) Living Dictionary*; SAGARA, I., ANDRASON, A. *A Living Grammar Sketch of Tejukan Dogon*.

⁷ ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37, pp. 3–40 (see pp. 3–4); ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54 (see p. 26); ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragma-semantics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342 (see p. 319). For the proper definitions of CACs, both operationalized and prototype-driven, see Section 2.1.

⁸ HEATH, J. *A Grammar of Togo Kan (Dogon Language Family, Mali)*.

⁹ PLUNGIAN, V. *Dogon*; HEATH, J. *A Grammar of Jamsay*; HEATH, J. *A Grammar of the Dogon of Tabi-Sarinyere (Toro Tegu) Tabi Dialect*; HEATH, J. *A Grammar of Najamba Dogon (= Bondu-So)*; HEATH, J. *A Grammar of the Dogon of Beni (Ben Tey)*; HEATH, J. *A Grammar of Yorno So (Toro So Subgroup of Dogon, Mali)*; HEATH, J. *A Grammar of Bunoge (Dogon, Mali)*; MCPHERSON, L. *A Grammar of Tommo So*. See also BLENCH, R. *Tebul Ure: A Language of the Dogon Group in Northern Mali and its Affinities*; BLENCH, R. *Yanda: A Language of the Dogon Group in Northern Mali and its Affinities*. Animals have, however, been studied extensively in works dedicated to Dogon culture, religion, and oral literature. See, for instance, LIFSZYC, D., PAULME, D. 1936. Les animaux dans le folklore dogon. In *Revue de folklore français et de folklore colonial*, 1936, 7(6), pp. 282–292; PAULME, D. *Organisation sociale des Dogon (Soudan français)*; GRIAULE, M. Les mammifères dans la religion des Dogons (Soudan français). In *Mammalia*, 1941, Vol. 5, pp. 104–109; CALAME-GRIAULE, G. *Ethnologie et langage la parole chez les Dogon*. For a critical assessment of Griaule's work consult VAN BEEK, W. E. A. et al. Dogon restudied: A field evaluation of the work of Marcel Griaule. In *Current Anthropology*, 1991, Vol. 32(2), pp. 139–167.

in languages spoken in other parts of the world are also extremely scarce.¹⁰ Therefore, as emphasized by POYATOS¹¹ and ANDRASON and KARANI,¹² analyzing CACs in more languages – especially in those that belong to linguistic families in which CACs have not been examined yet – is critical for the development of a more accurate, nuanced, and typological balanced understanding of the CAC category.

To respond to this need and conduct our research systematically, we follow a prototype-driven typological approach to the category of CACs. Accordingly, we review the semantics, phonetics, morphology, and syntax of TTKD CACs by considering the features usually exhibited by CACs in the languages of the world and regarded as inherent to a CAC prototype.¹³ We will expand this traditional

¹⁰ ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54 (see p. 26). See also POYATOS, F. *Nonverbal Communication across Disciplines. Volume II: Paralanguage, Kinesics, Silence, Personal and Environmental Interaction*, p. 178; AMHA, A. Directives to humans and to domestic animals: The imperative and some interjections in Zargulla. In SIMEONE-SENELLE, M.-C., VANHOVE, M. (eds.). *Proceedings of the 5th International Conference on Cushitic and Omotic Languages*, pp. 211–229 (see p. 212); ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40 (see pp. 4–5). Concerning the history of research on CACs consult ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40 (see pp. 4–5); ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragma-semantics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342 (see p. 322); ANDRASON, A. The non-arbitrariness of some conative calls used to chase animals. In *Linguistica Silesiana*, 2023, Vol. 44, pp. 73–103 (see pp. 74–75).

¹¹ POYATOS, F. *Nonverbal Communication across Disciplines. Volume II: Paralanguage, Kinesics, Silence, Personal and Environmental Interaction*, p. 178.

¹² ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40.

¹³ See ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40; ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54; ANDRASON, A. The non-arbitrariness of some conative calls used to chase animals. In *Linguistica Silesiana*, 2023, Vol. 44, pp. 73–103; ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragma-semantics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342; HEINE, B. *The grammar of Interactives*.

analysis with a new domain – the ecolinguistic one.¹⁴ The lexico-grammatical evidence itself is described with the apparatus provided by Basic Linguistic Theory.¹⁵

To achieve our objective, we structure the article in the following manner: In Section 2, we explain the theoretical background of our research: its conceptual framework and data-collection methods; in Section 3, we introduce our original evidence and describe the properties of TTKD CACs in all language domains; in Section 4, we evaluate the results of this description within the adopted framework; in Section 5, we conclude the article.

2. Theoretical Background

2.1. Conceptual Framework: Prototype Approach to the Category of CACs

As announced in the introduction, in the present paper we embrace a prototype-driven approach to the category of CACs.¹⁶ In this manner, we follow the theoretical tools used by one of the authors in his previous works on CACs in

¹⁴ See HAUGEN, E. The ecology of language. In DIL, A. (ed.). *The Ecology of language. Essays by Einar Haugen*, pp. 325–339; STEFFENSEN, A., FILL, A. Ecolinguistics: The state of the art and future horizons. In *Language Sciences*, 2014, Vol. 41, pp. 6–25; ANSALDO, U., LIM, L. Editorial. In *Language Ecology*, 2017, Vol. 1(1), pp. 1–3; FILL, A. Introduction. In FILL, A., PENZ, H. (eds.). *The Routledge Handbook of Ecolinguistics*, pp. 1–7; LI, J., STEFFENSEN, S., HUANG, G. Rethinking ecolinguistics from a distributed language perspective. In *Language Sciences*, 2020, Vol. 80(101277), pp. 1–12; PENZ, H., FILL, A. Ecolinguistics: History, today, and tomorrow. In *Journal of World Languages*, 2022, Vol. 8(2), pp. 232–253.

¹⁵ DRYER, M. Descriptive theories, explanatory theories, and basic linguistic theory. In AMEKA, F., DENCH, A., EVANS, N. (eds.). *Catching Language. The Standing Challenge of Grammar Writing*, pp. 207–234; DIXON, R. M. W. *Basic Linguistic Theory*.

¹⁶ ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40; ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54; ANDRASON, A. The non-arbitrariness of some conative calls used to chase animals. In *Linguistica Silesiana*, 2023, Vol. 44, pp. 73–103; ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragmatics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342; HEINE, B. *The grammar of Interactives*.

Maasai,¹⁷ Xhosa,¹⁸ and Tjwao,¹⁹ and in another study dedicated to the comparative analysis of CACs in languages from a number of distinct language phyla.²⁰ This approach falls within the cognitive tradition of dealing with linguistic categorization²¹ and similarly characterizes the most recent line of research dedicated to other interactive categories,²² especially, interjections,²³ onomatopoeias,²⁴ and ideophones.²⁵

In our approach, the category of CACs is defined as a radial network of members (or language-specific exemplars) whose categorial position is determined by their relationship with the typological prototype in terms of either compliance or the lack of thereof. Members that comply with the prototype are canonical instantiations and fill the center of the category; in contrast, members that comply with the prototype only minimally are non-canonical instantiations and populate the category's periphery.²⁶ The critical – although not definitional –

¹⁷ ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40.

¹⁸ ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54.

¹⁹ ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragmatics, semantics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342.

²⁰ ANDRASON, A. The non-arbitrariness of some conative calls used to chase animals. In *Linguistica Silesiana*, 2023, Vol. 44, pp. 73–103.

²¹ EVANS, V., GREEN, M. *Cognitive Linguistics: An Introduction*; JANDA, L. Cognitive linguistics in the year 2015. In *Cognitive Semantics*, 2015, Vol. 1, pp. 131–154.

²² HEINE, B. *The grammar of Interactives*.

²³ NÜBLING, D. Die prototypische Interjektion: Ein Definitionsvorschlag. In *Zeitschrift für Semiotik*, 2004, Vol. 26(1/2), pp. 11–46; STANGE, U. *Emotive Interjections in British English. A Corpus-based Study on Variation in Acquisition, Function and Usage*; ANDRASON, A., DLALI, M. The (crucial yet neglected) category of interjections in Xhosa. In *STUF – Language Typology and Universals*, 2020, Vol. 73(2), pp. 159–217; ANDRASON, A., FEHN, A.-M., PHIRI, A. Interjections in Tjwao. In *Bulletin of the School of Oriental and African Studies*, 2020, Vol. 83(2), pp. 293–319.

²⁴ ANDRASON, A., PHIRI, A., FEHN, A.-M. Onomatopoeias in Tjwao. In *Canadian Journal of Linguistics*, 2023, Vol. 68(3), 1–37; ANDRASON, A., BENSON, P. Onomatopoeias in closely related languages: The case of Mingang Doso and Dza. In *SKASE Journal of Theoretical Linguistics*, 2023, Vol. 20(2), 2–26.

²⁵ ANDRASON, A., HEINE, B. On the grammaticalization of ideophones. In HANCIL, S., TANTUCCI, V. (eds.). *Different Slants on Grammaticalization*, pp. 234–259; HEINE, B. *The grammar of Interactives*.

²⁶ ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40;

element of a categorial network is its prototype. The prototype is proposed given typological data, in particular: the frequency of features attested in CACs across languages of the world; the salience of such features or their distinctiveness from properties associated with other categories; cognitive force of the features visible in spontaneous coinage episodes when new primary CACs are formed; and the diachronic drift of secondary CACs and their convergence towards certain ‘attractors’ of features.²⁷

The features jointly describing the prototype of CACs – or the so-called prototypical features – that have been distinguished in scholarship can be consulted in detail in works authored by ANDRASON and KARANI²⁸ and ANDRASON and PHIRI,²⁹ as well as ANDRASON with regard to a particular semantic sub-type of CACs used to chase away animals.³⁰ We will employ these prototypical features to guide our description of CACs in TTKD. We will introduce and discuss them in detail in Sections 3 and 4; here we merely enumerate them. Concerning semantics: a prototypical CAC is a (nearly) monosemous directive as it orders a specific action (usually related to motion) to a specific animal (usually a domestic animal rather than a wild species). Within the motion domain, three semantic types are distinguished: summonses make the animal come, dispersals make it go away, and directionals modify its motion in any possible way (start, continue, and terminate motion; move faster/slower; go up/down; turn left/right/back, etc.). Concerning phonetics: a prototypical CAC is monosyllabic (or a series of identical monosyllables), consonantal rather than vocalic, and tolerates extra-systematic sounds and sound combinations,³¹

ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54; ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragma-semantics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342.

²⁷ ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40 (see p. 8).

²⁸ Ibid.

²⁹ ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragma-semantics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342.

³⁰ ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54; ANDRASON, A. The non-arbitrariness of some conative calls used to chase animals. In *Linguistica Silesiana*, 2023, Vol. 44, pp. 73–103.

³¹ The term ‘extra-systematic’ refers to the properties that are either absent or atypical from the perspective of the standard system of a language. This standard system characterizes and governs the so-called ‘sentence grammar’ (e.g., verbs, nouns, pronouns, adverbs, adjectives, numerals, adpositions, conjunctions/complementizers). In contrast,

especially with relation to suprasegmental properties and phonation. Concerning morphology: a prototypical CAC is opaque; it is monomorphemic (or a replicated series of segments that cannot be used as singletons) and does not host inflectional and derivational morphemes nor does it exploit compounding strategies (with replication being an expressive phonetic rather than derivative morphological strategy). (Several phonetic and morphological properties are correlated with the three main semantic types mentioned above.) Concerning syntax: a prototypical CAC can be used holophrastically, i.e., as a self-standing non-elliptical utterance; when it is used as a word in a sentence, it is extra-clausal and asyntagmatic, located in a sentence-peripheral (initial) position, and detached phonetically from the other syntactic components. As is predicted by the prototype-driven approach, the features listed above may be and often are violated in language-specific instantiations of CACs without relegating such transgressors outside of the CAC category. Importantly, all such violations are motivated and themselves exhibit certain regularities and, like the prototype, are formative of the category.

Among all CACs, those that are secondary tend to violate the formal properties associated with the prototype most commonly. Secondary CACs are constructions that are often – yet not exclusively – employed in a directive-to-animal function (and thus as CACs). This “non-exclusivity” stems from the fact that secondary CACs derive from other lexical classes (especially non-interjective and non-conative ones, i.e., verbs, nouns, pronouns, and adverbs) or draw on phrases and clauses composed of such non-CAC elements. Crucially, the diachronic relationship of secondary CACs with their sources remains relatively patent. For instance, the same or (highly) similar form is used as both a CAC and a verb, noun, pronoun, or adverb. Contrary to secondary CACs, primary CACs are only used in a directive-to-animal function. This usage has either characterized such constructions since the beginning of their grammatical life or been acquired due to the completion of the process of “CAC-ization”, i.e., the development of non-CACs into genuine CACs. In further contrast with secondary CACs, in the latter case, the conceptual and diachronic relationship with source constructions is lost and irrecoverable to the speakers.³²

extra-systematic features may be tolerated to some extent in ‘interactive grammar’, especially its onomatopoeic/ideophonic, interjective, and CAC domains (ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40; HEINE, B. *The grammar of Interactives*).

³² ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40; ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragmatics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic*

In the recent studies on CACs, one aspect has been treated marginally: a domain that we refer to as ecolinguistics.³³ Ecolinguistics pertains to the multiple ways in which the ecosystem conditions the structure of (a) language.³⁴ The ecolinguistic domain itself comprises of two clusters of phenomena. On the one hand, it is related to the “physical” or “natural” habitat, i.e., topography, climate, fauna, and flora of the area on which a language is spoken.³⁵ On the other hand,

Variation, 2023, Vol. 23(2), pp. 318–342. There are also constructions that are employed in a ‘directive-to-animal’ function with no traces of entrenchment or stabilization. These forms are not CACs *sensu stricto* and are usually not included in studies on CACs. The distinctions above correspond to a tripartite distinction commonly applied to interjections, namely between primary interjections, secondary interjections, and exclamations (see AMEKA, F. Interjections: The universal yet neglected part of speech. In *Journal of Pragmatics*, 1992, 18(2/3), pp. 101–118; STANGE, U., NÜBLING, D. Interjections. In MÜLLER, C. CIENKI, A., FRICKE, E., LADEWIG, S., MCNEILL, D., TESSENDORF, S. (eds.). *Body – Language – Communication*, pp. 1982–1989; STANGE, U. *Emotive Interjections in British English. A Corpus-based Study on Variation in Acquisition, Function and Usage*; ANDRASON, A., DLALI, M. The (crucial yet neglected) category of interjections in Xhosa. In *STUF – Language Typology and Universals*, 2020, Vol. 73(2), pp. 159–217). Similarly, the (gradual) conversion of non-CAC lexemes, phrases, and clauses into CACs (first secondary and then primary) corresponds to the process of interjectionalization (NÜBLING, D. Von oh mein Jesus! zu oje! – Der Interjektionalisierungspfad von der sekundären zur primären Interjektion. In *Deutsche Sprache*, 2001, Vol. 29(1), pp. 20–45; ANDRASON, A., DLALI, M. The (crucial yet neglected) category of interjections in Xhosa. In *STUF – Language Typology and Universals*, 2020, Vol. 73(2), pp. 159–217).

³³ See, however, AMHA, A. Directives to humans and to domestic animals: The imperative and some interjections in Zargulla. In SIMEONE-SENELLE, M-C., VANHOVE, M. (eds.). *Proceedings of the 5th International Conference on Cushitic and Omotic Languages*, pp. 211–229.

³⁴ Cf. STEFFENSEN, A., FILL, A. Ecolinguistics: The state of the art and future horizons. In *Language Sciences*, 2014, Vol. 41, pp. 6–25; ANSALDO, U., LIM, L. Editorial. In *Language Ecology*, 2017, Vol. 1(1), pp. 1–3; FILL, A. Introduction. In FILL, A., PENZ, H. (eds.). *The Routledge Handbook of Ecolinguistics*, pp. 1–7; LI, J., STEFFENSEN, S., HUANG, G. Rethinking ecolinguistics from a distributed language perspective. In *Language Sciences*, 2020, Vol. 80(101277), pp. 1–12; PENZ, H., FILL, A. Ecolinguistics: History, today, and tomorrow. In *Journal of World Languages*, 2022, Vol. 8(2), pp. 232–253.

³⁵ STEFFENSEN, A., FILL, A. Ecolinguistics: The state of the art and future horizons. In *Language Sciences*, 2014, Vol. 41, pp. 6–25 (see p. 7); PENZ, H., FILL, A. Ecolinguistics: History, today, and tomorrow. In *Journal of World Languages*, 2022, Vol. 8(2), pp. 232–253 (see p. 233).

it is related to the “socio-cultural” aspects of a language community.³⁶ This may include economy types, customs, norms and all types of ‘institutions’ that determine the interactions of speakers with the physical/natural habitat.³⁷

Our lexico-grammatical data will be described from the vantage point of Basic Linguistic Theory³⁸ in the sense that we aim to avoid deep levels and empty elements in the presentation and discussion of linguistic examples. By doing so, our study falls within the tradition of non-formal approaches to language, which Goldberg³⁹ elegantly characterizes as a “what you see is what you get” way of describing grammar. Additionally, the term construction – which is employed in the operationalized definition of conative animal calls and will widely feature in our analysis – is borrowed from Construction Grammar where it refers to a form-meaning pairing irrespective of its complexity and synthetic or analytical status. Therefore, a CAC construction may be a lexeme or a (partially or fully lexicalized) chain of lexemes of compounded, phrasal, and clausal origin.⁴⁰

2.2. Methodology: Our Fieldwork and Database Compilation

As we explained at the beginning of our article, the Togo-Tedu Kan data that underlie our study reflect the usage attested in the village of Dourou. Dourou is located in the center of the Dourou Community, 23 km from the Region and

³⁶ STEFFENSEN, A., FILL, A. Ecolinguistics: The state of the art and future horizons. In *Language Sciences*, 2014, Vol. 41, pp. 6–25 (see p. 7).

³⁷ STEFFENSEN, A., FILL, A. Ecolinguistics: The state of the art and future horizons. In *Language Sciences*, 2014, Vol. 41, pp. 6–25 (see pp. 7, 12–13); LI, J., STEFFENSEN, S., HUANG, G. Rethinking ecolinguistics from a distributed language perspective. In *Language Sciences*, 2020, Vol. 80(101277), pp. 1–12; PENZ, H., FILL, A. Ecolinguistics: History, today, and tomorrow. In *Journal of World Languages*, 2022, Vol. 8(2), pp. 232–253 (see p. 234).

³⁸ DRYER, M. Descriptive theories, explanatory theories, and basic linguistic theory. In AMEKA, F., DENCH, A., EVANS, N. (eds.). *Catching Language. The Standing Challenge of Grammar Writing*, pp. 207–234; DIXON, R. M. W. *Basic Linguistic Theory*.

³⁹ GOLDBERG, A. Constructions: A new theoretical approach to language. In *Trends in Cognitive Science*, 2003, Vol. 7(5), pp. 219–224 (see p. 219).

⁴⁰ GOLDBERG, A. Constructions: A new theoretical approach to language. In *Trends in Cognitive Science*, 2003, Vol. 7(5), pp. 219–224; FREID, M., ÖSTMAN, J-O. Construction grammar: A thumbnail sketch. In FRIED, M., ÖSTMAN, J-O. (eds.). *Construction Grammar in a Cross-language Perspective*, pp. 11–86. HOFFMANN, T., TROUSDALE, G. Construction grammar: Introduction. In HOFFMANN, T., TROUSDLAE, G. (eds.). *The Oxford Handbook of Construction Grammar*, pp. 1–12.

Circle's capital, Bandiagara, and nearly 700 km from the country's capital city, Bamako. This remoteness of Dourou, the difficulty in accessing the village due to the state of the roads' infrastructure and natural geographic obstacles, and most importantly insecurity related to the ongoing armed conflict in Mali had important ramifications for our data-collection activities and explains their heterogenous character.

We started gathering our data by drawing on the linguistic introspection of one of the authors of this article, who himself is a TTKD speaker and grew up in Dourou. Concurrently, we involved in our research another trained linguist who, although not originating from Dourou, is a native Togo-Teju speaker and has extensive knowledge of Togo-Teju dialects. After that, between December 2022 and April 2023, we conducted fieldwork activities in Dourou and Bamako. The fieldwork in Dourou was first carried out remotely via telephone communication and involved a group of six elders. The fieldwork in Bamako was carried out physically and involved two speakers coming from Dourou but residing in the capital city or its surroundings. In April 2023, one of us visited Dourou and with the assistance of the elders collected further evidence, mostly related to syntax, and verified several issues that had emerged during data analysis. In total, ten TTKD native speakers contributed to our data of whom nine were male. All interviews were conducted in Dogon and had a semi-structured format: they consisted of guided elicitations prompted by the interviewer who followed the three-page guidelines that had been designed by the two authors jointly. These guidelines contained a variation of the elicitation topics which had turned out to be useful in previous fieldwork dedicated to CACs in other African countries and which we had carefully adapted to the reality of Dourou and its ecosystem. The topics listed in these guidelines involved: (a) typical actions expressed by CACs (both motion-related and unrelated to motion); (b) typical referents of CACs as well as those animal addresses that can be expected given the local ecosystem; (c) typical linguistic forms used in a directive-to-animal function; and (d) other features that seemed relevant in light of our previous crosslinguistic research on CACs (e.g., the potential use of whistles, kisses, and non-oral sounds). Additionally, during the visit to Dourou, it was possible to observe (and participate in) actual interactions with animals in which some CACs were produced spontaneously.

To collect CACs in our fieldwork we made use of an operationalized definition. According to this definition, CACs are (more or less) entrenched and lexicalized, directive constructions that “communicate [...] requests, wishes,

desires, demands, or orders [...] to animals”⁴¹ and allow for holophrastic usage, i.e., as autonomous non-elliptical utterances.⁴² While simplified in comparison to our understanding of CACs as a radial category where a plethora of features determine the inclusion and position of a form in a CAC category, this definition made the collection of candidate constructions feasible and, at the same time, allowed us to avoid circularity. We also explained to the speakers that we were interested in collecting not only words and constructions composed of words, but also other types of auditory signs, in particular whistles and kisses which humans use when communicating with non-human species.⁴³

The data were recorded on cell phones. The relevant constructions – i.e., those that met the requirements of our operationalized definition – were extracted by using an audio cutting/trimming application. The collected tokens were then placed in our database and analyzed according to the distinguished parameters: classificatory (corpus tag and source/speaker); context-sensitive (example of use, gloss, and translation), phonetic (IPA transcription, syllabic-structure pattern, extra-systematic phones and extra-systematic phonotactics, extensions, i.e., replication and repetition, punctual realization, tonal pattern, and phonation), semantic (specific action requested and belonging to one of the basic semantic types, i.e., summonses, dispersals, directionals, and motion-unrelated, as well as the type of an animal involved), morphological (root structure, presence of

⁴¹ ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40 (see p. 33).

⁴² ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40 (see p. 35); ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragmatics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342 (see p. 319). See similar definitions in AMEKA, F. Interjections: The universal yet neglected part of speech. In *Journal of Pragmatics*, 1992, 18(2/3), pp. 101–118; AMEKA, F. The meaning of phatic and conative interjections. In *Journal of Pragmatics*, 1992, 18(2/3), pp. 245–271; WIERZBICKA, A. *Cross-cultural Pragmatics: The Semantics of Human Interaction*; AMHA, A. Directives to humans and to domestic animals: The imperative and some interjections in Zargulla. In SIMEONE-SENELLE, M-C., VANHOVE, M. (eds.). *Proceedings of the 5th International Conference on Cushitic and Omotic Languages*, pp. 211–229 (see p. 212). A critical assessment of these definitions may be found in our previous works on CACs, especially ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40.

⁴³ Cf. ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragmatics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342 (see p. 319).

inflectional and derivative morphemes, the use of compounding, primary or secondary status and the relationship with cognate words, as well as the donor language expression in the case of borrowing), and others (e.g., gender restrictions and gestures accompanying a given CAC). This database constitutes the backbone of our evidence which we will introduce in the next section.

3. The Grammar of CACs

Our fieldwork activities allowed us to collect 57 CACs in TTKD. Following the approach used in our previous works on CACs⁴⁴ and other interactive categories,⁴⁵ we list all these tokens alphabetically, accompanying the standard orthography (in this case, that of Dogon) with a transcription in the International Phonetic Alphabet (IPA). We also provide the basic meaning of each CAC: we specify the *typical* animal(s) to which a CAC is directed and the action(s) which the production of that lexeme/construction is supposed to induce.⁴⁶

⁴⁴ ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54; ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragma-semantics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342; ANDRASON, A., ONSHO, M., SHIMELIS, M. Conative animal calls in Macha Oromo: Function and Form. In *Linguistic Vanguard*, 2024, pp. 1–12.

⁴⁵ ANDRASON, A., BENSON, P. Onomatopoeias in closely related languages: The case of Mingang Doso and Dza. In *SKASE Journal of Theoretical Linguistics*, 2023, Vol. 20(2), 2–26; ANDRASON, A., KARANI, M. Ideophones in Arusa Maasai: Syntax, morphology, and phonetics. In *Open Linguistics*, 2022, Vol. 8, pp. 440–458.

⁴⁶ The CACs with highly extra-systematic phonetic forms are not represented with Dogon spelling, but are referred to as *kisses*, *whistles* or merely *sounds*. The production of these auditory signs will be explained in detail in Section 3.3. When presenting the meaning of CACs in List 1 and Section 3.2, we will not make use of the natural semantic meta-language framework (Wierzbicka 2009). While this framework is often employed in studies on interjections, it is not particularly common in research on CACs. See that DAKOVIĆ, ANDRASON and KARANI, and HEINE do not use it (DAKOVIĆ, S. *Interiekcje w języku polskim, serbskim, chorwackim i rosyjskim. Opis i konfrontacja*; ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40; HEINE, B. *The grammar of Interactives*). Given that (contrary to emotive interjections), the semantics of CACs can quite accurately be captured with two parameters, i.e., the addressee of a CAC and the action it aims to trigger on part of the animal, and that our study is concerned not only with semantics but also phonetics, morphology, syntax, and ecolinguistics, we think that long natural-semantic-meta-language explications are unnecessary and would considerably lengthen our, already long, study.

a	[àʔ]	chase away donkeys; incite donkeys to go faster
dama	[dámá]	make cows, oxen, and donkeys cross a bumpy road or a hill
dededede	[dèʔ.dèʔ.dèʔ.dèʔ]	summon cows and oxen (for food)
dɔɛ	[dɔ̀ɛ(h)]	make agriculture/transportation animals stop working; stop motion
dɔmɛ	[dòmɛ]	slow or stop agriculture/transportation animals
dɔpɔn	[dɔ̀pɔ̀]	make cows, oxen, donkeys, sheep, and goats fight
eda	[édà]	indicate direction to agriculture/transportation animals
gar(r)a	[gár(:)á]	make domestic animals follow the owner/master
giju	[gídʒù]	make agriculture/transportation animals pause or rest; stop motion
go	[gǒ]	chase any animal out of its hiding place
hei	[héj] ([héj])	chase any animal that is noisy; silence animals
hiya	[hìjá]	make domestic animals stop causing any type of damage
hoe	[hóé]	chase away any animal that is far
i	[íʔ]	incite agriculture/transportation animals to work; start or sustain motion
igiye	[ìgíjɛ]	make agriculture/transportation animals stop working; stop motion
ija	[ìdʒá]	chase any animal that is noisy; silence animals
ja	[dʒáʔ]	chase away big domestic animals
jam	[dʒām]	communicate approval to agriculture animals (“that is OK”)
karikari	[káríkàrì]	make domestic animals stop causing damage/nuisance; silence animals
karja	[kárdʒà]	stop animal doing any type of action (e.g., fighting, crying, running)
kenwkenw	[kéw̃kéw̃] ([kéw̃kéw̃])	calm any animal that wants food, water, or to be untied
kigere	[kìgéré]	make agriculture/transportation animal turn back or change direction

kire	[kìré]	chase away birds; make (injured/ trapped) birds fly
koi	[kój]/[kóì]	make agriculture/transportation animals stop working; stop motion
kr(u)-krukrukru	[kr::(ũ)/kɾ:: krũkrũkrũ]	stop motion of donkeys; calm donkeys
kss	[kɕ:(:)]	chase away poultry (mostly hens and chicks)
kuss(a)	[kùs:á]	chase away poultry (with insistence)
mɛmɛmɛ	[mɛʔ.mɛʔ.mɛʔ]	summon goats (to tie them up)
mɔmɔmɔ	[mɔʔ.mɔʔ.mɔʔ]	summon oxen (to tie them up)
non	[nǒ]	encourage any animal to drink water
jii	[jí:]	encourage domestic animals to eat
ɔgɔg	[ɔgʔɔg]	encourage cows, oxen, donkeys, sheep, goats to eat small food quantity
ɔrruɔ	[ɔr::ũɔ]	summon sheep
sije-daga	[síné-dàgà]	silence small animals (usually dogs, cats, hens, roosters)
ssa	[s:á]	chase away poultry and birds
sugo	[sùgó]	encourage oxen, cows, donkeys, and sheep to walk down the escarpment
tama	[támá]	incite oxen, cows, and donkeys to give a kick to a human
tenwen	[té.ǵé]	encourage cows, donkeys, sheep, and goats to eat cereal
turr	[tùR:/ɛ:/ɪ:] > [tùv:]	make agriculture animals turn when ploughing
unda	[úndà]	indicate direction to agriculture/ transportation animals
uri	[úrí]	accelerate motion of donkeys and horses
waŋa	[wáŋá]	indicate direction to agriculture/ transportation animals; turn them back
yaa	[jáà]	make agriculture/transportation animals start working or sustain their work; start and sustain motion; indicate direction to animals
yamu	[jàmú]	start/sustain motion of agriculture/ transportation animals; indicate direction to animals

!	[!]	summon poultry (mostly hen and chicks; for food)
kh'	[kχ']	summon goats
hmhmhm	[m̥m̥ʔ.m̥m̥ʔ.m̥m̥ʔ]	summon pigs (for food)
{sound-1}		summon poultry
{kiss-1}		summon cows and oxen
{kiss-2}		incite oxen to run (while being on its back)
{kiss-3}		prevent rats, squirrels, lizards from biting when getting them out of a trap
{kiss-4}		calm baby donkeys, cows, sheep, and goats; summon them (to tie them)
{kiss-5}		summon baby dogs and cats
{kiss-6}		make any animal to go faster
{whistle 1}		call snakes to kill them
{whistle 2}		summon birds
{whistle 3}		encourage cows, oxen, donkeys, horses to (continue to) drink

List 1: CACs in Togo-Tedu Kan of Dourou

3.1. Ecolinguistics

Dourou is located on the Bandiagara plateau very close to the escarpment. The plateau is a colossal rocky plate elevated some 500 meters above sea level and 100-150 meters above the adjacent Gondo plain (as well as the Sano plain more to the east).⁴⁷ The surface of the plateau is covered with a laterite layer curved with caves, grottos, gorges, crevices, and cliffs – the most spectacular of them being the Bandiagara escarpment itself.⁴⁸ The area is hard to penetrate, travel, and subsist. There are no permanent rivers and access to arable land and water is

⁴⁷ MAYOR, A. et al. Population dynamics and paleoclimate over the past 3000 years in the Dogon country, Mali. In *Journal of Anthropological Archaeology*, 2005, Vol. 24, pp. 25–61 (see p. 55); RAK, K., MYNARSKI, M. Natural and cultural sanctuary of the Bandiagara escarpment. In *Cracow Landscape Monograph*, 2016, Vol. 2, pp. 155–163 (see p. 155).

⁴⁸ MAYOR, A. et al. Population dynamics and paleoclimate over the past 3000 years in the Dogon country, Mali. In *Journal of Anthropological Archaeology*, 2005, Vol. 24, pp. 25–61; BUCHALIK, L. *Dogon ya gali. Dawny świat Dogonów*, p. 38.

limited.⁴⁹ The climate in Dourou and the entire Bandiagara plateau is of a Sahel type bordering a (dry) savannah, with monsoon influence.⁵⁰ The year is divided into three seasons: a dry hot season from March to June with temperatures reaching 45 degrees during the day and warm nights; a rainy season from June to October with equally hot temperatures but increased humidity; and a dry cool season from November to February with milder temperatures, including much cooler nights.⁵¹ The vegetation is of a transitional Sahel-savanna type. It mainly consists of grass, succulents, aloes, bushes, and shrubs with forest areas being sparse and thin and with baobabs and acacias featuring as the main tree genera.⁵²

The terrain, climate, and vegetation characterizing the Bandiagara plateau and Dourou have profound impact on the type of flora one finds in this area.⁵³ In general, due to the hard conditions explained above, not many animals can be found and/or kept. Furthermore, the exposure of humans to those animals that are attested is considerably conditioned by socio-cultural aspects.

As for wild species, one finds rodents (squirrels, porcupines, rats, and mice) and other mammals (hares and monkeys), birds (owls, doves, crows, and falcons), a variety of reptiles and amphibians (tortoises, lizards, chameleons, snakes, crocodiles, caimans, and frogs), as well as fish and many arthropoda (scorpions, locust, and wasps). In the 20th century, the Bandiagara plateau was also home to lions, giraffes, ostriches, elephants, and hippopotami.⁵⁴ These animals are, however, no longer present in Dourou and its surroundings. Furthermore, encounters with wild animals are rather uncommon. Hunting is practiced residually because of climate change as well as drought and deforestation. Currently, the animals that can be hunted include porcupines, mountain monkeys,

⁴⁹ RAK, K., MYNARSKI, M. Natural and cultural sanctuary of the Bandiagara escarpment. In *Cracow Landscape Monograph*, 2016, Vol. 2, pp. 155–163 (see p. 161).

⁵⁰ MAYOR, A. et al. Population dynamics and paleoclimate over the past 3000 years in the Dogon country, Mali. In *Journal of Anthropological Archaeology*, 2005, Vol. 24, pp. 25–61 (see p. 26).

⁵¹ MAYOR, A. et al. Population dynamics and paleoclimate over the past 3000 years in the Dogon country, Mali. In *Journal of Anthropological Archaeology*, 2005, Vol. 24, pp. 25–61 (see p. 26); BUCHALIK, L. *Dogon ya gali. Dawny świat Dogonów*, p. 39.

⁵² MAYOR, A. et al. Population dynamics and paleoclimate over the past 3000 years in the Dogon country, Mali. In *Journal of Anthropological Archaeology*, 2005, Vol. 24, pp. 25–61 (see p. 26); RAK, K., MYNARSKI, M. Natural and cultural sanctuary of the Bandiagara escarpment. In *Cracow Landscape Monograph*, 2016, Vol. 2, pp. 155–163 (see p. 161).

⁵³ MAYOR, A. et al. Population dynamics and paleoclimate over the past 3000 years in the Dogon country, Mali. In *Journal of Anthropological Archaeology*, 2005, Vol. 24, pp. 25–61.

⁵⁴ BUCHALIK, L. *Dogon ya gali. Dawny świat Dogonów*, p. 40.

hares, rats, squirrels, some species of birds, some fish, crocodiles, caimans, and snakes. In principle, all wild animals are edible except if they are totemic in a family or neighborhood. Hunting is generally a masculine activity. From the age of 10 – and thus before circumcision which takes place at 12-14 – boys start hunting in groups.⁵⁵

With regard to domestic animals, one finds donkeys, horses, cows/bulls/oxen (and rarely camels), sheep/goats, chickens, dogs, and cats. These animals are present in households and relevant for food production, transportation, and/or agriculture. Field work usually lasts for five months, i.e., from June to October. After the harvest, following a statement from the village chief, agriculture animals (sheep, goat, donkey, and oxen) are released until June when the chief authorizes their return. Only animals kept for fattening (rams and bulls) are permanently tethered. The abandonment of donkeys, sheep, and goats does not require any control from the owners, as these animals return to the household on their own (donkeys around dusk and sheep before noon). In contrast, cows/oxen require a collective watch. The owners of cows/oxen jointly supervise the animals, taking turns according to their age, i.e., from the oldest to the youngest. Supervision circulates daily: in the evening, a person passes on a stick to another person who is supposed to take care of cows/oxen the following day. Goats and sheep stay in the bush longer than cows/oxen, but their return and reappropriation are regulated. On the chief's order, the owners summon young men to catch abandoned animals. Each afternoon, the youth go in search of the goats and for each goat recovered they are paid by the owner an established sum of money. After two weeks, the village chief makes a final statement authorizing the slaughter of goats that remain in the bush. Only unmarried men can recover these last goats to their original owners for which they also receive money. It is forbidden to sell goats recovered in this way to other people.

According to our data and as confirmed by the inhabitants of Dourou, the most important domestic animal in the village is the donkey. It plays a critical role in transportation, agriculture, and even travelling. In the past, there were donkey racing games during major festivities (e.g., the harvest festival or the market). Donkeys also provide manure that is widely used in gardening and fields; they warn of possible danger and protect against witchcraft; their parts are used for natural medicines in the same way as plants and herbs; even bones are crushed and employed to produce magic potions. Everything about this animal is exploited except for eating its flesh, which is considered too impure.

⁵⁵ Overall, only men kill animals, both wild and domestic. Women are sometimes allowed to hunt, e.g., after menopause and if they are Yasa initiates. Due to the scarcity of game, some hunters migrate to hunt as far as the Burkinabè border or the Mondoro-Hombori savannah.

There are no pets, in the western sense of this word, in Dourou. Nevertheless, there are four species that may accompany humans: dogs, cats, tortoises and, sometimes, monkeys. When this occurs, these animals are not eaten. Dogs enjoy a good reputation, and each family keeps one or more dogs. However, recently with the expansion of Islam, the presence of dogs in the community has decreased and dogs started to be regarded as impure. For instance, if a dog shares a utensil with a human, the utensil must be washed seven times before it is considered clean. Furthermore, dog barking is strongly disfavored. It is believed that every time a dog barks, good spirits leave the family. Cats are mainly used to chase rodents and reptiles. They do not enjoy a good reputation and are rather perceived as parasitic and dependent. Tortoises are highly respected animals. They are viewed as the oldest ancestor of a family who protects it spiritually. Therefore, during a meal, a tortoise is entitled to the first slice of bread. Some hunters also keep monkeys. They often sell them to tourist guides who retain them as an “exotic” attraction.

Our data indicate that only the animals that are currently present in the ecosystem and/or relevant for the economy of the village have CACs. Thus, the possible referents of CACs are profoundly determined by the local terrain and climate as well as the economy practiced in the community. Indeed, oxen, cows, and donkeys, which play a critical role in agriculture and transportation in Dourou have the largest number of CACs associated with them (see Section 3.2).⁵⁶ The economy type also influences the semantic types of actions communicated by CACs. Given the above-mentioned relevance of animals for agriculture and transportation, communication with them must expand beyond summoning and chasing them and also include specific commands related to directions, manner of motion, and work activities. This results in a large number of directionals – much larger than in several other languages studied thus far (see Section 3.2).⁵⁷ CACs also reflect other socio-cultural idiosyncrasies typical of Dourou. As explained above, hunting and killing wild animals are activities that are almost exclusively performed by men and thus any call that is associated with hunting (such as {**kiss-3**} and {**whistle-1**}) may, in principle, be only produced by male speakers. In fact, {**whistle-1**} exhibits another restriction. It is forbidden to make

⁵⁶ Interestingly, there are no CACs for tortoises or monkeys. In interactions with these animals, one employs general TTKD expressions commonly used with humans.

⁵⁷ ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40; ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54; ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragma-semantics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342.

this whistle while in the village, especially at night, as its production could lure snakes out of their hiding places and expose inhabitants to much danger. Two other CACs are also gendered: **kh'** (which summons goats) is limited to male speakers, while **kuss(a)** (which chases away poultry) is used by women. Lastly, as only men may whistle, the three whistles that we collected are limited to male speakers. In equivalent situations, women must resort to common language instead of whistling.

3.2. *Semantics*

The majority of CACs (44x) refer to some type of motion that the animals talked to should perform. There are 13 summonses, which are used to call animals to approach the speaker (e.g., **dededede**, **hmhmhm**, **məməmə**, **{kiss-1}**, and **{whistle-1}**). Although motivations for ordering an animal to come closer can be quite diverse – see, for instance, **{whistle-1}** which is employed to lure snakes to kill them – two reasons are critical. One usually summons animals to either feed them or tie them up. Another 10 is employed in a dispersing function to chase away animals or repel them (e.g., **hei**, **ija**, **kss**, and **hoe**). This type includes the lexemes **a** and **kire**, which can also be used as directionals, i.e., constructions with which the Dogon start, sustain, terminate, or modify the motion of animals. This is the largest type of CACs in TTKD with at least 23 tokens attested. Their considerable number is likely related to the diversity of actions that are grouped under the umbrella of directionals (which contrasts with the specificity of summonses and dispersals) as well as, no less importantly, the relevance of animals for farming and transportation in the local Dogon community and the resultant necessity of giving the animal performing a given task precise directions (see Section 3.1). CACs that are used to start or sustain motion are the most numerous among the directionals. There are 7 constructions of this kind (e.g., **gar(r)a**, **i**, **kire**, and **sugo**) and another 6 that are also employed to stop motion (e.g., **dəɛ**, **giju**, **koi**). 6 directionals are used to stop the motion of animals (e.g., **dəmə**, **karja**, and **krr(u)-krukrukru**). The remaining sub-types of directionals are used to indicate the direction of motion, i.e., make the animal turn left or right (e.g., **eda**, **waɲa**, **yaa**) or turn back (e.g., **kigere** and **turr**), encourage the animal to accelerate its motion (**a** and **uri**) or decelerate it (**dəmə**), make the animal follow its owner (**gar(r)a**), and encourage it to cross a bumpy road or a hill (**dama**). Many of these motion-modifying directionals are accompanied by a tactile sign, i.e., a tap, pull, or jerk.

Although the idea of motion predominates, a significant number of CACs connote actions which are unrelated to movement or in which such an allative component is minor and ancillary. The most evident instances of this are **pji**,

ɔgɔg, and **tenwen** that encourage animals to eat as well as **non** and **{whistle-3}** that encourage animals to drink. Other motion-unrelated CACs are employed to silence animals (**hei**, **ija**, **karikari**, **sipe-daga**), incite them to fight (**dɔɔnɔn**), or calm them (**kenwkenw**, **{kiss-4}**, **krr(u)-krukrukru**). Additionally, the lexeme **jam** communicates approval to an animal and constitutes a CAC equivalent of the English word ‘OK’; **tama** provokes an animal to give a kick to a person; and **{kiss-3}** warns the animal not to bite when the speaker tries to get it out of a trap. Two CACs (**hiya** and **karikari**) can moreover be employed in a wide range of situations where the speaker cautions animals and makes them stop causing any type of damage or nuisance.

A well-represented group of CACs refers to work activities. These CACs are used to make animals start or continue any type of work (e.g., **i** and **yaa**), stop working (e.g., **dɔɛ**, **igiye**, **koi**), or rest after work (**giju**). This work-oriented message seems to derive from an allative (i.e., motion-related) component, which is also present in these CACs.

As far as the animal addressees of CACs are concerned, domestic species are significantly more common than wild species. In total, 55 CACs can be directed to domestic animals. Within this group of animals, the most common referents are cattle, i.e., oxen/bulls and cows. To be exact, cattle can be addressed with at least 25 CACs: 4 CACs are specific to cattle (**dededede**, **mɔmɔmɔ**, **{kiss-1}**, **{kiss-2}**); 14 CACs can be directed to any animal that is used in agriculture or transportation, including cattle; and a further 7 CACs are compatible with cattle and a few other species. The genus *Equus*, i.e., donkeys and horses, can also be addressed with minimally 25 CACs: 3 CACs are exclusively dedicated to donkeys and horses (see **a** and **krr(u)-krukrukru** used with donkeys and **uri** used with both donkeys and horses); 14 CACs are compatible with all agriculture/transportation animals thus donkeys and horses as well; and a further 8 CACs tolerate both *Equi* and certain other species as their referents. The *Caprinae* family, i.e., goats and sheep, is compatible with 8 CACs: 3 are specific to these types of animals (see **mɛmɛmɛ** and **kh'** that are addressed to goats and **ɔrruɔ** that is addressed to sheep) while a further 5 are shared with other species. Poultry are the addressees of 6 CACs: 4 CACs are specific to poultry (**kss**, **kuss(a)**, **!**, **hmhmhm**) while **ssa** is compatible with all birds and **sipe-daga** with any small animal. Dogs and cats have 1 CAC specific to them (**{kiss-5}**) and an additional construction applicable to all small animals mentioned above – **sipe-daga**. Lastly, pigs are the addresses of 1 CAC – **hmhmhm**. All animals listed in this paragraph may be addressed with further 4 CACs that are compatible with any domestic animal (**gar(r)a**, **hiya**, **jii** and **ja**) and 10 CACs that are compatible with all animals whether domestic or wild. By contrast, CACs that can be used with wild animals are much fewer. 3 CACs are directed to birds (**kire**, **ssa**, and **{whistle-2}**) although they can also be employed with poultry and domestic

species. 1 CAC is specifically used with snakes (**{whistle-1}**) and another one with rats, squirrels, and lizards (**{kiss-3}**). As we have already mentioned, 10 CACs are compatible with any animal and thus with wild species too. The above demonstrates that domestic species not only are addressed with many more CACs than wild species but also have a considerably larger number of CACs that are specifically directed to them. See that donkeys, goats, oxen, pigs, poultry, and sheep all have their own species-specific CACs while, for wild species, this is only the case of snakes. Interestingly, most such single-species CACs are summonses.

The greater visibility of domestic species in the CAC category than is the case of wild species is also evident in qualitative terms. Domestic-species CACs are compatible with all semantic classes of actions whether summonses, dispersals, directionals (with all sub-types within directionals) or motion unrelated. In contrast, for wild species, at least if their own CACs are considered, the range of actions is very limited. Wild species are the addressees of a dispersal, a summon, and one CAC that warns an animal not to bite.

CACs can be (nearly) monosemous or, on the contrary, polysemous. The propensity towards monosemy or polysemy is to some degree correlated with the semantic and/or morpho-phonetic types of CACs. A number of CACs are semantically specialized: they demand the performance of a specific action from a specific animal. For example, **hmhmhm** is used to summon pigs while **ɔrruɔ** is used to summon sheep. The most specialized CACs are primary summonses as well as some extra-systematic CACs whether summonses or not (see **{whistle-1}** which is used to summon snakes and **{kiss-2}** which is used to incite oxen to run). Nevertheless, this is not a rule and certain kisses and whistles may be (more) polysemous as illustrated by **{kiss-4}** and **{whistle-2}**. The polysemy of CACs, which is also common, is due to two main factors: a larger set of animal referents to which a CAC can be directed or a more diversified set of actions that a CAC communicates. First, some CACs are compatible with animals that perform similar functions. For instance: donkeys and horses (**uri**); donkeys, cows, and oxen (**dama**); donkeys, cows, oxen, and sheep (**sugo**); donkeys, cows, oxen, and horses (**{whistle-3}**), donkeys, cows, oxen, sheep and goats (**dɔɲɔn**). In fact, as explained above in this section, 14 CACs can be used with any agriculture and/or transportation animals (e.g., **dɔmɛ**, **eda**, **giju**). Some CACs can also be used with any domestic animals (e.g., **gar(r)a**, **hiya**) or with all types of animals regardless of their species and domestication status (e.g., **hoe**, **karja**, **non**). Second, some CACs communicate more than one action. There are three main types of action-related polysemy: the same CAC is used as a dispersal and directional to start/sustain motion; the same CAC is used to stop not only motion of animals but also their work or any other type of action the animal is performing; and the same CAC is used to stop motion of animals and calm them down. Additionally,

some CACs may be used with human referents. This usage with human addressees is almost always grammatical with secondary CACs. As far as primary CACs are concerned, their use with human referents regularly produces very pejorative effects: rudeness and disrespect.

3.3. *Phonetics*

The phonetic make-up of CACs is highly diversified. Several primary CACs are monosyllabic (see **a**, **ja**, **hei**, and **ssa**) or consist of monosyllabic segments replicated in a series (see **de-** in **dededede**, **hm-** in **hmhmhm**, **mɛ-** in **mɛmɛmɛ**, and **mɔ-** in **mɔmɔmɔ**). Nevertheless, disyllabic primary CACs are also attested (see **hiya**, **hoe**, **ija**, **uri**, or **kari-** in **karikari**). One primary CAC (i.e., **kuss(a)**) allows for both a disyllabic and an apocopated monosyllabic realization, while another CAC (i.e., **ɔrruɔ**) consists of 3 syllables. More complex types of syllabic structures are unattested with primary CACs. In contrast to primary CACs, secondary CACs are predominantly disyllabic (e.g., **dama**, **dɔɲɔn**, **eda**, and **gar(r)a**). Monosyllabic secondary CACs are much rarer and the only examples out of the 27 constructions are **go**, **jam**, **non**, **jii**, and **yaa** (see also **turr** which is an adapted loanword from French). Two secondary CACs are trisyllabic (**igiye** and **kigere**) and an additional one consists of 4 syllables (**sipe-daga**).

CACs may draw on vocalic and consonantal material. Indeed, most primary CACs exploit both consonants and vowels (e.g., **ssa** [sːá], **ja** [d͡ʒáʔ], **dededede** [dèʔ.dèʔ.dèʔ.dèʔ], and **karikari** [kárikári]). For secondary CACs, this virtually constitutes a rule – the only exception being **yaa** [jáà], which makes use of an approximant and a vowel. Despite this tendency, the contribution of consonants may be viewed as somewhat more fundamental. This is particularly evident with primary CACs, a few of which exclusively consist of consonants or consonant clusters: **kss** [kʂː(ː)], **mhbmhm** [m̥m̥ʔ.m̥m̥ʔ.m̥m̥ʔ], **!** [!], and **kh'** [kχʰ], as well as the segment [kɾː] in **krr-krukrukru**. In contrast, no purely vocalic primary CACs are attested. However, to be accurate, the consonantism of 5 primary CACs is minimal: two of them contain the glottal stop as their consonants (**a** [àʔ] and **i** [íʔ]) while a further 3 draw on vowels and approximants (**hei** [héj], **hiya** [hijá], and **hoe** [hóé]).

While most CACs exploit sounds that are found in the general word stock of TTKD, several contain or are entirely made up of extra-systematic sounds. These sounds are foreign to (or rare in) the sentence grammar of TTKD. Several types of such extra-systematic sounds found in CACs can be distinguished.

One group of extra-systematic sounds are whistles, which in TTKD may differ in tonal patterns and length. {**whistle-1**} is a punctual, relatively short, and low-

tone whistle which, following Poyatos,⁵⁸ can be annotated as [S^L] or [S4]. **{whistle-2}** consists of two whistles: a short low-tone whistle and a much longer high-tone whistle that are separated by an abrupt short pause. This can be represented as [S^L-S^H] or [S4?S1:]. **{whistle-3}** is longer than **{whistle-1}** and exhibits a raising melody: [S:^{LH}] or [S4:].

Another group, the most numerous among all extra-systematic non-IPA sounds, contains kisses. All kisses with the exception of **{kiss-6}** are variations of the cross-linguistically common kiss [↓B']. This kiss involves a closure made with protruded lips as well as a (more or less marked) dorsovelar closure that together build up an air-pressure tension in the mouth. Once the lips open, the releasing air pressure produces the suction of air which, in turn, results in an ingressive high-pitch sound.⁵⁹ Although [↓B'] shares certain properties with the labial click [ɔ], the two are distinct.⁶⁰ The sound produced with the release of the lips in [↓B'] is "less noisy [...], higher, and more voiceless-like" than is the case of [ɔ].⁶¹ In [↓B'], the production mechanism imitates/coincides with the actual anatomical mechanism of kissing and the prominent use of the *orbicularis oris* muscle results in visible lips puckering. Accordingly, in [↓B'], the lips are "strongly protruded" and exhibit an "endolabial" shape (similar to [w]) while in [ɔ] they are "compressed" and more "exolabial" (similar [p/b]).⁶²

In TTKD, the [↓B'] kiss segment can vary in the duration of the suction and serialization (i.e., being punctual or combined in series). To be exact, **{kiss-1}**

⁵⁸ POYATOS, F. *Paralanguage: A Linguistic and Interdisciplinary Approach to Interactive Speech and Sounds*; POYATOS, F. *Nonverbal Communication across Disciplines. Volume II: Paralanguage, Kinesics, Silence, Personal and Environmental Interaction*.

⁵⁹ Cf. POYATOS, F. *Paralanguage: A Linguistic and Interdisciplinary Approach to Interactive Speech and Sounds*, p. 87; POYATOS, F. *Nonverbal Communication across Disciplines. Volume II: Paralanguage, Kinesics, Silence, Personal and Environmental Interaction*; ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40.

⁶⁰ Cf. POYATOS, F. *Paralanguage: A Linguistic and Interdisciplinary Approach to Interactive Speech and Sounds*; POYATOS, F. *Nonverbal Communication across Disciplines. Volume II: Paralanguage, Kinesics, Silence, Personal and Environmental Interaction*; BEST, C. Perception of non-native click consonant contrasts: Implications for theories of speech perception. In Bonny Sands (ed.). *Click Consonants*, pp. 179–209; ANDRASON, A. Conative "kisses" in human-to-animal communication. In *Łódź Papers in Pragmatics*, forthcoming.

⁶¹ ANDRASON, A. Conative "kisses" in human-to-animal communication. In *Łódź Papers in Pragmatics*, forthcoming, p. 12.

⁶² Ibid.

consists of three [\downarrow B'] segments: the first segment exhibits an unmarked duration that we refer to as 1 unit (a quarter note), while the two other segments count half the duration of the first segments each (an eighth note) – thus, in total equating to it. This produces a melodic sequence: \downarrow - \downarrow \downarrow or a “tam tam.tam” beat. {**kiss-2**} has a punctual realization and is produced with a significantly longer suction, being at least twice as long as the first segment [\downarrow B'] in {**kiss-1**}. It is roughly equivalent to a half or full note, i.e., \downarrow / \circ or a “taa(a)m” beat and can be annotated as [\downarrow B':(:)]. {**kiss-3**} is a series of four beats: two consecutive one-unit beats and two half-unit beats, i.e., \downarrow \downarrow \downarrow \downarrow or a “tam tam tam.tam” melody. Alternatively, there may be three one-unit beats instead of two. {**kiss-4**} is a series of five (or more) beats of a normal one-unit duration: \downarrow \downarrow \downarrow \downarrow \downarrow or a “tam tam tam tam tam” melody. {**kiss-5**} is a series of four long (half note) or extra-long (full note) segments, i.e., \downarrow \downarrow \downarrow \downarrow / \circ \circ \circ \circ , which sounds like a “taa(a)m taa(a)m taa(a)m taa(a)m” melody. As mentioned above, {**kiss-6**} is different – it is a series of 7 or 8 short sounds that make use of both kiss-like and click-like mechanisms. On the one hand, as is common of kisses, the lips are strongly rounded and protruded and transition from being closed to open. However, similar to clicks, there is another closure and release formed by the tongue that touches the upper teeth, similar to that taking place when producing the dental click [t].

The sound that we annotate with a general label {**sound-1**} is produced with the mouth being closed and the lips strongly rounded but minimally protruded. The tongue and lips form a simultaneous dorsal and labial tension, similar to that when gathering saliva before spitting. The release of the tongue from its palatal/alveolar position (without opening the lips) produces an inward movement of the air and saliva with a characteristic non-pulmonic deep dull sound.

Apart from the above-mentioned sounds, there is a group of extra-systematic phones that can be captured with the IPA and form part of the phonetic repertoires of the languages of the world. The first sub-class includes sounds that are absent in the TTKD general (sentence-grammar) word stock. The CAC ! is a click with the closure made by the tip or the blade of the tongue pressing against the alveolar region of the mouth (apart from the concurrent velar closure formed by the back of the tongue against the roof of the palate, which is characteristic of all clicks). The sudden release of the pocket of air captured between the two closures – and “the abrupt equali[z]ation of air pressures inside and outside the mouth”⁶³ – produces a loud, dull, and popping sound. The CAC **kh'** approximates a cluster (or an affricate) composed of a velar ejective [k'] and a guttural fricative release

⁶³ MADDIESON, I., SANDS, B. The sounds of the Bantu languages. In VAN DE VELDE, M. et al. (eds.). *The Bantu Languages*, pp. 79–127 (see p. 99).

[χ], similar to **kr** [kχ'] in Xhosa. This quite rugged realization is acoustically similar to an “emphatic” or strongly glottalized Spanish “jota”. **Hmhmm** is a nasal, closed-mouthed, glottalized sound that additionally involves some nasal friction. It is built around a segment that consists of three articulations: a voiceless labial nasal, a voiced labial nasal, and a glottal stop, i.e., [m̥m̩ʔ].⁶⁴

The remaining extra-systematic sounds, i.e., [ʔ], [h], [r], and [ʀ/ʁ/ɾ], are sounds that although attested in TTKD are uncommon and/or heavily marked in the lexical classes of sentence grammar. In the general word stock of TTKD, as is the case of Togo-Teɲu Kan more widely, the glottal stop [ʔ] is rare and only found as a “junctural element in some reduplicated forms of vowel-initial stems”.⁶⁵ In CACs, the presence of [ʔ] is both common and, positionally, more diverse. That is, in addition to its use in replicated vowel-initial stems, which is attested in [əŋʔəŋ], [ʔ] features in certain types of codas. It appears as a coda element in monosyllabic CACs ([àʔ], [íʔ], and [d͡ʒáʔ]) and CACs exhibiting a replicated structure ([dèʔ.dèʔ.dèʔ.dèʔ], [mèʔ.mèʔ.mèʔ], [mòʔ.mòʔ.mòʔ]). [ʔ] is also found in [m̥m̩ʔ.m̥m̩ʔ.m̥m̩ʔ]. The consonant [h] is not an original phone in Togo-Teɲu Kan, being rather limited to stem-initial loans from Fulfulde and a few areal forms.⁶⁶ It is however found in four CACs (in total 7% of CACs), in both word-initial onsets (**hei** [héj], **hiya** [híjá], and **hoe** [hóé]) and word-final codas ([d͡ʒèh]). CACs also host some variations of **r** sounds that are avoided in the general word stock. First, the CACs [gár(:)á] and [ɔ̃r::ũó] attest to a proper trill [r] rather than a tap [ɾ], which is typical of the standard phonetic inventory of Togo-Teɲu Kan.⁶⁷ Second, **turr** borrowed from French (**tourne** ‘go back’) attests to a guttural realization of the **r** sound, i.e., [tùʀ]/[tùʁ] that can further be weakened to [tùɾ:] and, although less often, [tùv:]. The realizations of **r** as [ʀ]/[ʁ]/[ɾ]/[v] are extremely rare in TTKD, being generally limited to borrowings as in the above-mentioned CAC.

CACs exhibit a series of phonotactic peculiarities when compared to the standard phonetic system. Perhaps, the most radical exponent of this is the tolerance of non-vocalic nuclei and non-vocalic words as illustrated by [kɤ:(:)], [m̥m̩ʔ.m̥m̩ʔ.m̥m̩ʔ], and [kɾ::] in [kɾ:: krũkrũkrũ], as well as [!] and [kχ'].

With regard to syllable structures, Togo-Teɲu Kan syllables tend to be of a (C)V and, although less often, (C)V: type. The third structural type, i.e., (C)VC is exceptional being only found if the coda consonant is a sonorant or [g]. In fact, even though syllables with a final sonorant are attested, this occurs “sporadically”

⁶⁴ Cf. POYATOS, F. *Nonverbal Communication across Disciplines. Volume II: Paralanguage, Kinesics, Silence, Personal and Environmental Interaction*, p. 152.

⁶⁵ HEATH, J. A *Grammar of Togo Kan (Dogon Language Family, Mali)*, pp. 13, 15.

⁶⁶ *Ibid.*, p. 14.

⁶⁷ *Ibid.*

and in a stem-internal position only.⁶⁸ In a word-final position, sonorants have either been lost or are found in borrowings such as **lǎy** ‘garlic’ adapted from the French **l’ail**.⁶⁹ In CACs, coda sonorants are common and occur not only stem-internally ([kárdʒà]) but also stem-finally ([d̥ʒām], [héj], [kój], and [kéw̥kéw̥]). In addition to (C)VC with [g] in the coda (which is also attested in [ògʔòg]), CACs tolerate two further types of (C)VC, namely CVʔ (e.g., [íʔ] and [dèʔ.dèʔ.dèʔ.dèʔ]) and CVh ([d̥ʒəh]). Moreover, in the standard vocabulary, “stops and fricatives [...] occur predominantly in stem-initial position”, again with the exception of [g]. Other positions are limited to loanwords, reduplications, and compounds.⁷⁰ In contrast to this, the placement of obstruents in CACs is not limited to a stem-initial position. Apart from the various cases where [ʔ] appears stem/word-medially and finally (see above), CACs allow for [d] and [d̥ʒ] in a non-initial position (see [édà], [gid̥ʒù], and [kárd̥ʒà]). Lastly, as is common in the standard system, [g] is found stem-internally (see [kìgéré], [síné-dàgà], and [sùgó]).

CACs exhibit certain extra-systematic properties with regard to clusters and consonantal length. While Togo-Teŋu Kan fails to contain “tautosyllabic word- or suffix-initial consonant clusters”,⁷¹ CACs tolerate word-initial onset clusters as illustrated by [kʂ:(ː)] and [kr:(ː)(ū)-krūkrūkrū]. Similarly, while word-medial clusters, including geminated consonants, do not occur in the general repertoire in Togo-Teŋu Kan,⁷² medial consonants may be geminated in CACs in TTKD (see [gár:á]). In fact, CACs allow geminated (or long) consonants even in word-initial onsets ([s:á]) and word-final codas ([tùr/ʁ:I:]), which are all disallowed in the general system. A geminated or long consonant may also be nucleic as in [kʂ:(ː)]. In a stark contrast with the standard phonetic system, long consonants in the above-mentioned CACs are often realized as extra-long. For one CAC (see [òr:(ː)ú]), this extra-long realization is the most common.

Apart from exhibiting extra-systematic sounds and sound combinations, CACs are characterized by a range of distinct suprasegmental features. These are generally referred to by the term ‘modulations’, which encompasses all types of intensity and loudness, as well as a marked rate of delivery, intonation, and phonation.⁷³ Summonses are strongly correlated with friendly intonation

⁶⁸ HEATH, J. A *Grammar of Togo Kan (Dogon Language Family, Mali)*, pp. 13, 20.

⁶⁹ *Ibid.*, p. 20.

⁷⁰ *Ibid.*, p. 14.

⁷¹ *Ibid.*, p. 16.

⁷² *Ibid.*

⁷³ ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40 (see p. 34).

surfacing in higher pitch and gentle or melodic articulation.⁷⁴ In contrast, dispersals are typically realized aggressively, i.e., loudly, rapidly, and with particular intensity that is visible through the gemination of the consonants.⁷⁵ Similar characteristics apply to the directionals used to start or sustain motion. The only primary directional employed to stop motion makes use of prolongation (see [kr::ū/kɾ::] in **krr(u)-krukrukru**).⁷⁶

The different semantic types of CACs also exhibit certain tendencies with regard to the consonants and vowels used. Summonses are those CACs that make the largest use of extra-systematic sounds (see {**kiss-1, 2, 5**}, {**whistle-1 and 2**}, {**sound-1**}, **!**, and **kh'**). Phonetically systematic summonses tend to exploit E- and O-type vowels and have an onomatopoeic foundation (e.g., **dededede**, **mēmēmē**, **mōmōmō**, **ɔrruɔ**, and **hmhmhm**; see next section). Dispersals that are neither secondary nor of interjective origin, tend to draw on sibilants, usually accompanied by a voiceless velar stop [k] (see **kss**, **kuss(a)**, and **ssa**).

3.4. Morphology

Similar to what we observed in phonetics, the morphology of CACs in Togo-Tedu Kan of Dourou is heterogenous: some CACs are characterized by radical simplicity while others by (a certain degree of) complexity. The presence of simple and complex morphology is motivated and, in general, correlates with the primary and secondary status of a CAC, respectively.

Slightly more than a half of CACs (29x) are primary. These CACs have been used in a directive-to-animal function from the beginning of their grammatical birth. Alternatively, should they draw on non-CAC sources, their evolution into CACs is so profound that any link with the input expressions is currently unrecoverable (see Section 2).⁷⁷ To this group, we also include CACs that have an onomatopoeic foundation. Although these CACs imitate the sounds made by

⁷⁴ Cf. Ibid. (see pp. 19, 36); ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54 (see p. 39).

⁷⁵ Cf. ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54 (see p. 39).

⁷⁶ Cf. ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40 (see pp. 34–35).

⁷⁷ ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40; ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54 (see p. 29).

the animals to which they are directed and thus share their form with proper onomatopoeias (see, for instance, **hbmhm**, **mēmēmē**, and **mōmōmō**), it is likely that the use in a directive-to-animal function is as primary as the imitative one. That is, onomatopoeias and CACs exploited the same phonesthetic strategy although for two distinct purposes: referential (to talk about an action) and directive (to demand the performance of an action).⁷⁸ Additionally, we view the few CACs that share their form with conative interjections which are compatible with human addressees (e.g., **hei**, **i**, **ija**) as primary as well. This stems from the fact that the two uses instantiate the same category, irrespective of whether one follows the “old”⁷⁹ or “new”⁸⁰ terminology, thus being classified as interjections or directives. In both cases, these constructions are the primary members of the respective lexical classes. Whether the use with animal referents is secondary to human addressees or not, cannot be clearly determined. In principle, these constructions may have functioned as human-to-animal conatives from the beginning of their grammatical life, as is the case of the above-mentioned CACs of an onomatopoeic foundation. In fact, their primary interjective or directive status and gesture-like character make their primacy in the CAC category as plausible as is the case of any other primary CAC.

All primary CACs are monomorphemic. They are roots (or root-like matrices)⁸¹ that do not contain more than one meaning-bearing unit. This precludes the presence of inflections, derivations, and compounding. The only sign of morphological complexity are replications, which are particularly common with summonses (see **dededede**, **hbmhm**, **krr(u)-krukrukru**, **mēmēmē**, and **mōmōmō**). However, as is typical of CACs in other languages,⁸² such replications constitute, in our view, an expressive phonetic device rather

⁷⁸ Cf. ANDRASON, A., ANTWI, M., DUAH, R. *Phylogenetics of Conative Animal Calls: Asante, Bono, and Fante*. Talk at the Semantics Colloquium, Institute für Linguistik, Goethe Universität Frankfurt, 4 May 2023.

⁷⁹ AMEKA, F. Interjections: The universal yet neglected part of speech. In *Journal of Pragmatics*, 1992, 18(2/3), pp. 101–118; AMEKA, F. The meaning of phatic and conative interjections. In *Journal of Pragmatics*, 1992, 18(2/3), pp. 245–271.

⁸⁰ HEINE, B. *The grammar of Interactives*.

⁸¹ MEINARD, M. Distinguishing onomatopoeias from interjections. In *Journal of Pragmatics*, 2015, Vol. 76, pp. 150–168.

⁸² ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40; ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54; ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragmatic-semantics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342.

than a derivative morphological strategy.⁸³ In further similarity to what typifies CACs across languages, the basic segments of such replicative series (e.g., **de-**, **hm**, **kru-**, **mɛ-**, and **mɔ-**) cannot generally be used as individual “punctual” CACs. Nor does the meaning of a CAC change if any of the series mentioned above is extended by another segment – a mechanism that is always grammatical. In all such cases, the meaning of a CAC remains unchanged: the construction concerns the same animal(s) and points to the same action(s). This indivisibility of replicated CACs into more fundamental morphemes is also evident with kisses and whistles. These CACs must be treated holistically as complex yet indissoluble patterns – oral gestures unsegmentable into individual meaning-bearing units – rather than compositions of more fundamental morpheme-like “kissing” or “whistling” elements.

While primary CACs predominate, the group of secondary CACs is also well attested (26x). In TTKD, the sources of secondary CACs can be verbs, adverbs (and adjectives), nouns, discourse particles, and small phrases/clauses composed of nouns and verbs. Most secondary CACs derive from imperative verbs (14x), typically directed to a 2nd-person-singular referent (e.g., **dama** lit. ‘go up!’, **dɔmɛ** lit. ‘wait/stop!’, **dɔɲɔn** lit. ‘kick!’, **gar(r)a** lit. ‘go past!’, **igiye** lit. ‘stop!’, **kigere** lit. ‘go back!’, **non** lit. ‘drink!’, lit. **jii** ‘eat!’, (**sipe**) **daga** lit. ‘cease/stop (noise)!’, **sugo** lit. ‘go down!’, **tama** lit. ‘kick!’, **tenwen** lit. ‘masticate!’, lit. **waɲa** ‘turn!’, and **yaa** lit. ‘go!’).⁸⁴ In one case, the imperative is hortative being addressed to a 1st-person-plural referent, thus including both the speaker and the animal (**yamu** – lit. ‘let’s walk!’). Additionally, the CAC **dɔɛ** is a perfective form of the verb **dɔi** ‘arrive, come’, i.e., ‘arrived’. Adverbs constitute the other robust source of secondary CACs (6x). These input adverbs can be of two types: adverbs of manner (**koi** ‘well’, **ɔg** ‘quickly’, **kenw** ‘calmly’, and **giju** ‘suddenly’) and deictic adverbs of place (**enda** ‘over there’ and **unda** ‘here’). In two instances (**kenw** and **koi**), the input form may also be analyzed as an adjective (‘calm’ and ‘good’, respectively). One CAC draws on the noun **jam** ‘peace’ and another one on a discourse particle **kari** that is commonly used in warnings. Lastly, the CAC **sipe-daga** derives from a small clause composed of a noun (**sipe** ‘noise’) and an imperative verb (**daga** ‘stop!’).

⁸³ Cf. HEATH (HEATH, J. *A Grammar of Togo Kan (Dogon Language Family, Mali)*) who refers to this strategy as “expressive” replication.

⁸⁴ Although these CACs (as well as many other secondary ones) comply with the operationalized definition introduced in Section 2 and, given our radial/prototype-driven approach, belong to the category of CACs in TTKD, their categorial status is certainly less canonical than is the case of primary CACs. The only properties that differentiate these CACs from other imperatives is their common use with animals and the possibility to be used not only with a single addressee but also a group (see further below).

While primary CACs are monomorphemic, secondary CACs may consist of more than one (radical/matrix) morpheme. For example, several imperative-based CACs are composed of a verbal root/stem and a 2nd-person-singular imperative marker. Given the heterogeneity of imperative marking in TTKD, several types of imperative encodings are attested in these CACs. See, for instance, **kigiri** ‘go back’ versus **kigere** ‘go back!’ and **ye** ‘go’ versus **yaa** ‘go!’. For a few verbs, the 2sg imperative inflection is encoded by means of tone alone: **gàrá** ‘go past’ versus **gárá** ‘go past!’. For others, the forms used in the verbal root/stem and the 2sg imperative (and thus the respective CAC) are the same: see **jii** ‘eat (!)’ and **sugo** ‘go down (!)’. The CAC **yamu**, which draws on a hortative form (lit. ‘let’s go!’), is built around the verbal stem **yai-** and the 1st plural ending **-mu**. Lastly, **dɛ** (lit. ‘arrived’) consists of the verbal stem **dɔi** ‘arrive, come’ and the perfect marker **-ɛ** (compare with **taru** ‘scotch’ > perfect **tar-ɛ** ‘have/had scotched’ and **lagu** ‘hit’ > perfect **lag-ɛ** ‘have/had hit’). Interestingly, during the CAC-ization of one verbal form, i.e., **gara**, the imperative has been additionally marked by a “stronger” and/or more emphatic realization of an **r** sound. That is, while the tap [ɾ] is used in the genuine imperative, the corresponding CAC form exhibits the trill [r], which can moreover be – and often is – lengthened to [r:] (see section 3.2).

Another manifestation of morphological complexity in secondary CACs is compounding. The most evident example of this involves the amalgamation of identical input forms, which is relatively common of non-verbal sources of CACs, especially adverbs and discourse particles. Compare the CACs **kenwkenw**, **ɔgɔg**, and **karikari** with **kenw** ‘calmly’, **ɔg** ‘quickly’ and **kari** ‘attention!’. In contrast to the onomatopoeic CACs, in which replication is an expressive phonetic device, this type of replication may be viewed as a morphological strategy even though it certainly has an expressive effect as well. Indeed, in Togo-Teṇu Kan, full replication typifies not only onomatopoeias but also adjectival intensifiers and deverbal expressive adverbials.⁸⁵ Lastly, the CAC **sipe-daga** which, as mentioned above, derives from a small clause, combines three morphemes: the nominal root **sipe** ‘noise’ and the verb **dagu** ‘cease/stop!’ which is additionally marked by the 2sg imperative suffix and tonal pattern and surfaces as **dàgà**.⁸⁶ It should be noted that the morphological complexity exhibited by secondary CACs is not the property of the respective CACs, but rather reflects their non-CAC origin. The only exception is the reduplication attested in CACs derived from adverbs and discourse particles, as well as the

⁸⁵ HEATH, J. *A Grammar of Togo Kan (Dogon Language Family, Mali)*, pp. 65, 159, 164.

⁸⁶ The imperative suffix **-a** is formed by substituting the infinitive suffix **-u**.

consonantal strengthening, which could also be analyzed in terms of (phonological) replication ([r] > [r:]).

Apart from primary and secondary CACs, TTKD contains two CACs that have been borrowed from other language systems. As it was mentioned in Section 3.3, **turr** comes from the French 2sg imperative **tourne** [tuʁn(ə)]. The original cluster [ʁn/ɛn] has been resolved (or simplified) into a long consonant [ʁ/ɛ:] generally ‘weakened’ to an approximant [ɹ:] which can further be debilitated to [v:]. The other borrowing, i.e., **karja**, draws on the homophonous Fula/Pular CAC [kardʒa] that is used to chase dogs. While during its adaptation to TTKD, the form seems to have been maintained intact, the meaning has shifted and expanded. In TTKD, **karja** is compatible with all animals and is principally employed to make the animal stop doing anything that the speaker perceives as annoying.

As was the case with the phonetic substance of CACs, their morphology is, to an extent, correlated with the determined semantic types. Summonses are strongly correlated with (non-derivative) replication. By contrast, dispersals and ‘go’-type directionals are correlated with punctual, i.e., non-replicated forms, although they can be repeated (see Section 3.5 dedicated to syntax).⁸⁷

Contrary to what we observe in phonetics, CACs do not violate typical word structures of TTKD. This, however, reflects more the grammar of the language instead of stemming from some type of apparent systematicity of CACs. Indeed, nouns, verbs, adjectives, and adverbs do not have any intrinsic affixal marking in TTKD. This means that each of these categories can appear in its bare root/stem form.⁸⁸ Therefore, the radical structure of primary CACs is not extra-systematic *per se*. Nevertheless, both nouns and verbs may also host inflectional (e.g., plural and tense-aspect-mood-negation) and derivational (e.g., reversive and causative) morphemes.⁸⁹ While primary CACs are incompatible with these types of affixes, there are many other lexical classes which, similar to CACs, fail to host affixes (e.g., adverbs, adpositions, and several kinds of interactives).

Given the morphological heterogeneity of CACs evident from the discussion above, the CAC category in TTKD may be viewed as opaque when considered in its totality. That is, despite certain tendencies, the directive-to-animal function

⁸⁷ Cf. ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, Vol. 37(1), pp. 3–40 (see pp. 34–35); ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragma-semantics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342.

⁸⁸ See HEATH, J. *A Grammar of Togo Kan (Dogon Language Family, Mali)*, pp. 59, 167, 178–179.

⁸⁹ HEATH, J. *A Grammar of Togo Kan (Dogon Language Family, Mali)*.

is not linked to a morphological pattern that would be exclusive to CACs. On the contrary, CACs may exhibit any types of forms and encoding manners. This is clear if one compares primary CACs with secondary CACs. However, opacity also typifies primary CACs, which lack a clear recognizable structure – the lack of any CAC-izers being the most evident exponent of this. One could argue that it is the morphological simplicity that is the most salient “mark” of CACs. Nevertheless, the absence of complex morphology is not limited to CACs but also characterizes interjections and many other interactive or functional (e.g., adpositions and conjunctions) lexical classes. Overall, each CAC must be learned individually as a new entry in the TTKD lexicon.

3.5. *Syntax*

All CACs collected by us may be used as both (more) lexical and (more) holophrastic elements. That is, CACs can function as words that belong to larger sentences and syntactic frames, or they can themselves be like sentences and constitute self-standing non-elliptical utterances.

The holophrastic usage of CACs is extremely common. It is certainly expected with secondary CACs that are derived from imperative verbs since all such verbs can, on their own, form fully fledged clauses and sentences in TTKD, as is also the case of many other languages. However, non-verbal secondary CACs and primary CACs tolerate such holophrastic uses equally well. The most evident examples of this are instances in which a CAC features as the only linguistic signal when communicating with an animal. This behavior links CACs to (emotive) interjections and other directives addressed to humans – both in TTKD and crosslinguistically.⁹⁰

While holophrastic uses are very common, CACs may also be employed as parts of sentences and word-like elements. In such cases, CACs enter into several types of syntactic constructions. These may range from less to more syntagmatic; they may also be vertical (hierarchical) or horizontal (non-hierarchical).

To begin with, secondary CACs of verbal origin may function as elements that are fully integrated into core-clause grammar, i.e., as intransitive (e.g., **dama** and **kigere**) or transitive (e.g., **non** and **jii**) predicates. These CACs can form vertical constructions in which they govern or cooccur with arguments (e.g., a patient argument with **non** and **jii** as in 1 below) and adjuncts, especially words and phrases expressing location (also direction and provenance), temporal relations,

⁹⁰ Cf. ANDRASON, A., DLALI, M. The (crucial yet neglected) category of interjections in Xhosa. In *STUF – Language Typology and Universals*, 2020, Vol. 73(2), pp. 159–217; HEINE, B. *The grammar of Interactives*.

and the ideas of means or manner. These types of CACs may also be modified by a wide range of particles (e.g., modal and pragmatic (discourse markers)).

- (1) **yɔ** **ɲii!**
 that eat.IMP
 Eat that!

While the above syntagmatic phenomena are unsurprising given the verbal origin of these CACs, they are also (at least to some extent) possible with other secondary CACs as well as primary CACs. For instance, similar to deverbal CACs, all other CACs may cooccur with adjuncts expressing spatial, temporal, and means/manner-related information:

- (2) **karikari** **kaanu** **sɛsɛsɛ!**
 CAC immediately very
 Stop it now!

CACs may also form horizontal constructions with other elements of a sentence or utterance. The most common of such elements are vocatives: proper names given to animals (3.a), common nouns referring to particular species or types of animals (3.b), and 2nd person pronouns.

- (3) a. **uri** **binumaran!**
 CAC big_stomach.PN
 Go faster, Big Stomach!
- b. **anranpɔru** **kigere!**
 male_castrated CAC
 Castrate male, turn back!

Additionally, CACs enter into horizontal structures with emotive interjections (for instance, those that express annoyance or anger motivated by an animal causing some damage as in 4.a) and imperative verbs (4.b):

- (4) a. **aah** **karikari!**
 INTJ CAC
 Ah, stop it!
- b. **hiya** **unguru** **yɛ** **dɔ!**
 CAC leave there go
 Stop (it), leave it and go there!

The use of imperatives with CACs is especially common. This seems to stem from the fact that spatial, temporal, and means/manner relationships pertaining to CACs are more often expressed through adjacent verbal forms (5.a-b) rather than genuine adverbs accompanying the CAC itself (as was the case of (2) above). Arguably, CAC would thus form some types of serialized constructions: the CAC specifies the referent (a particular species) and the main action that is being ordered, while the other verb provides additional aspectual (5.a) and/or locative (5.b) clarifications:

- (5) a. **ja** **ɔgiriye!**
 CAC do.quickly
 Go away (do it) quickly!
- b. **{sound-1}** **yo** **yo!**
 CAC get.in(side) get.in(side)
 Come (get) in (get) in(side)!

CACs may – and often are – combined into sequence. They co-occur with other CACs (whether similar or dissimilar in meaning) or with the same CACs (see 6 below). Contrary to replication, such sequences of identical CACs are not stabilized into synthetic word-like patterns and are often separated by a pause (see further below).

- (6) **papaduŋu** **hei** **hei** **kigere!**
 strong_elephant.PN CAC CAC CAC
 Strong-like-elephant, go away, go away, turn back!

According to our data, most non-holophrastic CACs appear in the left periphery of a sentence, usually at its initial margin. If a CAC is preceded by a horizontal element (a vocative, interjection, imperative, or another CAC), it need not appear as the first element in a sentence (see 3.a above). Less commonly, CACs are found at the end of a sentence in its right periphery, e.g., following an imperative verb:

- (7) **gono** **uke** **nu** **dɔ** **{kiss-6}!**
 farm your in enter CAC
 Enter in your farm, hurry up!

In several instances, non-holophrastic CACs that occupy peripheral positions are separated from the other parts of the sentence, especially the core clause, by a well-audible pause (see 4.b and 7 above). Nevertheless, well-integrated CACs that are the heads of their own clauses need not be separated by a pause from their

dependents and modifiers (see 1 and 2 above). The same holds true of some horizontal constructions, e.g., those involving vocatives and interjections, which may be phonologically less or more compact.

4. Discussion

The evidence presented in the previous section allows us to propose a series of generalizations concerning CACs in Togo-Tedu Kan of Dourou:

- (a) With regard to semantics, CACs can oscillate between (near) monosemy or (extensive) polysemy with equal propensity. A restricted scope of semantic potential is more typical of primary summonses and phonetically extra-systematic CACs (i.e., whistles and kisses) than is the case with the other types of CACs. Polysemy stems from the compatibility of a CAC with more than one type of referent and one type of action. CACs directed to domestic animals are more numerous and more diversified than those directed to wild species. The action expressed by a CAC may pertain to motion or, also quite commonly, meanings unrelated to motion or loosely related to it (these latter meanings are usually conveyed by secondary CACs).
- (b) With regard to phonetics, CACs are highly diversified: primary CACs are monosyllabic or consist of a series of monosyllabic segments; in contrast, secondary CACs are predominantly disyllabic. CACs exploit vocalic and consonantal material although the contribution of consonants seems more fundamental in primary CACs. Primary CACs may draw on extra-systematic sounds: non-IPA sounds (i.e., whistles, kisses, and other types of sounds) and IPA sounds (clicks, glottalized clusters, and a glottalized voiceless labial nasal). Primary CACs make more abundant use of consonants that are otherwise rare in TTKD (e.g., the glottal stop, glottal fricative/approximant, and an array of *r*-type phones) than secondary CACs. They also exhibit a range of phonotactic peculiarities: non-vocalic nuclei and words, aberrant structures of syllables, and broader spectrum of closed syllables and consonant clusters. All CACs tend to be accompanied by suprasegmental modulations, i.e., intensity, loudness, articulatory speed, and marked phonation. These modulations as well as the use of certain consonants and vowels are sometimes correlated with semantic types of CACs: summonses with higher pitch, melodic articulation, and extra-systematic sounds/phones; dispersals and ‘move-forward/continue-motion’ directionals with an abrupt, loud, and intense pronunciation; additionally, dispersals make use of sibilants and a voiceless velar stop.

- (c) With regard to morphology, CACs are heterogenous fluctuating between simplicity (primary CACs) and complexity (secondary CACs). Primary CACs are radical (matrices) with no inflections, derivations, and compounding. When attested, replications constitute an expressive phonetic device rather than a derivative and morphological one. Secondary CACs (that draw on verbs, adverbs/adjectives, nouns, discourse particles, and small phrases/clauses) may consist of several inflectional/derivational morphemes and make use of compounding. For these CACs, replication constitutes a genuine derivational mechanism. However, except for the replication mentioned above, complexity is not the property of secondary CACs but rather stems from their verbal, nominal, or phrasal origin. A few CACs are borrowed and exhibit certain phonetic and/or semantic adaptations. The morphology of CACs is partly correlated with their semantics: summonses are replicated while dispersals and ‘move-forward’ directionals are punctual. CACs do not violate the typical word structures found in TTKD due to the particular properties of the sentence-grammar lexical classes rather than the systematicity of CACs themselves. In its totality, the CAC category is opaque.
- (d) With regard to syntax, CACs can function lexically as words in syntactic frames or holophrastically as self-standing utterances. Non-holophrastic CACs form syntagmatic vertical (hierarchical) and horizontal (non-hierarchical) constructions. CACs can be vertically integrated into core-clause grammar projecting arguments (for secondary CACs of verbal origin) and/or accompanied by a wide range of adjuncts (for all CACs). Horizontally, CACs combine with vocatives (nouns and pronouns), interjections, imperative verbs, and other CACs. Non-holophrastic CACs often appear in the left periphery and may be separated from the other sentential elements by a pause. However, well-integrated CACs (vertical and horizontal) need be neither peripheral nor phonologically detached.

The above results allow us to conclude that the category of CACs in TTKD generally displays the features that harmonize with the crosslinguistic prototype of CACs posited in literature.⁹¹ This compliance may, in turn, be understood as confirming the validity of the prototype.

⁹¹ ANDRASON, A., KARANI, M. Conative calls to animals: From Arusa Maasai to a cross-linguistic prototype. In *Łódź Papers in Pragmatics*, 2021, VOL. 37, pp. 3–40; ANDRASON, A. Conative animal calls in Xhosa: Testing the prototype. In *Africana Linguistica*, 2022, Vol. 28, pp. 25–54; ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragma-semantics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342.

Our results also corroborate certain refinements to the prototype proposed more recently in scholarship. To be exact,

- (a) ANDRASON, ONSHO MULUGETA and SHIMELIS MAZENGIA⁹² hypothesize that primary summonses exhibit an onomatopoeic foundation more commonly than any other types of CACs. Our data fully endorse this proposal.
- (b) Drawing on 79 languages, ANDRASON⁹³ postulates that the prototypical form of a dispersal is a CVC structure with [k] and [ʃ/s] as the consonantal onset and coda and the vowels [I] or [U] in the nucleus. The form of primary dispersals in TTKD supports this hypothesis.

However, our results also challenge certain propositions that have been formulated in recent scholarship:

- (a) It has been hypothesized that the three main semantic classes of CACs yield a hierarchy of representativeness in a language. Drawing on Tjwao data, ANDRASON and PHIRI⁹⁴ propose that summonses and dispersals are more common than directionals (and CACs that are unrelated to motion). ANDRASON, ONSHO MULUGETA and SHIMELIS MAZENGIA⁹⁵ report a different hierarchy in Macha Oromo: summonses are more numerous than directionals which are, in turn, better represented than dispersals. Our data points to yet another hierarchical relationship: directionals are more numerous than summonses, which themselves are more numerous than dispersals. We therefore think that hierarchies attested in particular languages need not manifest any linguistic tendencies but merely reflect the types of animals with which humans tend to interact and these animals' roles in the respective communities.

⁹² ANDRASON, A., ONSHO, M., SHIMELIS, M. Conative animal calls in Macha Oromo: Function and Form. In *Linguistic Vanguard*, 2024, pp. 1–12.

⁹³ ANDRASON, A. The non-arbitrariness of some conative calls used to chase animals. In *Linguistica Silesiana*, 2023, Vol. 44, pp. 73–103.

⁹⁴ ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragmatics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342 (see p. 337).

⁹⁵ ANDRASON, A., ONSHO, M., SHIMELIS, M. Conative animal calls in Macha Oromo: Function and Form. In *Linguistic Vanguard*, 2024, pp. 1–12.

- (b) Drawing on Maasai and Tjwao data, ANDRASON and PHIRI⁹⁶ hypothesize that whistles are the most common among all non-IPA sounds exploited by CACs. In Togo-Tegu Kan of Dourou, it is kisses that are the most common non-IPA sounds, rather than whistles.
- (c) Additionally, reviewing data from Tjwao, Arusa Maasai, and Xhosa, ANDRASON and PHIRI⁹⁷ propose that summonses tend to contain high and/or front vowels (i.e., I- or U-type) and bear high tones, in harmony with the “friendly” pronunciation correlated with these types of CACs. While this proposal is corroborated by Oromo evidence,⁹⁸ TTKD data do not support it (note the use of E and O type vowels and the common presence of low tone).

Lastly, our results point to some new characteristics that could be of relevance for the typology of CACs:

- (a) Summonses and dispersal tend to be primary rather than secondary; in contrast, directionals are those CACs that exploit secondary sources to the largest extent.
- (b) CACs may form directive serializing pattern with verbs. This likely stems from the fact that CACs and verbs exhibit semantic and syntactic similarities: both express actions and activities and may project arguments (especially external, i.e., subject) and be accompanied by adjuncts. (In fact, CACs are sometimes viewed as non-verbal equivalents of verbal imperatives).⁹⁹ Exhibiting predicate-like behavior, CACs lend themselves to form serializing patterns with canonical verbs when these are employed in a directive function. Within the spectrum of serializing constructions, those containing CACs would arguably be non-canonical.¹⁰⁰ That is, although (a) the CAC and the verb used in a serializing pattern can also appear on their own outside

⁹⁶ ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragma-semantics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342 (see p. 337).

⁹⁷ Ibid.

⁹⁸ ANDRASON, A. ONSHO, M., SHIMELIS, M. Conative animal calls in Macha Oromo: Function and Form. In *Linguistic Vanguard*, 2024, pp. 1–12.

⁹⁹ AIKHENVALD, A. *Imperatives and Commands*; GROCHOWSKI, M. Wprowadzenie do analizy syntaktycznej wykrzykników. In *Polonica*, 1988, Vol. 13, pp. 85–100.

¹⁰⁰ See AIKHENVALD, A. *Serial Verbs*; ANDRASON, A., AIKHENVALD, A. The rise and fall of Serial Verb Constructions: Preamble. In *Stellenbosch Papers in Linguistics PLUS*, 2022, Vol. 65, pp. 1–9.

this construction, (b) are not connected through clause combining markers, and (c) may exhibit a single value for aspect, mood/modality, and polarity as well as a unitary argument structure (e.g., operators of time, place, and manner/instrument/means can operate jointly over the entire serializing construction), the CAC, especially a primary one, is not marked by the same TAM markers as the verb and the CAC and the verb may be (and often are) separated prosodically.

The natural and cultural context of TTKD and its speakers profoundly conditions the structure of the category of CACs. The set of species attested in Dourou – which itself reflects the topography, climate, and fauna of the area – determines the scope of the possible referents of CACs. The type of economy, subsistence, and culture conditions the manners in which humans may interact with the animals. This in turn determines the number of CACs associated with each species (animals playing more relevant roles have a larger number of CACs associated with them) and the semantic types of actions communicated by CACs (the importance of animals for agriculture and transportation motivates the robustness of the subclass of directionals). Additionally, socio-cultural norms operating in Dourou explain the gendered use of CACs associated with hunting and whistling and certain other restrictions in the performance of CACs (e.g., prohibition of pronouncing them in some places or at some times). Given this profound dependency of CACs on their natural and socio-cultural environment, we are convinced that ecolinguistic evidence should be afforded a more prominent status in the studies of CACs.

Overall, CACs stand out ecolinguistically, semantically, phonetically, morphologically, and syntactically in TTKD if they are compared to other lexical classes, especially those belonging to the so-called sentence-grammar.¹⁰¹ This distinctiveness of CACs from the verbal, nominal adverbial/adjectival, and pronominal stock of the language is evident given the considerable extent of extra-systematicity of CACs that we noted throughout this article.

However, CACs also seem to distinguish themselves from other interactive categories in TTKD that can be extra-systematic from the sentence-grammar's perspective, i.e., interjections, onomatopoeias, and conatives addressed to human referents. According to the available evidence,¹⁰² TTKD CACs differ from these three lexical classes by their meaning and function-related properties. As is true

¹⁰¹ Cf. HEINE, B. *The grammar of Interactives*.

¹⁰² ANDRASON, A., PHIRI, A. Talking to animals in a moribund language: Pragmatics, phonetics, and morphology of conative animal calls in Tjwao. In *Linguistic Variation*, 2023, Vol. 23(2), pp. 318–342.

crosslinguistically,¹⁰³ canonical interjections in TTKD express emotions, are reflexive, non-referential, and semi-automatic and center the speaker's condition, and onomatopoeias imitate sounds present in the external world, are referential and center the object of conceptualization. In contrast, as we have demonstrated in this article, canonical TTKD CACs are directive, deliberate, need not be imitative, and center the referent spoken to. Differences between CACs on the one hand, interjections and onomatopoeias, on the other, also concern formal properties. For example, contrary to interjections which, in TTKD, mainly exploit punctual (non-replicated) patterns and largely draw on vowels and approximants (see, **a'a** [aʔa], **aaa** [a::], and **heee** [he::] which express regret, negative surprise, and admiration, respectively), CACs make extensive use of replications and consonantal material. Contrary to onomatopoeias, which overwhelmingly exhibit reduplicated structures and, at least according to the data available currently, contain only a few extra-systematic sounds, CACs allow for punctual structures (dispersals and directionals) and replications that extend far beyond reduplication (see several summonses that form series of 3, 4 or more segments), and contain a large number of extra-systematic sounds, including clicks (which are unattested in TTKD onomatopoeias). CACs also differ from interjections and onomatopoeias with regard to syntax and argument structure. Canonical interjections in TTKD have an inherent 1st person argument, project experiencer and cause roles to arguments, and do not constitute canonical clausal nuclei or heads; onomatopoeias can be clausal nuclei/heads, have an inherent subject (1st, 2nd, and especially 3rd person) argument, and project all types of roles to their arguments and adjuncts (compare with the similar properties exhibited by interjections and onomatopoeias across languages).¹⁰⁴ In contrast, CACs can be

¹⁰³ ANDRASON, A., DLALI, M. The (crucial yet neglected) category of interjections in Xhosa. In *STUF – Language Typology and Universals*, 2020, Vol. 73(2), pp. 159–217; HEINE, B. *The grammar of Interactives*; ANDRASON, A., HARVEY, A., GRISCOM, R. The form of emotions: The phonetics and morphology of interjections in Hadza. In *Poznań Studies in Contemporary Linguistics*, 2023, Vol. 59, pp. 1–26; ANDRASON, A. Argument structure of emotive interjections: Evidence from Polish. In *Lingua*, 2022, Vol. 277(103400), pp. 1–30; ANDRASON, A., PHIRI, A., FEHN, A-M. Onomatopoeias in Tjwao. In *Canadian Journal of Linguistics*, 2023, Vol. 68(3), 1–37; ANDRASON, A., BENSON, P. Onomatopoeias in closely related languages: The case of Mingang Doso and Dza. In *SKASE Journal of Theoretical Linguistics*, 2023, Vol. 20(2), pp.2–26.

¹⁰⁴ ANDRASON, A. Ideophones as linguistic “rebels” – The extra-systematicity of ideophones in Xhosa. Part 2. In *Asian and African Studies*, 2021, Vol. 30(1), pp. 1–30; ANDRASON, A. Argument structure of emotive interjections: Evidence from Polish. In *Lingua*, 2022, Vol. 277(103400), pp. 1–30; ANDRASON, A., HEINE, B. On the grammaticalization of ideophones. In HANCIL, S., TANTUCCI, V. (eds.). *Different Slants on Grammaticalization*, pp. 237–262; HEINE, B. *The grammar of Interactives*.

nuclei/heads of their clauses, have an inherent 2nd person argument entertaining the role of agent, and project goal (also source) and addressee roles to further clausal or sentential dependent elements. Lastly, TTKD CACs differ from conatives addressed to human interlocutors. While human conatives are mostly punctual, make use of vowels, approximants, and systematic sounds, CACs extensively exploit non-IPA sounds (e.g., kisses and whistles) and, as mentioned above, extra-systematic IPA phones such as clicks. The use of all such extra-systematic sound is highly offensive with human referents.

The analysis of CACs in TTKD may be complemented with an important observation. During our fieldwork activities, it became clear to us that CACs constituted the part of TTKD vocabulary – and thus the linguistic heritage of the speakers – that is particularly vulnerable, being exposed to a more rampant attrition than is the case of any other element of the language. Only those who lived in the community and maintained the traditional style of living knew all the CACs. In contrast, to those who had relocated to other parts of the country and lived in conditions that diverged from what typified the Dogon area, CACs were known very fragmentarily. This stems from the close relationship between CACs and the natural and socio-cultural ecosystem explained in Section 3.1. Accordingly, this tight language-ecosystem connection not only distinguishes CACs from the other lexical classes and renders them one of the most fascinating phenomena in a language – it is also the source of CACs' extreme vulnerability. Indeed, on the one hand, the seemingly unstoppable climate change has profoundly altered the original ecosystem of the Dogon area, both fauna and flora. One of the consequences of this have been droughts and desertification, and the resultant disappearance of several species during the second half of the 20th c.¹⁰⁵ On the other hand, the Indigenous economy has been undergoing profound transformations due to the exodus of Dogon people to urban hubs or their resettlement in other more arable lands, and the inverse penetration of foreign elements into the Dogon area. These include aggressive tourism, new types of housing and clothing, the intrusion of global religions, and general globalization

¹⁰⁵ This radical susceptibility to fluctuating climate has been characteristic of the Dogon area for the last three millennia: Comprised between Sahel and a savannah, it has been greatly affected by even the slightest climate alteration such that all social and cultural changes can be correlated with climate changes (MAYOR, A. et al. Population dynamics and paleoclimate over the past 3000 years in the Dogon country, Mali. In *Journal of Anthropological Archaeology*, 2005, Vol. 24. Pp. 25–61; RAK, K., MYNARSKI, M. Natural and cultural sanctuary of the Bandiagara escarpment. In *Cracow Landscape Monograph*, 2016, Vol. 2, pp. (see p. 161)).

and European and North American influence.¹⁰⁶ Both clusters of phenomena put CACs at a high risk (see the current absence of CACs dedicated to the animals that used to live in the area some 50 years ago explained in Section 3.1). The cultural heritage of the Dogon, which is exceptional on a world scale, faces many challenges.¹⁰⁷ In our view, the category of CAC is one of the central and, at the same time, most endangered parts of this heritage. We hope that our article has succeeded in documenting at least some portion of this highly vulnerable type of lexicon and grammar before it is too late.

5. Conclusion

In this article, we offered the first systematic account of the grammar of conative animal calls in the Dogon language family. The analysis of Togo-Teṇu Kan of Dourou revealed a considerable compliance of CACs with the crosslinguistic prototype and a palpable extra-systematicity of these types of constructions if compared to the lexical classes belonging to the sentence grammar of the TTKD language. Although our results largely corroborate the validity of the prototype of CACs posited in scholarship, they also point to a few, more or less important, refinements. We additionally propose that the so-called ‘ecolinguistic’ evidence should be incorporated into the study of CACs and treated as equally relevant as semantic, phonetic, morphological, and syntactic data.

When finishing this article and reflecting on the journey our research has turned out to be, something often overlooked in linguistic scholarship became apparent to us. The work on CACs and its successful completion were possible and our collaboration was (and still is) sustainable because we had persistently refused to work within the extractivist, epicolonial, white-savior model of knowledge production. We wanted to disrupt the way of doing linguistics in which the global South is reduced to providing data while the global North is the sole source of theory making. We both wanted to be involved in data collection and theory development. We both wanted to learn from each other and share with

¹⁰⁶ HAARDT, C. Los dogon, el pueblo a los acantilados [The Dogon, Mali's people of the cliffs]. In *El Correo de la UNESCO*, 1991, pp. 42–45 (see p. 45); RAK, K., MYNARSKI, M. Natural and cultural sanctuary of the Bandiagara escarpment. In *Cracow Landscape Monograph*, 2016, Vol. 2, pp. (see p. 162); UNESCO. n.d. [online] [cit. 15 May 2023]. Available from <https://whc.unesco.org/en/list/516/>.

¹⁰⁷ This uniqueness of the Dogon area (natural environment and culture) was recognized by UNESCO by declaring it a natural and cultural sanctuary of outstanding universal value and including it in the World Heritage List in 1989 (ICOMOS. *World heritage list No 516* UNESCO. n.d. [online] [cit. 15 May 2023]. Available from <https://whc.unesco.org/en/list/516/>.

the other partner our knowledge(s), skills, and experiences. This commitment to undoing epistemic epicoloniality has resulted not only in the present article but, even more importantly, in a most beautiful friendship.

Abbreviations

C – consonant; CAC – conative animal call; IMP – imperative; INTJ – interjection; PN – proper noun; TAM – tense-aspect-mood; TTKD – Togo-Tegu Kan of Dourou; V – vowel.

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