Research Article

Alexander Andrason and Andrew Harvey*

Instability of interactives: The case of interjections in Gorwaa

Abstract: This article studies the morpho-phonetic instability of interactives through the example of Gorwaa interjections. The analysis of 91 constructions demonstrates that, in Gorwaa, interjections are highly unstable: the number of idiolectal interjections is much larger than that of shared interjections, and the interjections of both sets form clusters – spaces composed of constructions connected through the family resemblance of a formal and functional type. The formal modifications are achieved through prolongation, replication, alternation (of phones/features), and concatenation, and are related to changes in meaning and the polysemy inherent to interjections. Overall, the interjective category is modeled as a dynamic/fuzzy network of related (formally/functionally) constructions. The grammatical profiles of shared and idiolectal interjections are identical and corroborate the validity of the prototype of interjections. The refinements proposed include a preference for [j] over [w], a tendency toward (extra-)high tones and decreasing tonal patterns, the use of gutturals and clicks as the most common extra-systematic sounds and that of clicks as genuine consonants in non-click languages, the iconic foundation of some interjections and their relationship to babytalk, as well as the close relationship of interjections with the |A| place of articulation.

Keywords: interactives, interjections, instability/flexibility/mutability, phonetics, morphology, Gorwaa, Cushitic

1 Introduction

The present study is dedicated to the issue of the formal (phonetic and morphological) instability of interactives. Interactives are constructions that "provide insights into how speakers conceive themselves in the world of social communication" (Heine 2023, 7). They are operationally defined as "invariable deictic form[s] that [are] set off from the surrounding text semantically, syntactically and prosodically and can neither be negated nor questioned" (ibid.). In doing so, they differ (to a greater or lesser extent) from the lexical classes of so-called sentence grammar, e.g., verbs, nouns, adjectives, pronouns, adverbs, and numerals. The class of interactives includes attention signals, directives, discourse markers, evaluatives, ideophones/onomatopoeias, interjections, response elicitors, response signals, social formulae, vocatives, and conative animal calls (ibid. 10). While claimed in several studies (e.g., Heine 2023; see Section 2 for details), the formal instability of lexical classes of interactive grammar and the extent thereof have not been demonstrated empirically in a systematic matter. To address this gap in linguistic scholarship, we will study one category of interactives, i.e., interjections, in an under-documented and under-researched Cushitic language, Gorwaa (ISO 639-3 [gow]; glottocode [goro1270]), and answer the following research question: Are interjections in Gorwaa formally unstable, and should this be the case, and what are the characteristics of this instability? To confront this question, we will

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* Corresponding author: Andrew Harvey, Faculty of Languages and Literatures, University of Bayreuth, Bayreuth, Germany, e-mail: andrew.harvey@uni-bayreuth.de

Alexander Andrason: Centre for African Studies, University of Cape Town, Cape Town, South Africa; Living Tongues Institute for Endangered Languages, Salem, USA, e-mail: aleksand@hi.is

determine the respective contributions of shared and idiolectal interjective tokens to the total pool of interjections and study the properties of these two sub-classes. Our article has overall two objectives: contribution to the linguistic theory of interactives and Gorwaa-language documentation.[1]

The Gorwaa language is spoken in north-central Tanzania, mostly in the Babati district. It is used by some 130,000 people, most of whom also speak Swahili, the national language of Tanzania and a major lingua franca of East Africa. Some Gorwaa speakers are conversant in Alagwa, Datooga, Iraqw, Mbugwe, and Rangi. Gorwaa is virtually never used in writing and is losing various domains of use to the national lingua franca, Swahili. As such, Gorwaa is regarded as endangered (Harvey 2019, 127). The language's vitality is placed on levels 6b and 7 of the Expanded Graded Intergenerational Disruption Scale (Lewis and Simons 2010) and thus viewed as either threatened or shifting, respectively (Harvey 2019, 141).

Gorwaa belongs to the Southern branch of the Cushitic family – itself a member of the larger Afroasiatic phylum (Kießling and Mous 2003, Harvey 2019). Within South Cushitic, Gorwaa, together with Iraqw, forms the Iraqwoid cluster of the North-Western branch of the West-Rift linguistic subgroup (Kießling and Mous 2003, Harvey 2019, 135). This close phylogenetic relationship between Gorwaa and Iraqw, as well as the sustained contact between the two languages, means that both varieties are mutually intelligible (Harvey 2019, 135). Further, as Gorwaaland is located in the center of the East African Rift (sometimes proposed as a *Sprachbund*) where four African language phyla meet (i.e., Afroasiatic, Khoisan, Niger-Congo, and Nilo-Saharan), Gorwaa has also been subject to areal influences and contact with Bantu (Rangi and Mbugwe) and Nilotic languages (Datooga varieties and, more recently and to a lesser extent, Maasai)[2], as well as other members of the Cushitic family (e.g., Alagwa; Harvey 2019, 137–8).

To analyze the properties of Gorwaa interjections necessary for answering our research question, we will make use of a prototype approach to interjections (Nübling 2004, Andrason and Dlali 2020, Andrason et al. 2023b, Heine 2023) and linguistic categorization (Evans and Green 2006, Janda 2015, Taylor 2003; see also Rosch 1973, 1975, 1977, 1978), as well as a 'non-formal' (or functional) approach to grammatical description commonly used in linguistic typology and language documentation (Croft 1995, 2003, Dryer 2006, Dixon 2010, cf. Carnie and Harley 2003).

The article is structured as follows: in Section 2, we state the problem that justifies our study; in Section 3, we explain the theoretical background of the research: its conceptual framework and data collection methods; in Section 4, we introduce original evidence related to interjections, preceded by a brief description of the Gorwaa language structure; in Section 5, we respond to the research questions and explain the further contribution of our research to linguistic theory; in Section 6, we conclude our article.

2 Problem statement

According to the definition provided in the previous section, interactives are 'invariable' in the sense that they do not alter their form depending on their position in a sentence and are thus indeclinable and/or uninflected (Heine 2023, 13). Prototypically, interactives do not contain affixes or morphemes other than the root itself. They do not make use of inflections or derivations and, as a result, do not exhibit morphological flectional variants. They are lexicalized ready-to-go information packages indivisible into more elementary meaning-bearing units. In other words, they are sings that have "no internal morphology" (Heine 2023, 15) but should be viewed as "holistic" (ibid.) and "unparsable" (ibid. 170).

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1 The scholarly literature on the Gorwaa language is indeed extremely scarce. The earliest relevant work is Heepe's (1930) edition (transcription and translation) of a Gorwaa folk tale. Gorwaa has also been mentioned in works dedicated to the (South) Cushitic language family (Kießling 1999, Kießling and Mous 2003) and African languages more generally (Kießling et al. 2008). More recently, Maghway (2008, 2009) published Gorwaa lexica and Harvey (2018, 2019) offered a general snapshot of the language and a detailed analysis of its nominal system.
2 Which variety (or varieties) of Maasai played a role in this contact (Arusa, Kisongo, and/or Parakuyo, or historical antecedents thereof) remains a topic for further investigation.

While interactives are invariable in the sense explained above, they are claimed to be unstable, flexible, and mutable (Heine 2023). As elegantly put by Diffloth (1976, 261), interactives "lack … lexical discreteness."[3] This instability is undeniably much more pronounced in the interactive part of grammar than what characterizes the lexical classes of sentence grammar, especially nouns, verbs, adjectives, and pronouns, which although declinable and/or inflectable, are usually not formally unstable. Indeed, an interactive may exhibit "a set of functionally largely equivalent variants" (Heine 2023, 13) as illustrated by the interjection(s) *Jesus Christ*, *Jesus*, *Christ*, *Gees*, *Gee* in English and *kurwa*, *kuuur*, *kurrr*, *kurw*, *kurna*, *kuźwa*, *kurka*, *kurczę*, *kurz*, and *rukwa* in Polish.[4] This is not the case for sentence-grammar lexical classes. For instance, the verbal lexeme *comprehend* cannot appear as **compre, **prehend, **com, **prr, or similar.[5]

The instability explained above has been reported in all types of interactive lexical classes (see Heine 2023 as well as the several references below). Although its extent may be different in different categories of interactives, it seems to typify interactive grammar in its entirety. For instance, ideophones and their onomatopoeic sub-class admit a large spectrum of phonetic and morphological variants (Körtvélyessy 2024, 1095), which renders their form 'unstable or flexible' (Andrason et al. 2023a, 376, see also Diffloth 1976). In Tjwao (Khoe) and Xhosa (Bantu), several ideophones/onomatopoeias exhibit both punctual (i.e., non-replicated) and replicated structures, with replication being exact or partial and ranging from two to longer series. The consonantal and vocalic material of ideophones can itself be short or prolonged, i.e., extended to long or exaggerated degrees of length (Andrason 2020a, 157, Andrason et al. 2023a, 374, see also Dingemanse 2015, 958 for Siwu and Heine 2023 more generally). Ideophones may also exhibit variants that alternate and mutate their formative vowels and consonants (Körtvélyessy 2024, 1096). Additionally, like in Dza and Mingang Doso (Adamawa), speakers often have access to variants that imitate the real-world sounds more closely and are thus more extra-systematic from a phonetic perspective (Andrason and Benson 2023, 11, 2024, 119–20). Similar instability concerns conative animal calls (so-called CACs). In Xhosa (Bantu) and Asante, Bono, and Fante (Akan; Kwa), CACs "attest to the remarkable variability and instability of their forms" (Andrason 2022, 40). A CAC can be punctual, lengthened (extended to two, three, or more morae), and realized in sequences, whether of two, three, four, five, or any other (Andrason 2022, Duah et al. 2023). In some CACs attested in the Akan dialects, the consonant or the vowel can be mutated, e.g., sibilants can be affricated, and the click in a single lexeme can be realized as palatal, alveolar (lateral), and dental. Such phonetic and morpho-syntactic variations are not only idiolectal but often shared by various speakers.

Interjections – the protagonists of our research – also seem to be phonetically and morphologically unstable (Nübling 2001, 24, 2004, 26, Stange and Nübling 2014, Stange 2016, 34, 82). In Xhosa (Bantu) and Arusa Maasai (Nilotic), interjections easily tolerate the lengthening of one of their vowels and consonants (even to highly exaggerated degrees of length) and generally allow for short, prolonged, and replicated formal alternatives (Andrason and Dlali 2020, 193, 203, Andrason and Karani 2023, 92, 94, 107, 109). Very often, e.g., in German (Indo-European), interjections exhibit variants that differ in intonation – although this tends to be correlated with differences in function (Heine 2023, 170). In Korean, interjections exhibit "sound symbolic stem alternation" (ibid.), while in Xhosa (Bantu) and Polish (Indo-European), laughter interjections, which are interjectionalized imitations of laughter (Levisen 2019), display a large number of optional structures due to their ability to form sequences (from reduplicated to octuplicated and longer), lengthening of vowels, and the presence of so-called satellites (Andrason 2021a, 60). Similar variation types are also present in Australian languages (see Ponsonnet 2023). This phonetic and morphological instability leads to the very common 'graphic mutability' of interjections (cf. Stange 2016, 82) attested even in classical ancient languages such as Biblical

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3 Diffloth's (1976) remark concerned only one class of interactives, i.e., ideophones.

4 Of course, this type of instability which constitutes "an inherent part of [the] structure" of an interactive lexeme (Heine 2023, 51) essentially differs from "canonical morphological variation" attested in sentence grammar which is due to the morphology of inflection or derivation (ibid. 169–70).

5 In some languages, however, certain sentence-grammar categories may tolerate abbreviated variants. For instance, French exhibits a strong tendency to shorten long nouns, e.g. *cinématographe* > *cinéma* > *ciné*. In interactives, this type of "shortening" is only one of the many strategies (see Sections 4 and 5).

Hebrew (Andrason et al. 2020b), Biblical Aramaic (Andrason and Hutchison 2020), and Ugaritic (Andrason 2020b).

While formal instability of interactives in general and interjections specifically seems beyond doubt, the (qualitative and quantitative) extent of this instability, as well as its characteristics and the mechanisms underlying it, has been studied neither in a detailed nor in a systematized manner.[6] Our article responds to the knowledge lacuna by dealing with the instability issue specifically and systematically.

3 Theoretical background

Following our previous work on interjections in the languages of the East African Rift *Sprachbund* – Hadza (Andrason et al. 2023b) and Arusa Maasai (Andrason and Karani 2023) – we operationally define this lexical class by making simultaneous use of semantic and syntactic parameters. An interjection is "an (at least relatively) *entrenched* construction that expresses *feelings* [i.e., *emotions*...] and [physical] *sensations* [...] experienced by the speaker and can be used *holophrastically* as a non-elliptical utterance" (Andrason et al. 2023b: 292 drawing on Ameka (1992, 2006), Nübling (2001, 2004), Stange and Nübling (2014), Andrason and Karani (2023), and Heine (2023)). While simplified (see below), this definition has turned out to be useful when collecting interjective tokens (both for the purpose of the present research and in research activities dedicated to other languages) and allows us to avoid circularity: we analyze the phonetics and morphology of constructions that have been collected given their semantic and syntactic properties (cf. Andrason et al. 2023b, 293, Andrason and Karani 2023, 81).

As mentioned above, the operationalized definition of an interjection is (largely) simplified. More appropriately, the category of interjections – as is true of all linguistic categories (Evans and Green 2006, Janda 2015) – should be viewed as a radial network of internally diverse exemplars that are organized around an interjective prototype. The prototype itself is defined cumulatively and, in addition to the features mentioned in the operationalized definition, is characterized by a complex set of functional (semantic and pragmatic) and formal (phonetic, morphological, and syntactic) properties. Below, we mention properties related to phonetics and morphology since only these are relevant to our study. Phonetically, a prototypical interjection is mono-syllabic, makes use of vocalic material (this also includes guttural and palatal approximants), allows for extra-systematic sounds and sound combinations (i.e., those that are foreign to or rare in a given language or that expand beyond the International Phonetic Alphabet), and is accompanied by marked phonation and modulations. Morphologically, a prototypical interjection is mono-morphemic with no inflections, derivations, or elements added via compounding; it is overall opaque lacking any specific morphological traits that could identify it as a member of the interjective category (see Andrason et al. (2023b), drawing on Ameka (1992, 2006), Ameka and Wilkins (2006), Nübling (2001, 2004), Stange and Nübling (2014), Stange (2016), Andrason and Dlali (2020), Andrason et al. (2020b), and Andrason and Karani (2023)).

The prototype of an interjection determines the conceptual center of the interjective category. However, it does not define it, nor does it exemplify all interjections attested across languages. An interjective category – in any given language or if approached from a crosslinguistic perspective – is much richer than the interjective prototype and consists of exemplars (or real-world instantiations) that may comply with the prototype to radically varying degrees. Some exemplars are canonical (these constructions comply with the prototype fully), some are semi-canonical (these constructions comply with the prototype partially), and some are non-canonical (these constructions comply with a few prototypical features) (cf. Evans and Green 2006 and Janda 2015). This means that prototypical features, including phonetic and morphological ones, can be violated. Such violations are particularly frequent in secondary interjections, although they are not foreign to primary interjections either. Secondary interjections are constructions that are regularly used as interjections

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6 The studies in which the issue of instabilities of interactives has received the most advanced treatment are Stange's (2016) analysis of English interjections and Körtvélyessy's (2024) crosslinguistic review of onomatopoeias.

but draw on non-interjective sources (i.e., lexical classes such as verbs, nouns, and pronouns, and small phrases or clauses composed of them) and this diachronic and conceptual link is still recoverable. In contrast, primary interjections are constructions that are used (almost) exclusively as interjections and have either been coined as interjections or their interjectionalization (or conversion into interjections) is such that the relation with their non-interjective sources is no longer patent (see Ameka 1992, 2006, Nübling 2001, Andrason and Dlali 2020). Importantly, all members of the interjective category are connected via family resemblance (cf. Rosch 1973, 1975, 1977, 1978, Taylor 2003). Each member of the category shares some properties with another member, but no property need to be shared by all members. The coherence of the category resides, thus, not in the presence of an invariant property permeating all members – some type of common denominator – but in a sequence of overlapping similarities.

When describing the properties of interjections in Gorwaa we will avoid formalism. This again complies with our previous research on interjections and the approach to this lexical class embraced by scholars whose works constitute the foundation of our own theoretical approach (see Ameka 1992, Nübling 2001, 2004, Ameka and Wilkins 2006, Stange 2016, Stange and Nübling 2014, Heine 2023). To be exact, we couch our grammatical description within non-formal, but more functionally oriented, theories common in linguistic typology and language documentation (Croft 1995, 2003, Dryer 2006, Dixon 2010). The term construction itself, used throughout our article, is borrowed from Construction Grammar and refers to the form-meaning pairing of any complexity degree, whether sub-lexical (i.e., morpho-phonetic and morphological), lexical, phrasal, or clausal as well as of any entrenchment level (cf. Goldberg 2003, Fried and Östman 2004, Hoffmann and Trousdale 2013). Overall, and in agreement with the above-mentioned approaches, we are interested in dynamics (diachrony) instead of pure stasis (synchrony), messiness and variation instead of simplicity and neatness, and observable form-meaning combinations instead of 'deep' structures and invisible elements, transformations, and movements.

The data used in this article were collected during fieldwork activities conducted in Tanzania in 2023 that involved five speakers, all of whom are listed in Table 1.[7]

The data were collected via one-on-one elicitation. Andrew Harvey would describe a situation from a list to the speaker (1.a), and the speaker would then be asked to produce an appropriate sound (1.b). The interviewer used Swahili (1.a) while the interviewee responded in Gorwaa (1.b). In most cases, an interjection was produced (as in 1.b [ʔíjaʔ]), though not always. For example, when prompted by a situation in which someone expects to be given meat but is given thin gruel instead, one speaker produced the interjection [h̃íi:], whereas another speaker said that no interjection was necessary and that a facial expression displaying displeasure sufficed.

(1) a. Andrew Harvey [Swahili]
         Ukikanyaga   mwiba, utatumia   sauti   gani?
         SA2SG.COND.step   thorn   SA2SG.FUT.use   sound   which
         'If you step on a thorn, what sound will you use?'
     b. Bu'ú' Saqwaré [Gorwaa]
         ***Íyá**   ta   muútl*
         INTJ   AUX.IMPRS   stab.PST
         '**[ʔíjaʔ]**, I've been stabbed!'

All elicitation sessions were recorded using a Zoom H5 audio recording device, and the resultant.wav files were analyzed, with interjections transcribed in a working Gorwaa orthography in the ELAN software

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Table 1: Consultants for the study and biographical information[a]

Name	Gender	Year of birth	Place of birth	Place(s) of former residence	Place of current residence	Place of Interview
Bu'ú' Saqwaré [BS]	M	1954	Endarqadat	Endamaqay (Duru)	Yerotoni	Yerotoni
Maria Hheke [MH]	F	1960	Endagwe	Endagwe	Yerotoni	Yerotoni
Darbo Hheke [DH]	F	1955	Endagwe	Endagwe	Yerotoni	Yerotoni
Clara Tlaqasi [CT]	F	1969	Seendó	Endagile	Endagile	Mamiire
Hezekiah Kodi [HK]	M	1949	Endagwe	Endagwe, Riroda, Bonga	Bonga	Bonga

[a]It should be noted that BS is MH's husband, and MH and DH are sisters: all three live in the same village hamlet and are each other's primary social contacts.

(Sloetjes and Wittenburg 2008). When all outputs were transcribed, they were then tabulated in a spreadsheet, noting from which recording they came. Every interjection was then transcribed in the IPA and categorized according to the emotion(s) and/or sensation(s) with which it occurred. In the remaining parts of our article, we will use the IPA transcriptions.

4 Evidence

4.1 Some basic information about Gorwaa language structure

Gorwaa is a (mostly) synthetic language. Grammatical gender (labelled (M)asculine, (F)eminine, and (N)euter) is merged with number in a large series of nominal suffixes, triggering agreement on most nominal modifiers, as well as verbs. Head-marking is predominant, and a class of verbal extensions (sometimes lexicalized) is exploited to modify the semantics of the verb and occasionally its valency. Except for the imperative, every finite clause in Gorwaa contains a preverbal clitic cluster, which encodes core arguments, mood, voice, aspect, as well as other concepts such as reason, ablative or lative, and instrumental (Harvey et al. 2023, 188–91). Gorwaa is primarily an SOV language, though other orderings are also possible (Harvey 2018, 451–4).

4.2 Interjections

4.2.1 Shared interjections

According to our data (see Appendix), out of 91 interjections collected, 25 are shared by two or more speakers. The form and meaning of these interjections are identical in the language of more than a single person, which suggests at least some degree of the 'panlectal' status of these tokens, and their cross-population spread and entrenchment. Table 2 presents all such shared interjections in alphabetical order, specifies their meanings in terms of emotions and sensations, and provides the reference to the particular speakers who used the respective tokens.

While some shared interjections are lexically (both formally and functionally) distinct from all the other panlectal interjective constructions (see, for instance, [ʔáhʔ], [hé], [híi:], [ilaʔ#harise?], [ʔíí:], [ʔúúu:], [ʕaħáʔ], and [|#|]), many form form-function clusters. The lexemes of each of these clusters are connected through family resemblance (cf. Rosch 1973, 1975, 1977, 1978, Taylor 2003): each token shares some formal and/or functional properties with another member of the cluster or some of them. However, no formal and/or functional feature need to be identical for all members of the cluster, which means, in turn, that no feature is essential to the cluster by constituting its common denominator. Therefore, we treat the members of each cluster as independent lexical entries rather than the mere (phonetic, morphological, or semantic) variants of a single lexeme (see Section 5 for further discussion).

Five main clusters can be identified in the class of shared interjections. The ʔah-cluster includes [ʔăh], [ʔáhʔ], [ʔăhʔáhʔahʔàhʔ], and [ʔăhʔáhʔahʔàhʔàhʔ]. The distinctive formal feature is the element [ʔah]. The forms of the cluster's members exploit this element in different tonal variants, replicative patterns, and consonantal alternations (e.g., [h] versus [hʔ] in the final coda). The meaning of the cluster spans mostly negative emotions and sensations (e.g., (unpleasant) surprise, disappointment, irritation, disbelief, fear, and bad taste) although one of the lexemes (i.e., [ʔáhʔ]) also expresses happiness and excitement. Figure 1 below aims to capture the semantic and formal family resemblance underlying the ʔah-cluster. It schematizes the similarities (conjunction) and dissimilarities (disjunction) of the semantic-potential sets of the various members and their formal connections. The ʔaħ-cluster includes [ʔáħ], [ʔaħá], and [ʔáħaʔ]. The distinctive formal feature of this cluster is [ʔaħ] found in two tonal variants (high and middle) and accompanied by the extensions [á] and [aʔ] – perhaps a type of partial/imprecise reduplication. The meaning of the ʔaħ-cluster pertains

Table 2: Shared interjections in Gorwaa

Token	Meaning		Speakers
	Feeling	**Sensation**	
[ʔǎh]	Surprise, Disappointment, Irritation	Bad taste	[BS] [MH] [DH]
[ʔáhʔ]	Excitement, Happiness, Surprise, Irritation, Fear		[BS] [MH]
[ʔǎhʔáhʔah ʔàhʔ]		Bad taste	[BS] [HK]
[ʔǎhʔáhʔah ʔàhʔǎhʔ]	(Unpleasant) Surprise, Disbelief, Fear		[CT] [HK]
[ʔáh]	Distaste, Irritation		[BS] [CT]
[ʔahá]	Distaste, Dismay		[BS] [HK]
[ʔáhaʔ]	Disgust, Indignation, Irritation	Unpleasant sensation	[CT] [HK]
[hé]	Surprise	Pain	[MH] [HK]
[híi:]	Disgust, Pity, Relief, Sadness		[MH] [HK]
[ilaʔ#hariseʔ]	Fear		[CT] [HK]
[ʔíí:]		Good or bad taste	[BS] [DH]
[ʔíjaʔ]		Pain	[BS] [CT] [HK]
[ʔíjájjaʔ]		Pain, malaise	[BS] [DH] [CT] [HK]
[ʔóoò:]	Disappointment, Sadness, Fear		[MH] [CT]
[ʔóóo:]	Happiness	Pain	[MH] [DH] [CT]
[ʔojě:]	Relief, Fear, Disgust, Surprise, Shock	Pain (strong)	[BS] [MH] [DH] [CT] [HK]
[ʔóje:]	Disappointment	Pain	[MH] [DH]
[tát]	Relief, Surprise, Fear	Pain, malaise, unpleasant sensation, bad taste, exhaustion	[BS] [MH] [HK]
[tǎt]	Surprise, Fear	Pain, strong sensation (pleasant or unpleasant), spiciness, bad smell	[BS] [CT]
[tǎ̱tá̱ṯa̱tà̱]		Cold, bitter taste	[CT] [HK]
[tǎttáttattàt]		Pain (strong, long-lasting), bitter, sour, or spicy taste, unpleasant sensation	[BS] [HK]
[tǎttáttattàttàttàt]	Excitement	Bad smell	[BS] [MH]
[ʔǔúu:]	Fear, Sadness	Pain, good or bad smell	[DH] [HK]
[ʕaħáʔ]	Upset		[DH] [HK]
[l#l]		Pleasant or unpleasant taste	[MH] [HK]

to distaste, disgust, irritation, indignation, dismay, and, in the case of [ʔáhaʔ], any unpleasant sensation. [ʔíjaʔ] and [ʔíjájjaʔ] constitute the *ʔija*-cluster, with the latter lexeme appearing as a replication of the former although in different tonal variants. Both lexemes refer to pain. The *ʔoje*-cluster contains [ʔojě:] and [ʔóje:] which only differ in tone. Their meaning coincides for sensations (i.e., pain) but differs with regard to emotions (disappointment, sadness, and fear versus happiness). Finally, the *tat*-cluster contains [tát], [tǎt], [tǎ̱tá̱ṯa̱tà̱], [tǎttáttattàt], and [tǎttáttattàttàttàt]. The distinctive feature of this cluster in the element [tat]. This element appears in a range of variants that exploit different tonal patterns, phonation/modulation-related features, and replications. The meaning of the members of this cluster ranges from feelings (relief, surprise, and fear) to sensations (pain, malaise, bad, bitter, sour, or spicy taste, exhaustion, cold, and any unpleasant or strong sensation); as well from negative emotions (see above) to positive (excitement).

The vast majority of shared interjections are monosyllabic (see [ʔǎh], [ʔáhʔ], [ʔáh], [hé], [híi:], [ʔíí:], [ʔóoò:], [ʔóóo:], [tát], [tǎt], and [ʔǔúu:]) or constitute series built around monosyllabic segments (see [ʔǎhʔáhʔah ʔàhʔ], [ʔǎhʔáhʔah ʔàhʔǎhʔ], [tǎ̱tá̱ṯa̱tà̱], [tǎttáttattàt], and [tǎttáttattàttàttàt]). A few tokens consist of two syllables (e.g., [ʔíjaʔ], [ʕaħáʔ], [ʔahá], and [ʔáhaʔ]) or are a series of identical disyllabic segments ([ʔíjájjaʔ]). The only interjection that exhibits a larger number of syllables is the secondary lexeme [ilaʔ#hariseʔ] which consists of five syllables (see further below).

Shared interjections make abundant use of vocalic material: genuine vowels and/or elements that can be viewed as 'quasi-vocalic'. This latter class includes approximants, i.e., [j], [h], and [ɦ], as well as phones strongly related to approximants and vowels, i.e., [ħ], [ʕ], and [ʔ] (regarding the affinity of these
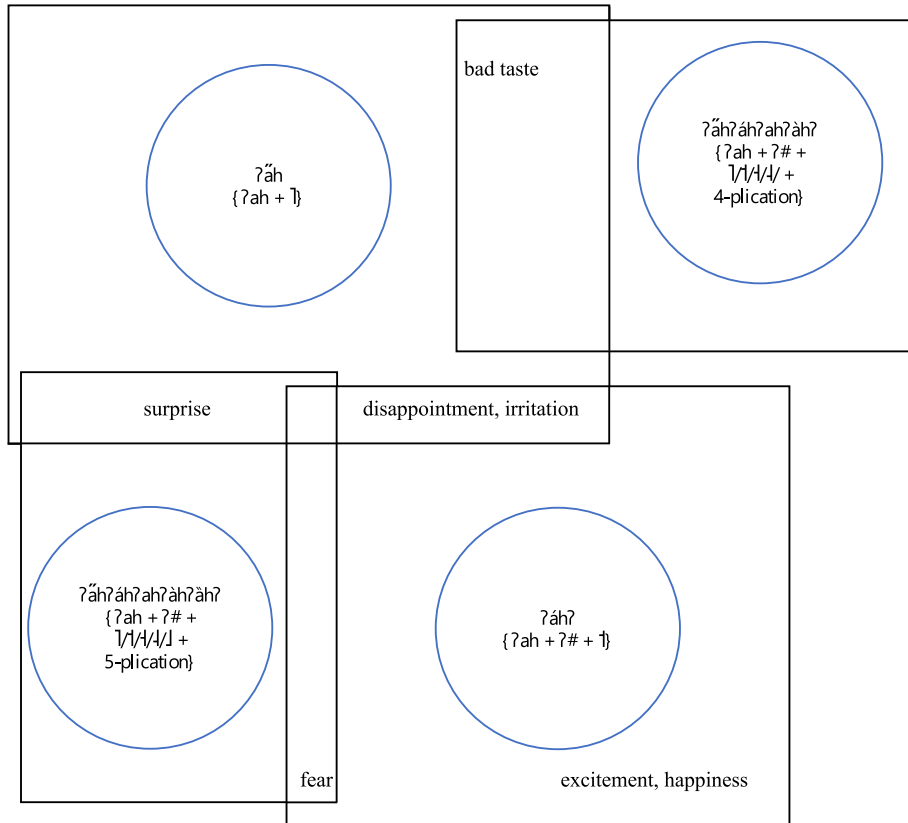
Figure 1: Semantic family resemblance of the members of a cluster (the *ʔah*-cluster).

sounds to approximants and vowels, consult Hall (2007), Backley (2011), and Andrason et al. (2023b); see also Section 5).

To begin with, there are 19 shared interjective lexemes that are entirely built around such vocalic or quasi-vocalic phones. In contrast, only six shared interjections draw on genuine consonants; five of them are primary interjections: [tát], [tǎt], [tǎt̪át̪àt̪à], [t̪ǎttáttattàt], and [t̪ǎttáttattàttàttàt] belonging to the *tat*-cluster and [|#|]. The remaining one is the secondary interjection [ilaʔ#hariseʔ]. In the further discussion in this paragraph, we disregard this secondary lexeme since secondary interjections tend to behave in a radically different manner from primary interjections as far as their phonetics are concerned (cf. Section 3).

Vowels are found in all but one interjective constructions: [a] appears in 15 tokens (of which 13 make only use of this type of vowel), [i] – 4x (2x); [o] – 4x (2x); [e] – 3x (1x); and [u] – 1x (1x). As far as quasi-vocalic sounds are concerned, [ʔ] is found in 16 tokens; [h] – 6x, [j] – 4x; [ɦ] – 3x, [ħ] – 1x, and [ʕ] – 1x. Interestingly, the only non-guttural approximant (see below) is [j]. There are two genuine consonants attested in shared primary interjections: the dental stop [t] which features in the above-mentioned four tokens of the *tat*-cluster as well as the dental click [|] found in one token. The vast majority of phones that are not genuine vowels are gutturals (glottal and pharyngeal), i.e., [ʔ], [h], [ɦ], [ħ], and [ʕ]. These types of phones feature in 18 shared primary interjections.

Almost all shared interjections exploit sounds that are fully systematic in the Gorwaa language system. Indeed, all vowels attested in shared interjections, i.e., [a, e, o, i, u], constitute regular elements in the phonetic system of the sentence grammar of Gorwaa (cf. Harvey 2018). Most phones that are not canonical vowels are also systematic. This is true of the gutturals [ħ, ʕ, h, ʔ], the approximant [j], and the plosive [t]. The only exceptions are the voiced glottal [ɦ] (attested in three tokens) and the dental click [|] (attested in one token). No sounds that expand beyond the International Phonetic Alphabet are found in the shared interjections in Gorwaa.

Length is a distinctive feature in the standard sound system of Gorwaa and, apart from being short, all vowels may also be long (Harvey 2018, 76). However, exaggerated degrees of length found in five shared interjective tokens, i.e., [ʔíĭ:], [híi:], [ʔóoò:], [ʔőóo:], [ʔűúu:], are extra-systematic from sentence grammar's perspective. Indeed, extra-long and extra-extra-long vowels are generally absent in nouns, verbs, pronouns, and other non-interactive lexical classes (ibid.).

In the majority of shared interjections, the tone of the first vowel is high or extra-high and, importantly, higher than the tone on the subsequent tone carriers. In monosyllabic interjections with a short nucleus, the tone tends to be high ([ʔáh], [ʔáɦ], [hé], [tát]) or extra-high ([ʔä̌h], [tä̌t]). In monosyllabic interjections with longer nuclei, the first tone is high or extra-high and invariably higher than the subsequent tones: [híi:], [ʔíĭ:], [ʔóoò:], [ʔőóo:], [ʔűúu:]. The same can be observed in multi-syllabic interjections as illustrated by [ʔíjaʔ], [ʔíjájjaʔ], [ʔóje:], [tä̧́tä̧tä̧tà̧], [tä̌ttáttattàt], and [tä̌ttáttattàttättät]. Overall, tones typically decrease from higher to lower: from high to middle [˥ > ˧] (e.g., [ʔíjaʔ]), from extra-high to high [˥ > ˦] (e.g., [ʔíĭ:]); from extra-high to high and mid [˥ > ˦ > ˧] (e.g., [ʔőóo:]); from high to mid and low [˦ > ˧ > ˨] (e.g., [ʔóoò:]); from extra-high to high, middle, and low [˥ > ˦ > ˧ > ˨] (e.g., [tä̧́tä̧tä̧tà̧]); and from extra-high to high, middle, low, and extra-low [˥ > ˦ > ˧ > ˨ > ˩] (e.g., [tä̌ttáttattàttättät]). The only exceptions to this tone-decreasing tendency are three lexemes in which tones increase from middle to high ([ʔaɦá] and [ʕaɦáʔ]) or from middle to extra-high ([ʔojě:]). No shared interjection begins with a low or extra-low tone. Overall, it should be noted that out of the five tone types found in shared interjections, only high, middle, and low seem systematic in the standard phonetic system of Gorwaa. This means that extra-high and extra-low tones are marked from sentence grammar's perspective.

The Gorwaa sound system allows for the following syllable structures and thus phonotactic combinations within a syllable: CV, CVC, CVNC, CV:, CV:C, and CV:NC with N being a homorganic nasal (Harvey 2018, 79–80). Of these, only CV, CV:, and CVC (with C being an approximant, guttural, or [t]) are attested in shared interjections. Apart from tolerating an extra-systematic CV:^{n} structure, which results from the presence of exaggerated length discussed above, shared interjections allow for two further extra-systematic sound combinations. One such aberrant syllable structure is CVCC exploited in [ʔáh]. The other corresponds to a syllable which is non-vocalic and thus in which the only phone present is a consonant. This Ç syllable structure is attested in [ǀ#ǀ].

Shared interjections are often accompanied by marked phonation and/or modulations. Indeed, interjections can be 'performed' in a more or less 'dramatic' manner, depending on the need and the appropriateness of the display of expressivity. This expressivity typically involves loudness and articulatory intensity or much less commonly their opposite, i.e., quietness and softness (see [tä̧́tä̧tä̧tà̧] in which all vowels are voiceless due to a whispered or whispering-like realization).

With regard to their morphology, primary and secondary interjections must again be treated separately. To begin with, nearly all shared interjections are primary. These tokens are mono-morphemic with no inflections, derivations, or elements added through the compounding of roots or more complex lexemes. They are thus indivisible into more elementary meaning bearing units. This morphological simplicity is clear in the case of [ʔä̌h], [ʔáh], [ʔáɦ], [hé], [híi:], [ʔíĭ:], [tát], [ʔűúu:], etc. However, it also applies to replicative interjections.

Several shared interjections exploit replicative structures, and replication constitutes one of the formal features that motivate the development of the interjective clusters described above. The following replications are attested in our data: (a) reduplication: [ǀ#ǀ] and [ʔíjájjaʔ]; (b) quadruplication: [ʔä̌hʔáhʔahʔàh], [tä̧́tä̧tä̧tà̧], and [tä̌ttáttattàt]; (c) quintuplication: [ʔä̌hʔáhʔahʔàhʔäh]; and (d) sextuplicatation: [tä̌ttáttattàttättät]. While one may sometimes see a certain degree of semantic relationship between singletons (i.e., non-replicated forms) and replications, none of the replicative interjections can be divided into genuine, more basic meaning-bearing units. Rather, these interjections function as holistic repetitive patterns. For instance, [tä̧́tä̧tä̧tà̧] 'cold, bitter taste' does not constitute a simple computation of two interjections [tát] or [tä̌t], which express the emotions of relief, surprise, and fear as well as sensations of pain, bad taste, exhaustion, or anything unpleasant. Similarly, [ʔä̌hʔáhʔahʔàhʔ] communicating bad taste is not a straightforward multiplication of [ʔä̌h] which expresses surprise, disappointment, irritation (apart from the bad taste) or [ʔáhʔ] which expresses excitement, happiness, surprise, irritation, and fear. This also holds true for [ǀ#ǀ] which tends

to appear in series and should be considered as a unitary replicative pattern rather than a sequence of individual meaning-bearing elements (Section 4.2.2; see also Section 5).

The only genuine exception to the morphological simplicity discussed above is the secondary interjection [ilaʔ#hariseʔ], which is the single secondary interjective token documented by us. [ilaʔ#hariseʔ] is used to call for help and consists of two morphemes: *ila* 'eye' and the imperative *harise'* 'bring!'. The verbatim meaning of this construction is 'bring (your) eye!' which is a metaphorical equivalent to 'help!'. As is the case of the replicated interjections, the meaning of [ilaʔ#hariseʔ] is thus not computational but constructional.

Overall, the class of shared interjections is structurally opaque. It lacks any specific morphological trait that could identify a construction as a member of an interjective category. This is evident if one compares the secondary interjection [ilaʔ#hariseʔ] with all primary interjections. It is however also patent among primary interjections themselves. This may be substantiated by the formal disparity of the interjections such as [ʔǎh], [híi:], [ʔóoò:], and [tǎt] on the one hand, and [ʔí̋jájjaʔ], [ǀ#ǀ], [ʔǎhʔáhʔahʔàhʔàh], and [tǎttáttattàttàttǎt] on the other hand. Certainly, morphological simplicity itself could be regarded as a characteristic of (at least) primary interjections. However, simple morphology or monomorphemic structure is not limited to interjections but also characterizes the other categories of interactive grammar (e.g., conative animal class, human conatives, onomatopoeias, and attention signals). The same applies to replications which are not restricted to interjections but also appear in the above-mentioned interactive categories. Overall, no morphophonemic pattern – and of course no affix, as affixes are absent in shared interjections – is limited to the interjective category in Gorwaa.

4.2.2 Idiolectal interjections

According to our data, the majority of interjections are idiolectal. These tokens have only been produced by a single person and thus fail to be shared by two or more speakers. There are 66 such interjections out of the total of 91 collected in our research. Table 3 introduces these idiolectal interjections and provides the information related to their meaning (emotions and sensations) and source (i.e., the speaker who used them). Interestingly, the five speakers who participated in our study make use of quite a distinct number of interjections specific to them and thus exhibit a radically varying extent of interjective creativity. CT employed 24 idiolectal tokens, HK – 14x, MH – 12x, DH – 9x, and BS – only 7x.

As was the case of shared interjections, a number of idiolectal tokens are lexically (i.e., as form-function combinations) distinct from the other idiolectal interjective constructions. This group includes [ʔabá], [éèé#éèé#éèé], [hǎjǎjạjà̰ʔ], [q'áħʔ], [téeté#téeté], [úsit], [ʔúf:], and [ʔűnúnunù]. Nevertheless, in further similarity to shared interjections, the majority of idiolectal interjections form clusters connected through the family resemblance of a formal and functional type. This family resemblance may link these interjections to other idiolectal interjective tokens, as well as individual shared interjections, or even entire shared-interjection clusters discussed in Section 4.2.1.

There are at least 11 clusters formed by idiolectal interjections. The *ɵʔạ̈ħ/ɵʔħạ̈*-cluster includes [ɵʔạ̈ħ] 'good taste', [ɵʔħạ̈] 'sour taste', and [ɵʔạ̈ħ#phépħepħepħèpħè] 'bad taste' and exploits vowel/consonant positional alternations as well as, in the case of the last token, compounding (refer to Section 5 for a discussion of compounding). The *phV/ħV*-cluster includes [pháħʔ] 'bad smell', [pħápħápħapħàpħà] 'bad smell', [ɵʔạ̈ħ#phépħepħepħèpħè] 'bad taste' mentioned above, and [pħí̋pħípħípħìpħì] 'disgust' and exploits the strategies of consonantal ([h/ħ]) and vocalic alternations ([a, i, e]), different tonal patterns, and replications. The members of this cluster may be related to [pí̋pípípìpì] 'bad smell' and [pű] 'bad smell', yielding an even larger *p*-cluster. The *ka*-cluster includes [kǎkákakàkà] 'surprise, fear, warm or pleasant sensation, spicy taste' and [kạ̈kákạkạ̀kạ̀ʔ] 'surprise, fear, malaise, cold' that mostly vary with regard to the voicing of their vowels. The *m̩*-cluster includes [m̋hʔm̋hʔmhʔm̀hʔm̀hʔ] 'bitter taste', [m̋m̋] 'bad smell', [m̋ʔ] 'bad taste, good smell', and [m̋m̋:] 'frustration, fatigue'. The formal strategies connecting the members of this cluster involve different tonal patterns, lengthening, replications, and the presence of [ʔ] in the coda. The *ʔeh*-cluster includes [ʔéh] 'irritation', [ʔehé:] 'dismay', and [ʔehé̋:] 'happiness'. The forms exhibited by the members of this cluster are related via varying tonal patterns and a vocalic extension, possibly a type of partial/imprecise reduplication. The *ʔa*-cluster

Table 3: Idiolectal interjections in Gorwaa

Token	Feeling	Sensation	Speakers
[ʔǎháhaħàħǎħ]	Happiness, Excitement		[CT]
[ʔáa:h]	Surprise, Disbelief		[CT]
[ʔǎá:h]		Pleasant sensation	[HK]
[ʔáa:ʔ]	Pleasant surprise, Expectation exceeded		[CT]
[ʔǎáa:]	Excitement		[MH]
[ʔǎáa:ħ]		Pain	[MH]
[ʔabá]	Dismay, Confusion		[HK]
[ʔáh]		Pleasant sensation, Good taste	[MH]
[ʔahá:]	Pleasant surprise		[HK]
[ʔǎħʔ]	Exasperation, Annoyance, Disgust		[DH]
[ʔǎhʔáh?]	Excitement, Happiness		[BS]
[ʔǎhʔáhʔahʔàhʔǎh?]		Pleasant sensation	[BS]
[ʔahà]	Exasperation, Disappointment		[HK]
[ʔáħaħʔ]		Good smell	[BS]
[ʔǎjájaj]		Good taste	[BS]
[ʔáwáʔ]	Dismay		[HK]
[ʔaʕáʔ]	Unpleasant surprise		[MH]
[éèé#éèé#éèé]	Happiness, Excitement		[CT]
[ʔehé:#hajjáʔ]	Happiness		[HK]
[f#tát]		Unpleasant taste	[HK]
[ʔéh]	Irritation		[CT]
[ʔehé:]	Dismay		[HK]
[ʔehé̌:]	Happiness		[HK]
[háa]	Excitement, Happiness, Surprise		[HK]
[hadahadí#hadahadí]	Happiness		[CT]
[háhahà?]		Pleasant smell	[HK]
[hǎjájajà?]		Cold	[CT]
[hǐíi:]	Relief, Fear, Wistfulness, Exasperation, Disappointment	(Strong) pain	[BS]
[hóo]	Excitement, Happiness		[HK]
[hő̌óo:]	Exasperation		[CT]
[ħáʔ]	Disgust, Irritation		[CT]
[ħáaà:]		Pain	[CT]
[ʔǐjájajajà?]		(Strong) Pain	[CT]
[kǎkákakàkǎ]	Surprise, Fear	Warm, Pleasant sensation, Spicy taste	[CT]
[kǎ̧kǎ̧kạkạ̀kạ̌?]	Surprise, Fear	Malaise, Cold	[CT]
[lálálálálílílílílílí:]	Excitement		[MH]
[lílílílílílílílílílílí]	Fear		[MH]
[ḿhʔḿhʔmhʔm̀hʔm̀h?]		Bitter taste	[CT]
[ḿḿ:]	Frustration	Fatigue	[MH]
[ḿḿ]		Bad smell	[MH]
[ḿ?]		Bad taste, Good smell	[MH]
[ʔő̌:]	Fear	Pain	[DH]
[ʔoóő̌:]	Unpleasant surprise		[HK]
[ʔójé#oje#òjè#ǒjè]		Pain	[DH]
[pháħ?]		Bad smell	[DH]
[pħǎpħápħapħàpħà]		Bad smell	[CT]
[pħ̌ípħípħípħìpħ̀ì]	Disgust		[CT]
[pǐpípípìpǐ]		Bad smell	[CT]
[pű̌]		Bad smell	[MH]
[q'áħ?]	Exasperation, Annoyance		[DH]
[tǎtátatàtàt]	Surprise, Fear	Cold	[CT]
[tǎttáttattàttàt]		Bad smell	[BS]
[téeté#téeté]	Happiness		[CT]
[tű̌tútututùtǔ?]		Unpleasant or painful sensation in mouth, Bad smell	[DH]

(Continued)

Table 3: *Continued*

Token	Feeling	Sensation	Speakers
[tűú]		Bad taste	[DH]
[úsit]	Shock, Disgust, Dismay		[HK]
[ʔű:]	Relief, Fear		[DH]
[ʔű:ʔú:ʔu:ʔ]	Exasperation		[DH]
[ʔúf:]	Tiredness, Frustration		[CT]
[ʔűnúnunù]		Perceiving something cute	[MH]
[ʔúuù:]	Relief, Fear		[MH]
[χáʔ]	Disgust, Irritation		[BS]
[l#tǎtátattàtàt]		Good smell	[CT]
[O?ạ̃ħ#pħépħepħèpħè]		Bad taste	[CT]
[O?ạ̃ħ]		Good taste	[CT]
[O?ħạ̃]		Sour taste	[CT]

includes [ʔáa:ʔ] 'pleasant surprise' and [ʔáάa:] 'excitement' whose forms differ in tone, length, and the presence of the word-final [ʔ]. The *tu*-cluster incudes [tűtútututùtù?] 'unpleasant or painful sensation in mouth, bad smell' and [tűú] 'bad taste', which vary in sequentiality (being punctual or replicated) and duration (being short or long), as well as tonal pattern. The *lV*-cluster includes [lálálálálîlîlîlîlîlí:] 'excitement' and [lílîlîlîlîlîlîlîlîlílí] 'fear' which exploit the [lV] element by altering the quality of the vocalic nucleus and its length. The *ho*-cluster includes [hóo] 'excitement, happiness' and [hőóo:] 'exasperation' which principally exploit alternative degrees of length and tonal patterns. Lastly, the *ʔu*-cluster includes [ʔű:] 'relief, fear', [ʔű:ʔú:ʔu:ʔ] 'exasperation', and [ʔúuù:] 'relief, fear'. The members of this cluster modify the element [ʔu] by varying its tone, prolonging the vowel, and/or replicating the entire singleton. Additionally, lexemes of two further clusters of idiolectal interjections differ by modifying some properties of one of their consonants. First, [χáʔ] and [ħáʔ] which express disgust and irritation differ by the place of articulation or the guttural onset: uvular [χ] and glottal [ħ]. Second, [ʔáwáʔ] and [ʔaʕáʔ] which communicate dismay and unpleasant surprise respectively, differ by the place of articulation of the medial approximant: a labio-velar in (i.e., [w]) versus pharyngeal (i.e., [ʕ]).

Some of the clusters formed by idiolectal interjections may be connected to individual shared interjections. For instance, the *ʔu*-cluster may also include the shared interjection [ʔűúu:] 'fear, sadness, pain, good smell, bad smell'. This leads to the further expansion of the formal-functional space covered by such clusters. In fact, a few 'new' clusters emerge due to the family–resemblance relationship linking individual idiolectal and shared interjections. For instance, *hi*-cluster is formed on the one hand by idiolectal token [hî́íi:] which, when used by BS, expresses relief, fear, wistfulness, exasperation, disappointment, and pain, and on the other hand by the shared lexeme [híi:] communicating disgust, pity, relief, and sadness. Additionally, some idiolectal interjections further expand the clusters that have been identified for shared interjections in Section 4.2.1. For example, the idiolectal [ʔî́jájajàjà?] '(strong) pain' may be connected to the *ʔija*-cluster formed by [ʔíja?] 'pain' and [ʔî́jájja?] 'pain, malaise'. Similarly, the idiolectal [ʔójé#oje#òjè#òjè] 'pain' can be related to the *oje*-cluster formed by [ʔojě:] 'relief, fear, disgust, surprise, shock, pain' and [ʔóje:] 'disappointment, pain'. Finally, several idiolectal interjective clusters form larger clusters that enlarge the scope of the clusters that have been identified for shared interjections. Such combinations lead to the formation of clusters characterized by high complexity. For example, the *ʔo*-cluster includes the shared-interjective cluster formed by [ʔóoò:] 'disappointment, sadness, fear' and [ʔőóo:] 'happiness, pain', as well as the idiolectal-interjective cluster formed by [ʔő:] 'fear, pain' and [ʔoóő:] 'unpleasant surprise'. The *ʔaħ*-cluster formed by the shared lexemes [ʔáħ], [ʔaħá], and [ʔáħa?] which cover the semantic space of distaste, dismay, disgust, indignation, irritation as well as other unpleasant sensations is expanded by the cluster constituted by the idiolectal lexemes [ʔáάa:ħ] 'pain', [ʔaħà] 'exasperation, disappointment', [ʔáħaħ?] 'good smell', and [áħáħaħàħàħ] 'happiness, excitement'.[8] The

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8 See also the relationship between [ʔáħaħ?] 'good smell' and [ʔájájaj] 'good taste'.

Figure 2: Semantic family resemblance of the members of a cluster (the *ʔah*-cluster).

idiolectal interjections [tátátatàtàt] 'surprise, fear cold' and [táttáttattàttàt] 'bad smell' expand the *tat*-cluster many members of which also express the above feelings and sensations. Lastly, in addition to the shared tokens [ʔãh], [ʔãhʔáhʔahʔàh], and [ʔãhʔáhʔahʔàhʔàh] which express negative feelings and sensations and [ʔáhʔ] which also expresses excitement and happiness, the *ʔah*-cluster contains the idiolectal tokens with mostly positive meaning: [ʔáh 'pleasant sensation, good taste', [ʔahá:] 'pleasant surprise', [ʔãhʔáhʔ] 'excitement, happiness', and [ʔãhʔáhʔahʔàhʔàh] 'pleasant sensation'. (See also [ʔáa:h] 'surprise, disbelief' and [ʔãá:h] ' pleasant sensation'). Figure 2 models this impressive *ʔah*-cluster built around shared and idiolectal tokens.

In agreement with the phonetic profile exhibited by shared interjections, most idiolectal interjections are monosyllabic or consist of monosyllabic segments replicated in a series. At least 48 interjective lexemes belong to this class. This can be illustrated by [ʔáa:h], [ʔáhʔ], [ʔéh], [ɦáʔ], [m̃ʔ], [qʼáɦʔ], [tűú], and [ɵʔɦą] as well as [ãɦáɦaɦàɦàɦ], [ʔãhʔáhʔ], [éèé#éèé#éèé], [kãkákakakàkà], [lílílílílílílílílílílí], [pɦãpɦápɦapɦàpɦà], [p̃ípípípìpɪ̃], and [ʔű:ʔú:ʔu:ʔ]. Disyllabic interjections or interjections composed of disyllabic segments are much fewer. There are 11 lexemes of this class: [ʔabá], [ʔahá:], [ʔaɦà], [ʔáwáʔ], [ʔaʕáʔ], [ʔehé:], [ʔehḗ:], [úsit], [f#tát], as well as [ʔ̃íjájajàjäʔ] and [ʔójé#oje#òjè#ɔ̃jè]. Three further interjections are built around two monosyllabic segments, the latter of which is itself replicated in a series: [ɦ̃ãjájają̀ją̀ʔ], [ʔűnúnunù], and [ɵʔą̃ɦ#pɦépɦepɦèpɦè]. Some interjections may be analyzed as imprecise replications of monosyllabic segments or, alternatively, as disyllabic: [téeté#téeté] and [ʔáɦaɦʔ]. Structures that expand beyond two syllables are extremely rare. The interjection [ʔehé:#hajjáʔ] exhibits five syllables while [hadahadí#hadahadí] seems to be a replication of a quadrisyllabic chunk, which itself may also be viewed as an imprecise replication of the disyllabic segment *hadV*.

In further similarity to shared interjections, most idiolectal interjections are vocalic in nature. 36 tokens are composed of genuine vowels and 'quasi-vocalic' elements (i.e., [j], [w], [h], [ɦ], [ħ], [ʕ], and [ʔ]), e.g., [áɦáɦaɦàɦàɦ], [ʔááa:], [ʔáwáʔ], [ʔaʕáʔ], [éèé#éèé#éèé], and [ʔǘ:]. The glide [j] is slightly more common (5x) than [w] (4x), which was entirely absent in shared interjections. 26 idiolectal interjections draw on both vocalic and genuine consonantal material, e.g., [ʔabá], [f#tát], [qáɦʔ], [téeté#téeté], and [úsit]. Four additional lexemes are built around syllabic nasals, used alone or accompanied by an approximant and/or sounds related to vowels: [ḿh?ḿh?mh?m̀h?m̀h?], [ḿm̋:], [ḿm̋], and [m̋ʔ]. There are no idiolectal interjections that would only consist of consonants other than the syllabic [m] mentioned above.

As far as the canonical vowels are concerned, the [a] vowel predominates being found in 40 tokens. In 34 of these, [a] is the only vowel used. For the remaining vowels, the frequencies are as follows: [u] – 9x/8x; [i] – 9x/3x; [e] – 8x/5x; [o] – 5x/4x (additionally, as mentioned above, the syllabic nasal [m] is found in 4 lexemes).

This preference for the vowel [a] coincides with the high visibility of guttural sounds: glottal ([ʔ] [h], [ɦ]), pharyngeal ([ħ], [ʕ]), and uvular ([q'], [χ]). Gutturals are the only sounds other than genuine vowels in 31 idiolectal interjections. In further 20 tokens, they co-occur with other consonants. In total, gutturals appear in 51 tokens. The variety of gutturals is larger than in shared interjections discussed previously and apart from ([ʔ] [h], [ɦ], [ħ], and [ʕ]), includes [χ] (found in [χáʔ]) and [q'] (found in [q'áɦʔ]). The most frequent guttural is [ʔ] – 41x, as was also the case of shared interjections. The remaining gutturals exhibit the following frequencies: [h] – 18x; [ħ] – 8x; [ɦ] – 6x; [ʕ] – 1x; [q'] – 1x; and [x] – 1x.

The set of consonants that are found in idiolectal interjections (excluding the approximant-like gutturals listed in the previous paragraph) is also broader and includes [t] – 8x; [p] – 6x; [f] – 2x; [k] – 2x; [l] – 2x; [b] – 1x; [d] – 1x; [n] – 1x; [s] – 1x, and the above-mentioned [q'] – 1x and [χ] – 1x, as well as two clicks, the bilabial [ʘ] attested in three lexemes and the dental [ǀ] attested in one lexeme (see also [m] found 4x which, as explained previously, is always syllabic).

Most sounds used in idiolectal interjections are fully systematic from the perspective of the standard phonetic system of Gorwaa. Two exceptions are the clicks [ǀ] and [ʘ], as well as the voiced glottal approximant [ɦ]. Two of these sounds, i.e., [ǀ] and [ɦ], are present in shared interjections as well. Interestingly, the click [ʘ] can be combined with other phones, namely, vowels, approximants, and consonants: [ʘʔa̰ɦ#pɦépɦepɦèpɦè], [ʘʔa̰ɦ], and [ʘʔħa̰]. As is true of shared interjections, non-IPA sounds fail to be exploited in idiolectal interjections collected by us.

Extra-systematicity is more patent in the phonotactics of idiolectal interjections. The most salient exponent of this is the common use of exaggerated vocalic length attested in [ʔááa:], [éèé#éèé#éèé], [ɦí́i:], [ɦőóo:], [ɦáaà:], [ʔoőő:], [ʔúuù:] as well as [ʔááa:ɦ], [ʔáa:ʔ], [ʔáa:h], and [ʔáá:h]. This means that idiolectal interjections tolerate extra-systematic syllable structures (C)V:^{n} and CV:^{n}C. Additional extra-systematic syllable structures found in idiolectal interjections are: CVCC attested in [pʰáɦʔ] [ʔáɦʔ], [ʔáɦaɦʔ], [ʔáɦʔáɦʔ], [ʔáɦʔáɦʔahʔàhʔàhʔ], and [qáɦʔ]; CCV(C) attested in [pɦápɦápɦapɦàpɦà], [pɦí́pɦípɦípɦìpɦì], [ʘʔa̰ɦ]; and CCCV attested in [ʘʔħa̰]. Phonotactic extra-systematicity also transpires through the use of the nasal [m] and the fricative [f] as syllable carriers and syllabic nuclei: [ḿh?ḿh?mh?m̀h?m̀h?], [ḿm̋:], [ḿm̋], [m̋ʔ], and [f#tát]. (A similar phenomenon may be observed with the click [ǀ] in [ǀ#tǎ tátattàtàt].) This yields a C̩(:)(CC) syllable structure, which is unattested in the phonetic system of sentence grammar. The token [ḿm̋:] also demonstrates that, in idiolectal interjections, consonants may be extra-long.

The tonal behavior of idiolectal interjections is consistent with what we observed in shared interjective tokens. Most monosyllabic idiolectal interjections carry high tone ([ʔáh], [ʔáɦʔ], [f#tát], [ʔéh], [ɦáʔ], [pʰáɦʔ], [q'áɦʔ], [ʔúf:], [χáʔ]) or extra-high tone ([m̋ʔ], [pǘ]). If the vowel is long ([ʔő:] and [ʔǘ:]) or the interjection consists of replicated monosyllabic segments ([lálálálálíĺílíĺílíĺí:] and [líĺílíĺílíĺílíĺíĺí]), such (extra-)high tones may persist through out a lexeme. Nevertheless, most idiolectal interjections with long vowels, replicated segments, or genuinely polysyllabic structures exhibit decreasing tonal patterns. The decreasing tonal patterns attested in idiolectal tokens are more diverse than is the case of shared interjection (Section 4.2.1) and, for instance, include [˥ > ˧ > ˨] (e.g., [ɦáaà:]), [˥ > ˧ > ˧ > ˨] (e.g., [ʘʔa̰ɦ#pɦépɦepɦèpɦè]), and [˥ > ˧ > ˧ > ˧ > ˨] (e.g., [pɦí́pɦípɦípɦìpɦì] and [pǐ́pípípìpì]). For tokens with long vowels, see [ʔáa:h], [ʔáá:h], [ʔáa:ʔ], [ʔááa:], [ʔááa:ɦ], [ɦáa], [ɦí́i:], [ɦóo], [ɦőóo:], [ɦáaà:], [ḿm̋], [ḿm̋:], [tǘú], [ʔúuù:]. For tokens with replicated segments, see [áɦáɦaɦàɦàɦ], [ʔáɦʔáɦʔ], [ʔáɦʔáɦʔahʔàhʔàhʔ], [ɦáhahàʔ], [kákákakàkà], [ka̰ḱa̰ḱa̰ka̰ka̰ka̰ʔ], [ḿh?ḿh?mh?m̀h?m̀h?],

[pʰápʰápʰapʰàpʰä], [pʰípʰípʰípʰìpʰì], [pípípípìpì], [tátátatàtàt], [táttáttattàttät], [tútútutùtù?], [?ú:?ú:?u:?]. For disyllabic tokens, see [?aħà], [hájájàjà?], [?íjájajàjä?], [?ójé#oje#òjè#öjè], and [úsit]. This decreasing tonal structure is violated in a very few instances: [?abá], [?ahá:], [?aʕá?], [?ehé:#hajjá?], [?ehé:], [?ehé:], [?oóó:]. In all the cases of an increasing tonal melody, the first vowel or vowel unit carries the middle tone. This means that no idiolectal interjection starts with a low or extra-low tone, which was also true of shared interjections. A few tokens carry a middle tone [Ɵ?ąħ], [Ɵ?ħą]; a few others exhibit a high-low-high ([éèé#éèé#éèé]) and high-middle-high pattern ([téeté#téeté]).

As far as modulations and/or phonation are concerned, several idiolectal interjections are realized with articulatory intensity visible through high volume (loudness). In some constructions, this intensity transpires through aspiration, see [pʰáħ?]. The other members of the cluster containing [pʰáħ?] – namely, [pʰápʰápʰapʰàpʰä], [Ɵ?ąħ#pʰépʰepʰèpʰè] and [pʰípʰípʰípʰìpʰì] – may attest to the further strengthening of [h] and its realization as a harsher sound, i.e., [ħ]. As mentioned above, a few interjective tokens are whispered: [Ɵ?ąħ], [Ɵ?ħą], [hájájàjà?], [kákákąkàkä?], [Ɵ?ąħ#pʰépʰepʰèpʰè]. This results in the presence of extra-systematic vocalic voiceless-ness, with [ą] being the only voiceless vowel attested in our database.

With regard to morphology, idiolectal interjections tend to be simple. None of these interjections contains inflections or derivations. Most idiolectal interjective tokens are thus monomorphemic and consist of a root only. Several interjections attest to replications which, however, constitute an expressive device rather than a derivative strategy. That is, replicated interjections form holistic patterns that cannot be divided into more fragmentary and distinct meaning-bearing units such that a replicated pattern is a straightforward computation of the underlying singleton. Nevertheless, a few idiolectal interjections may indeed be viewed as combinations of what seem to be independent interjections. For instance, [?ehé:#hajjá?] expressing happiness consists of an element strongly resembling [?ehé:] that also expresses happiness and the word *hajjá?* [hajjá?] which is the common Gorwaa equivalent of the English *okay*. Similarly, [f#tát] that communicates 'unpleasant taste' contains the interjection [tát] expressing relief, surprise, fear, pain, malaise, exhaustion, unpleasant sensation, and as is the case of [f#tát], bad taste. The element [f] present in [f#tát] may be related to *f*-type interjections which cross-linguistically are commonly associated with the sensation of bad taste or smell (*fe* and *fuj* in Polish; Wierzbicka 2003). The same applies to [Ɵ?ąħ#pʰépʰepʰèpʰè] which expresses bad taste. This interjections arguably draws on [Ɵ?ąħ] expressing good taste (see also [Ɵ?ħą] 'sour taste') and an element that is related to [pʰáħ?], [pʰápʰápʰapʰàpʰä], [pʰípʰípʰípʰìpʰì] which express bad smell and disgust. Sometimes a derivative relationship – if it existed – becomes less transparent. For example, [ǀ#tátátattàtät] expressing good smell seems to consist of the element [ǀ] related to the shared interjections [ǀ#ǀ] 'unpleasant taste, pleasant taste' on the one hand, and the cluster of shared interjections [tátátattàt] 'pain (strong, long-lasting), bitter taste, sour taste, spicy taste, unpleasant sensation' and [táttáttattàttät] 'excitement, bad smell', and the idiolectal interjection [táttáttattàttät] 'bad smell'. Overall, shared interjections are structurally opaque. They fail to be marked by any unique morphological structure that would distinguish them from other lexical classes.

Additionally, one should note that all idiolectal interjections are primary. Some of them have an imitative foundation. According to native speakers, [kákákąkàkä?] and [tátátatàtàt] expressing, among other meanings, the sensation of cold mimic shivering (this is also plausible for the shared token [tátátątà]); [Ɵ?ąħ] expressing good taste is imitative of smacking one's lips; [lálálálálílílílílílí:] expressing appreciation of something cute is imitative of ululation; and [f#tát], [tűú], and [tútútutùtù?] expressing unpleasant or bad taste (or smell) are imitative of smacking lips and spitting something out. Additionally, two idiolectal interjections, i.e., [hadahadí#hadahadí] and [téeté#téeté], apparently draw on so-called baby talk or the register that is employed when talking to infants and toddlers.

5 Discussion

5.1 Answering the research question(s)

The data presented in Section 4 demonstrate that, in Gorwaa, the grammatical profiles of shared and idiolectal interjections are virtually identical. This similarity is unmistakable despite the disproportion characterizing

the two interjective classes (73% interjections are idiolectal while only 27% are shared) and the different extents of access to idiolectal tokens by the individual speakers (the most creative speaker contributes with 36% of the idiolectal interjections while the least creative one with only 10%). Below we summarize the properties that typify both classes of interjections.

To begin with, while some shared and idiolectal tokens are lexically distinct(ive), many – in fact, the greater part of them – form form-function clusters connected through family resemblance. Such clusters may range from simpler to highly complex. Regarding phonetics, the majority of shared and idiolectal interjections are (i) monosyllabic or built around monosyllabic segments; (ii) they abundantly draw on vocalic material: genuine vowels and/or 'quasi-vocalic' elements; (iii) they often exploit guttural phones whether glottal, pharyngeal, or uvular – with the glottal phones [ʔ] and [h] being the most frequent guttural sounds – and simultaneously exhibit preference for the vowel [a]; (iv) interjections may make use of extra-systematic sounds (i.e., [ǀ], [ɵ], and [ɦ], as well as the voiceless vowel [ḁ]); in contrast, non-IPA sounds are unattested in our data even in idiolectal tokens; (v) the extra-systematicity of interjections is more visible in phonotactics and transpires through the exaggerated degrees of length (e.g., extra-long and longer vowels) and extra-systematic syllable structures (e.g., (C)V:^{n}, Ç, CVCC, CV:^{n}C, and Ç(:)(CC)); (vi) the tone of the first vowel tends to be high or extra-high, in any case higher than the tone of the subsequent tone carrier(s) – this means that most interjections exhibit a decreasing tonal pattern; (vii) the phonation/modulation of interjections is – or can always be – marked, with loudness and articulatory force being the most typical realizations. Regarding morphology, (i) nearly all shared and idiolectal interjections collected by us are primary; (ii) they tend to be structurally simple: they are mono-morphemic with no inflections, derivations, or elements added though compounding (the only exceptions involve secondary interjections and a few primary idiolectal interjections that seem to be combinations of independent primary tokens); (iii) interjections often exploit replicative structures which constitute holistic patterns rather than genuine derivative strategies; and (iv) when considered in its totality, the interjective category is opaque.

Although the similarity of shared and idiolectal interjections is unmistakable – as stated above, the profiles exhibited by these two classes are virtually identical – two minor distinctions can also be identified. First, idiolectal interjections attest to more types of extra-systematic sounds and sound combinations than is the case of shared interjections. Second, more examples of morphological complexity, in particular compounding, are found in idiolectal interjections than in shared interjections. Although these differences may simply be due to the larger number of idiolectal tokens collected in our study, they may also reflect the inherent developmental dissimilarities of idiolectal and shared tokens. The former reason is trivial; in contrast, as we explain below, the latter reason is not trivial.

The presence of compounding in idiolectal interjections arguably reflects a grammaticalization process typical of interjections. Crosslinguistically, interjections can be accumulated by forming chains of interjective tokens (Andrason and Dlali 2020, 203, Andrason and Karani 2023, 104). Such chains may gradually acquire "a more fixed constructional status" (Andrason and Dlali 2020, 204), yielding semi-analytical-syntactic and semi-synthetic-morphological structures. Importantly, instead of being a straightforward summation of the meaning of their composite parts (as is the case of interjections concatenated analytically as horizontal syntactic sequences), the meaning of these new combinations is often constructional: related to the semantics of the formative interjective tokens, yet novel (ibid.). Since grammatical novelties are first coined idiolectally, from where some of them spread across a larger number of speakers and become more entrenched and stabilized across the population, one expects to find more interjective compounds in idiolectal interjections. As our data indicate, this is the case of Gorwaa.

The greater visibility of extra-systematic sounds and sound combinations in idiolectal interjections may also be explained by referring to the process of grammaticalization. This more palpable phonetic extra-systematicity stems from the lesser 'tameness' of idiolectal constructions, i.e., their (very) limited adjustment to the grammatical norms of the language and, inversely, an incomplete loss of expressiveness. In other words, with the entrenchment of interjective tokens and their spread across the population, the expressivity present in extra-systematic features (not only phonetic but also morphological) decreases. This development would parallel well-known phenomena taking place during the grammaticalization of ideophones (including onomatopoeias). Concurrently to the increased integration of ideophones into the sentence grammar of a

language, their expressiveness, i.e., intonational and phonational foregrounding as well as replicative and prolonged morphology, diminishes (Dingemanse 2017, 373, Dingemanse and Akita 2017, 506–11, 526, Levisen 2019, Körtvélyessy 2020, Andrason 2021b, 22–3, Andrason et al. 2023a, Andrason and Heine 2023, 246–7, 256). To put it simply, the more ideophones grammaticalize, the more grammatically harnessed and less genuinely expressive they are (Andrason and Heine 2023, 256). Since grammaticalization is correlated with the increase in frequency, one of the reasons and exponents of which – as we explained above – is the spread of a construction across the population, tokens shared by a number of speakers are expected to be more grammaticalized and thus grammatically integrated and tamed. In contrast, idiolectal tokens are expected to be more expressive, less tamed, and characterized by a greater degree of extra-systematicity.[9] Again, this situation is attested in Gorwaa's interjections.

In light of the above and despite the fact that we studied shared and idiolectal interjections as distinct classes, the two sets should not be viewed as discrete and/or disconnected. Quite to the contrary, shared and idiolectal interjective tokens are connected through grammaticalization processes and thus related to each other both diachronically and conceptually. They differ in the extent of their entrenchment and spread across Gorwaa speakers, and as the corollary thereof, the extent of grammatical tameness and an inverse loss of expressivity. This diachronic connection transpires in – i.e., leads to and provide the explanation of – the development of interjective clusters to which both shared and idiolectal interjections jointly contribute (see further below).

Overall, the data presented in this article demonstrate that Gorwaa interjections are highly unstable. This instability stems from the two main phenomena which we have already mentioned in this section. First, the large number of idiolectal interjections, which is a characteristic of Gorwaa speakers, suggests on its own that interjections are prone to mutations. Individual speakers easily create new interjections either by modifying the patterns that exist in the language or by forming new constructions by analogy to those existing already. This leads to the proliferation of idiolectal tokens as observed in our research. Second, constituting a result of the above phenomenon, the majority of interjections, both idiolectal and shared, form clusters – spaces composed of similar interjective constructions connected through the family resemblance of a formal (phonetic and morphological) and functional (meaning) type. The members of a cluster – or the variants included in it – can be achieved through the following processes:

(a) Prolongation of one of the vowels or consonants even to exaggerated degrees of length. Compare [ʔǘː] with [ʔúuùː] both of which express relief and fear as well as [ʔő̌ː] expressing fear with [ʔoőő̌ː] expressing unpleasant surprise.

(b) Replication of a segment in sequences of two, three, four or more. Compare the punctual interjection [t̪ǎt̪] (expressing surprise, fear, pain, spiciness, and bad smell) with the quadruplicated [t̪ǎt̪ǎt̪ǎt̪à̰] (expressing cold, bitter taste) and [t̪ǎttát̪tattàt] (expressing pain, bitter, sour, and spicy taste, unpleasant sensation), the quintuplicated [t̪ǎt̪átatàtàt] (expressing surprise, fear and cold) and [t̪ǎttáttattàttàt] (expressing bad smell), and the sextuplicated [t̪ǎttáttattàttàttàt] (expressing excitement and bad smell).

(c) Exploitation of different tonal and phonational/modulational patterns. Compare [ʔóoò̌ː] (expressing disappointment, sadness, and fear) with [ʔőő̌o] (expressing happiness).

(d) Modification of one of the features in a particular phone. Compare [χáʔ] and [ħáʔ] which both express disgust and irritation but differ in the place feature of the initial guttural: uvular [χ] versus glottal [ħ].[10] Compare also [kákákakàkà] and [t̪ǎt̪átatàtàt] which express surprise and fear. Their main difference concerns the place feature of the voiceless stop: velar [k] versus dental [t].

(e) Related to the previous strategy, the modification of a cluster of features within a segment. This is especially the case of interjections that have an imitative foundation. Compare [pɦáħʔ], [pɦápɦápɦapɦàpɦà], [p̋ɪ́pípípɪ̀pɪ̀], and [pǘ] expressing bad smell as well as [pɦ̋ɪ́pɦɪ́pɦɪ́pɦɪ̀pɦɪ̀] expressing disgust which all imitate the act of spitting or blowing air and seem variations built around bilabial stops, gutturals, and vocalic elements.

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9 As Gorwaa lacks written tradition, the assessment of the orthographic stabilization of interjections is not possible (cf. Körtvélyessy 2020, Andrason et al. 2023a).

10 The opposition also involves voicing, i.e., voicelss [χ] versus voiced [ħ].

(f) Use of several devices enumerated above concurrently. (This means that strategies (a)–(e) are not mutually exclusive.) Compare [hóo] (expressing excitement and happiness) and [hőóo:] (expressing exasperation) which differ in both length and tonal pattern.

(g) An interjection may also be modified by concatenating it with another interjection. See [ǀ#tắtátattàtăt] (expressing good smell) which is related to [ǀ#ǀ] (expressing both unpleasant and pleasant taste) and several replicated forms of the *tat*-cluster (expressing mostly unpleasant sensations involving smell, taste, and pain).

The large pallet of possible modifications suggests that the morpho-phonetic shape of the construction expressing an emotion – or its 'lexical carrier' – is less crucial than the intonational, phonational/modulational, and even gestural (Section 3) prompts, hints, and clues that are accessible to speakers. As these intonational, phonational/modulational, and gestural strategies are common to everyone – they could indeed be viewed as universal within the Gorwaa as well as any given language community – speakers can easily produce and/or decipher an unlimited number of idiolectal interjective variations and pair them with an accurate feeling. Consequently, all types of morpho-phonetic forms are potentially compatible with any given emotion and sensation as long the intonation, phonation/modulation, and gestures disambiguate them – perhaps within certain constraints related to the iconicity of interjections expressing physical sensations (shown further below). Overall, while each variant need not be entrenched and may be speaker-specific, the access to variations itself seems to constitute a regular stratagem available to all language users. This ability to change form (through the strategies enumerated above) and meaning (mostly through metonymy and analogical extensions to distinct semantic domains) typifying Gorwaa interjections results in the development of vast interjective clusters. We think that the formation of such interjective clouds – and thus the existence of the formal and functional instability of interjections – is interconnected with two properties that have been viewed as prototypical in interjections: their radical polysemy and heavy context dependency (Ameka 1992, Nübling 2004, Stange and Nübling 2014, Stange 2016, Andrason and Dlali 2020). Indeed, it is this inherent polysemy and context dependency that constitute both the reasons and manifestations of the high mutability of interjective form-meaning pairings.

The instability of interjections demonstrated in our study provides an explanation to the pervasive problem we have encountered in the present research and in our previous studies on interjections. The issue in question concerns distinguishing between a single interjective entry/lemma and the variants of an entry/lemma, and ultimately determining the set of interjections in a language. In our opinion, one should not tackle this question from an essentialist either-or perspective typical of approaches that draw on the Saussurean idea of neat, static, and binary oppositions. The issue should rather be dealt with from a dynamic, fuzzy, and complex-system perspective. Instead of a system of clearly cut lexicalized constructions, we are faced with a fluid system of interjective clusters in which borderlines between respective tokens are gradient, fuzzy, and fluctuating. To put it simply: the form and meaning of any interjection can *always* be modified even in the shared and relatively stabilized constructions and the question of whether each such (less or more) modified interjection is a new entry/lemma or a mere variation, is less important than the fact that it belongs to a cluster of interjective tokens connected through family resemblance. Like the idea of invariant abstract meaning – the so-called semantic common denominator – has been replaced in cognitive semantics by the notion of radial category the members of which are connected through family resemblance, so can the view of an interjection as a static form-meaning pairing be replaced with its understanding in terms of an interjective cluster, another type of network connected by family resemblance.

Figure 3 provides an abstract model of this alternative view of interjections: dynamic, fuzzy, and network-driven. On the one hand, a particular feeling is expressed by a set of related forms which can be manipulated through prolongations, replications, alternations of similar phones, 'elaboration' on phones, intonation, phonation/modulation, and the incorporation of other interjections, as well as, although unattested in Gorwaa, the presence of so-called satellites (see Andrason 2021a for Xhosa). Each form is characterized by a set of formal properties (represented with features A, B, C) which through the above-mentioned manipulative strategies can be changed to gradually more different ones (e.g., B, C, D > C, D, E > D, E, F). On the other hand, formally similar interjections may gradually diverge from the input meaning by acquiring new semantic values and losing
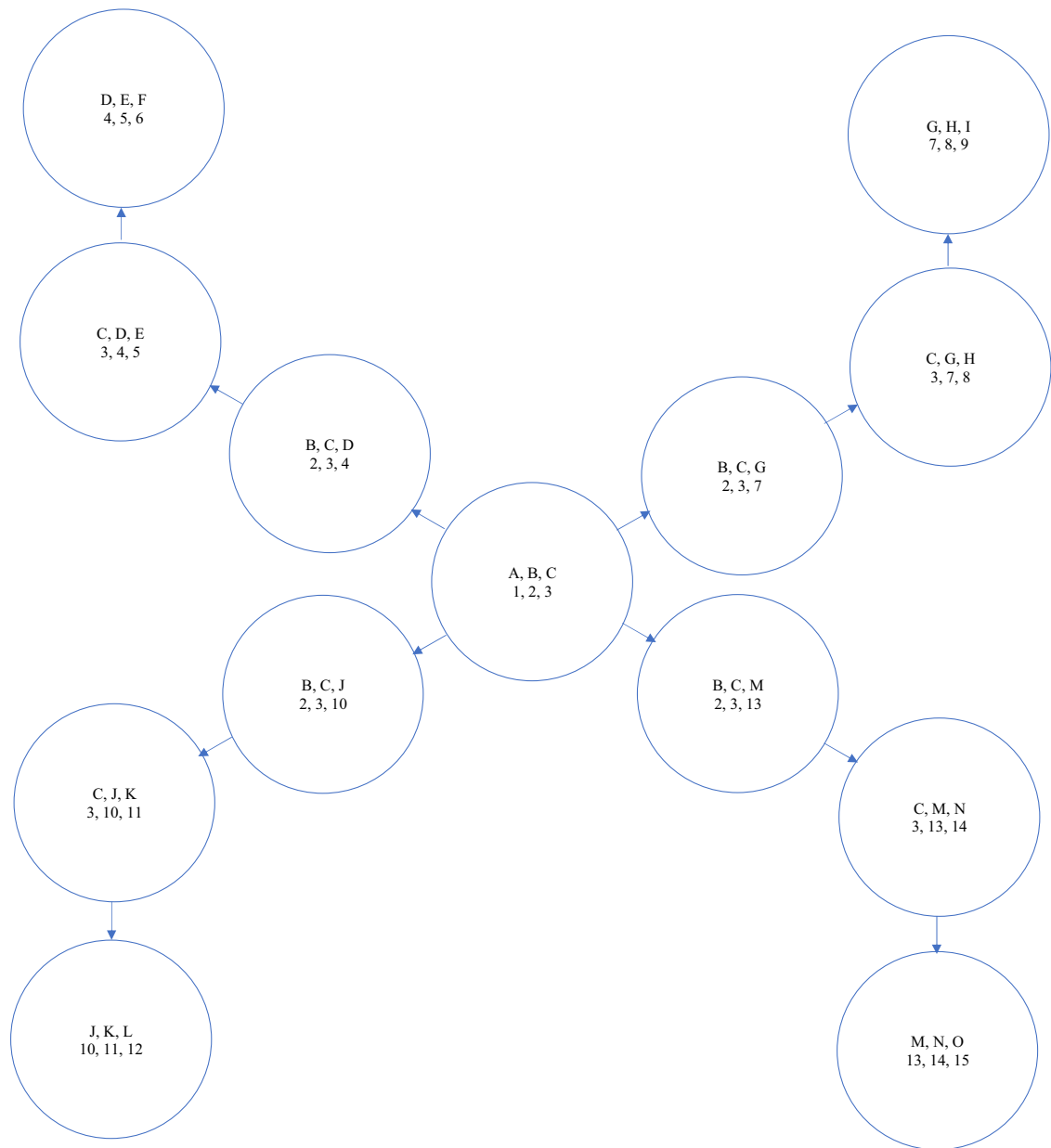
Figure 3: Model of an interjective network.

(some of the) meanings associated with the other related forms. Similar to what characterizes the form, their meaning (represented with senses 1, 2, 3) would gradually become more distant (e.g., 2, 3, 4 > 3, 4, 5 > 4, 5, 6). Both the formal and functional properties of a cluster are connected via family resemblance, and it is this family resemblance that provides the coherence and unity to the cluster – despite the fact that two opposite and most distant members of the network need not have any morpho-phonetic and semantic property in common (compare the interjection {D, E, F | 4, 5, 6} with {M, N, O | 13, 14, 15} in Figure 3). It is possible that several interjective clusters form such larger networks. Ultimately, the whole interjective category could perhaps be viewed as forming a single mega-network of related clusters.

5.2 Further contribution to the theory of interjections

Apart from responding to the research question and demonstrating the instability of interjections in Gorwaa, our study offers further contributions to the general theory of interjections. To begin with, all features associated with an interjective prototype (Nübling 2004, Ameka and Wilkins 2006, Stange and Nübling 2014, Stange 2016, Andrason and Dlali 2020, Andrason and Karani 2023, Heine 2023) are instantiated in our data, in fact to a large extent. In phonetics, the compliance of Gorwaa interjections with the interjective prototype transpires through their monosyllabicity, vocalicity and gutturality, extra-systematicity of sounds and sound combinations, and marked phonation. In morphology, the compliance with the prototype transpires through mono-morphemicity (and thus absence of inflections, derivations, and compounded elements), non-derivational replications, and opacity. The minor exceptions identified at the beginning of the previous section are attested in secondary interjections and a few idiolectal interjections – the phenomenon that has also been noted in scholarly literature (Nübling 2001, 2004, Andrason and Dlali 2020, Andrason et al. 2023b, Andrason and Karani 2023). Similarly, as has been observed in several other languages (see Andrason et al. 2023b for Hadza and Andrason and Karani 2023, 110 for Maasai), it is not the frequency of extra-systematic sounds that typifies interjections but rather the availability of such non-standard vowels and consonants. Nevertheless, the absence of non-IPA sounds in the Gorwaa data is puzzling since the presence of such phones and sounds regarded as 'noises' is expected especially in idiolectal tokens. (As is true crosslinguistically, the more visible type of extra-systematicity in the sound system concerns phonotactics.)

While our findings largely corroborate the validity of the prototype of interjections postulated in scholarly literature – something that was to be expected since this prototype had been posited in light of robust cross-linguistic evidence – the results of our study also suggest certain refinements and provide (additional) support for features that have been postulated as prototypical only recently:

(a) Interjections expressing sensations may (often) have an iconic foundation. In Gorwaa the sensations that give rise to imitative interjections involve cold (imitation of shivering), good taste (imitation of smacking one's lips), bad taste, or smell (imitation of spitting). The same phenomenon is attested in many other languages, e.g., Polish, Arusa Maasai, Xhosa, and Hadza (Wierzbicka 2003, Andrason and Dlali 2020, Andrason and Karani 2023, Andrason et al. 2023b).

(b) Although infrequent, interjections may draw on the so-called baby talk, i.e., a register employed when talking to infants and toddlers; see [hadahadí#hadahadí] and [téeté#téeté].

(c) The glide/semivowel [j] is more common in interjections than [w]. The same phenomenon has been observed in Hadza, Arusa Maasai, and Xhosa (Andrason and Dlali 2020, Andrason and Karani 2023, Andrason et al. 2023b).

(d) Interjections exhibit a preference for high/extra-high tone on the first syllable (vowel or mora) and decreasing tonal pattern. A similar phenomenon is found in Hadza and Arusa Maasai (Andrason and Karani 2023, Andrason et al. 2023b). Accordingly, interjections would contrast with ideophones which either prefer low tone and low-tone harmony (see Xhosa; Andrason 2020a, 139) or do not exhibit robust tonal tendencies (see Dza and Mingang Doso; Andrason and Benson 2023). The high-tone-first tendency attested in interjections is arguably related to their articulatory force also visible in loudness.

(e) Should interjections include extra-systematic sounds, these are likely to be gutturals ([ħ] in Gorwaa) and clicks ([ǀ] and [ʘ]). The former is a manifestation of the |A| feature (i.e., the place of articulation as well as phonetic and phonological properties associated with *a*-type vowels, especially [a] (Backley 2011); see point (g) below). The latter complies with the commonness of the use of clicks in interactives in non-click languages, i.e., languages in which clicks do not belong to the standard phonetic inventory of sentence grammar. Indeed, from a typological perspective, clicks are the most common extra-systematic sounds found in interactives in non-click languages (cf. Andrason and Karani 2021, 2023).

(f) However, interjections in Gorwaa violate a pervasive cross-linguistic trend whereby, clicks found in interactives in non-click languages are "employed mainly as standalone or sequences of ... clicks" (Brenzinger and Shah 2023, 63). In these types of languages, clicks are expected to appear as "click-only utterances, i.e., as click speech sounds without accompanying vowels" (Brenzinger and Shah 2023, 60, Shah and Brenzinger forthcoming). Interestingly, despite being a non-click language, Gorwaa allows for the use

of clicks as genuine click consonants accompanied by vowels and consonants. See [ɵʔą̈ħ#pʰépʰepʰèpʰè], [ɵʔą̈ħ], and [ɵʔħą̈] that express bad, good, and sour taste, respectively.

(g) Interjections are characterized by the |A| place of articulation visible through the preference for *a*-type vowels and gutturality found in elements other than genuine vowels. The |A| feature has previously been only argued for Hadza (Andrason et al. 2023b drawing on Backley 2011). However, the common presence of *a*-type vowels and gutturals has also been observed in interjections in other languages: Biblical Hebrew (Andrason et al. 2020b), Xhosa (Andrason and Dlali 2020), and Arusa (Andrason and Karani 2023).

6 Conclusion

The present article studied the issue of the formal (phonetic and morphological) instability of interactives on the example of Gorwaa interjections. The analysis of 91 interjective constructions demonstrates that, in Gorwaa, interjections are highly unstable: the number of idiolectal interjections is nearly three times larger than the number of shared interjections, and the interjections of both sets form clusters, i.e., spaces composed of multiple variants connected through the family resemblance of a structural (form-related) and functional (meaning-related) type. The formal modifications are achieved through the strategies of prolongation, replication, alternation (of phones or one of the features found in a particular phone), and concatenation. These modifications are related to changes in meaning and the polysemy inherent to interjections. Consequently, the interjective category is modeled not as a set of discrete constructions, but rather as a dynamic, fuzzy, network of related (structurally and functionally) constructions.

Overall, the grammatical profiles of shared and idiolectal interjections are virtually identical – with the few minor differences being explained through the dissimilar grammaticalization of the members of the respective sets – and largely corroborate the validity of the prototype of interjections postulated in scholarly literature. Nevertheless, our study also suggests certain refinements. These include a preference for [j] over [w], a tendency toward (extra-)high tones and decreasing tonal patterns, the use of gutturals and clicks as the most common extra-systematic sounds and that of clicks as genuine consonants in non-click languages, the iconic foundation of some interjections and their relationship to babytalk, as well as the close relationship of interjections with the |A| feature and place of articulation (visible through the preference for *a*-type vowels and the gutturality found in elements other than genuine vowels).

Abbreviations

AUX	auxiliary
C	consonant
CAC	conative animal call
COND	conditional
FUT	future
IMPRS	impersonal
INTJ	interjection
OA	object agreement
N	nasal
PST	past tense
SA	subject agreement
SG	singular
V	vowel

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Data availability statement: Almost all data generated during this study are included in the article. Additional datasets are available from the corresponding author upon reasonable request. The recordings associated with this research are openly accessible through the audiovisual ELAR collection online. Readers may listen to the tokens of the interjections analyzed in this article by consulting the table immediately below, where the handles for the folders of the relevant recordings (.wav) and ELAN (.eaf) files archived in ELAR are as follows:
20230926b <http://hdl.handle.net/2196/2fbb2042-989a-4c0a-95aa-e072662116ad>
20230926d <http://hdl.handle.net/2196/720c0459-36e5-4af1-a062-c326fb91e22c>
20230926f <http://hdl.handle.net/2196/458894e3-61c7-4e4a-8345-d544cfb4c079>
20230928b <http://hdl.handle.net/2196/120e5908-ef32-48f1-9ef0-07aca66bac62>
20230928c <http://hdl.handle.net/2196/47066066-2aac-4aee-9164-40239263ceb6>
20230928e <http://hdl.handle.net/2196/ca904665-aa1b-4f14-b625-b8748cae99bc>.

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Appendix

Table A1: How to locate the interjections analyzed in this article

Token	Speaker(s)	Recording	Annotation (and approximate time) in the associated.eaf file
[ʔáa:h]	[CT]	20230928c	31 (13:17)
[ʔǎá:h]	[HK]	20230928e	14 (3:00)
[ʔǎh]	[BS]	20230926b	61 (25:21); 66 (29:00)
	[MH]	20230926d	33 (19:42)
	[DH]	20230926f	12 (5:14)
[ʔǎáa:]	[MH]	20230926d	24 (14:42)
[ʔáa:ʔ]	[CT]	20230928c	30 (12:19)
[ʔabá]	[HK]	20230928e	57 (18:02)
[ʔáh]	[MH]	20230926d	9 (6:43); 12 (9:20)
[ʔahá:]	[HK]	20230928e	60 (19:00)
[ʔáhʔ]	[BS]	20230926b	34 (12:28); 35 (13:17); 36 (13:51); 37 (14:30); 42 (16:33); 44 (18:08); 45 (18:48); 49 (20:16); 53 (21:59); 62 (26:17); 63 (27:06); 64 (27:51)
	[MH]	20230926d	32 (19:09)
[ʔǎhʔáhʔ]	[BS]	20230926b	33 (12:07)
[ʔǎhʔáhʔahʔàhʔǎhʔ]	[BS]	20230926b	11 (4:25)
	[CT]	20230928c	9 (2:46); 14 (4:31); 19 (7:08); 20 (7:59); 21 (8:19); 32 (13:45)
	[HK]	20230928e	46 (15:23); 53 (17:25)
[ʔǎhʔáhʔahʔàhʔ]	[BS]	20230926b	19 (6:23)
	[HK]	20230928e	19 (5:15); 20 (6:05); 23 (7:00)
[ʔáħʔ]	[DH]	20230926f	19 (7:25); 21 (7:58); 22 (8:27)
[ʔǎáa:ħ]	[MH]	20230926d	6 (2:08)
[ʔáħ]	[BS]	20230926b	21 (7:29)
	[CT]	20230928c	16 (6:00); 33 (14:20)
[ʔaħá]	[BS]	20230926b	20 (7:15)
	[HK]	20230928e	56 (17:54)
[ʔaħà]	[HK]	20230928e	44 (14:46); 58 (18:21)
[ʔǎħáħaħàħǎħ]	[CT]	20230928c	2 (1:07)
[ʔáħaʔ]	[CT]	20230928c	28 (11:05); 35 (15:11)
	[HK]	20230928e	26 (8:12); 42 (14:04); 43 (14:20); 50 (16:32); 61 (19:28)
[ʔáħaħʔ]	[BS]	20230926b	26 (8:52)
[ʔǎjájaj]	[BS]	20230926b	18 (6:05)
[ʔáwáʔ]	[HK]	20230928e	49 (16:11); 55 (17:41)
[ʔaʕáʔ]	[MH]	20230926d	46 (26:18)
[éèé#éèé#éèé]	[CT]	20230928c	1 (0:34)
[ʔéh]	[CT]	20230928c	15 (5:17)
[ʔehé:]	[HK]	20230928e	59 (18:45)
[ʔehě:]	[HK]	20230928e	31 (10:54); 35 (11:40); 38 (12:48)
[ʔehé:#hajjáʔ]	[HK]	20230928e	28 (10:10)
[f#tát]	[HK]	20230928e	22 (6:42)
[háa]	[HK]	20230928e	29 (10:28); 33 (11:15)
[hadahadí#hadahadí]	[CT]	20230928c	4 (1:31)
[háhahàʔ]	[HK]	20230928e	24 (7:26)
[hǎ̰j̰ᷟáj̰ᷟaj̰ᷟà̰ʔ]	[CT]	20230928b	11 (2:24)
[hé]	[MH]	20230926d	2 (0:54); 4 (1:28)
	[HK]	20230928e	32 (11:12); 34 (11:31); 62 (19:55)
[híi:]	[MH]	20230926d	34 (20:18)
	[HK]	20230928e	39 (13:16)
[hǐ̃í̃i:]	[BS]	20230926b	2 (0:47); 5 (1:49); 32 (11:41); 38 (15:07); 41 (15:58); 43 (17:12); 47 (19:20); 57 (22:51); 59 (23:53); 60 (24:51)
[hóo]	[HK]	20230928e	30 (10:30)
[hǒ̃óo:]	[CT]	20230928c	17 (6:35)

(Continued)

Table A1: *Continued*

Token	Speaker(s)	Recording	Annotation (and approximate time) in the associated.eaf file
[ɦáʔ]	[CT]	20230928c	34 (15:04)
[ɦáaà:]	[CT]	20230928b	14 (3:09)
[ilaʔ#hariseʔ]	[CT]	20230928c	22 (9:10)
	[HK]	20230928e	52 (17:12)
[ʔíĭ:]	[BS]	20230926b	16 (5:45)
	[DH]	20230926f	11 (4:57)
[ʔíjaʔ]	[BS]	20230926b	1 (0:31); 3 (1:21)
	[CT]	20230928b	1 (0:31); 4 (0:52)
	[HK]	20230928e	1 (0:25); 5 (1:05); 6 (1:20)
[ʔĭjájjaʔ]	[BS]	20230926b	7 (2:08)
	[DH]	20230926f	5 (1:31)
	[CT]	20230928b	6 (1:14)
	[HK]	20230928e	8 (1:49)
[ʔĭjájajàjà?]	[CT]	20230928b	2 (0:43); 3 (0:50); 5 (1:00)
[kǎkákakàkàʔ]	[CT]	20230928b	7 (1:23); 9 (2:04)
		20230928c	10 (3:10)
[kậkậkạ̀kậ̀kậ̀]	[CT]	20230928b	12 (2:41); 19 (4:49)
		20230928c	6 (1:56); 7 (2:21); 24 (9:46)
[lálálálálílílílílílí:]	[MH]	20230926d	25 (14:43)
[lílílílílílílílílílí]	[MH]	20230926d	39 (22:38)
[ḿhʔḿhʔmhʔm̀hʔm̀hʔ]	[CT]	20230928b	17 (4:17)
[ḿḿ:]	[MH]	20230926d	21 (13:27); 23 (14:26)
[ḿḿ]	[MH]	20230926d	18 (12:28); 19 (12:46)
[ḿʔ]	[MH]	20230926d	13 (9:41); 17 (12:13)
[ʔóoò:]	[MH]	20230926d	44 (24:35)
	[CT]	20230928c	13 (4:07); 23 (9:18); 27 (10:26); 29 (11:31)
[ʔő:]	[DH]	20230926f	3 (0:34); 23 (9:02)
[ʔoóő:]	[HK]	20230928e	54 (17:40)
[ʔőóo:]	[MH]	20230926d	27 (15:33); 29 (15:49)
	[DH]	20230926f	6 (3:35); 8 (4:17)
	[CT]	20230928c	12 (3:38)
[ʔojě:]	[BS]	20230926b	4 (1:35); 40 (15:20); 56 (22:25)
	[MH]	20230926d	1 (0:31); 3 (1:23); 5 (1:52); 36 (22:03); 37 (22:24); 38 (22:37); 40 (22:56); 41 (23:14); 42 (23:36); 47 (27:01)
	[DH]	20230926f	1 (0:22); 25 (10:18)
	[CT]	20230928c	26 (9:49)
	[HK]	20230928e	2 (0:45); 41 (13:46)
[ʔóje:]	[MH]	20230926d	43 (24:15)
	[DH]	20230926f	4 (1:31)
[ʔójé#oje#òjè#ǒjě]	[DH]	20230926f	2 (0:24)
[pháɦʔ]	[DH]	20230926f	15 (5:56)
[phǎpʰápʰapʰàpʰà]	[CT]	20230928b	22 (5:38)
[pʰĭpʰípʰípʰìpʰì]	[CT]	20230928c	18 (6:54)
[pĭpípípìpĭ]	[CT]	20230928b	21 (5:21)
[pű]	[MH]	20230926d	20 (13:05)
[q'áɦʔ]	[DH]	20230926f	20 (7:31)
[tát]	[BS]	20230926b	6 (2:02); 8 (2:35); 9 (3:10); 10 (3:59); 13 (4:56); 39 (15:15); 52 (21:28); 58 (23:22)
	[MH]	20230926d	7 (4:52); 8 (5:43); 10 (7:44); 11 (8:25); 14 (10:37); 16 (11:36); 22 (13:57); 30 (16:45); 35 (20:51)
	[HK]	20230928e	4 (1:04); 10 (2:11); 11 (2:22); 13 (2:40); 16 (3:26)
[tǎt]	[BS]	20230926b	15 (5:26); 17 (5:46); 24 (8:29); 28 (9:27); 30 (10:21); 31 (11:01); 50 (20:21); 51 (21:07); 54 (22:00); 55 (22:25)
	[CT]	20230928b	13 (2:54)
[tậtậtạ̀tậ̀]	[CT]	20230928b	10 (2:22)
	[HK]	20230928e	21 (6:06)

(Continued)

Table A1: *Continued*

Token	Speaker(s)	Recording	Annotation (and approximate time) in the associated.eaf file
[tắtátatàtàt]	[BS]	20230926b	27 (9:24)
	[CT]	20230928b	8 (1:51)
		20230928c	5 (1:55); 8 (2:25); 11 (3:13)
[tắttáttattàt]	[BS]	20230926b	12 (4:55); 14 (5:21); 22 (7:38); 23 (8:00); 25 (8:39)
	[HK]	20230928e	9 (2:09); 12 (2:23)
[tắttáttattàttàttàt]	[BS]	20230926b	29 (9:39)
	[MH]	20230926d	26 (15:07)
[téeté#téeté]	[CT]	20230928c	3 (1:29)
[tűtútutùtŭʔ]	[DH]	20230926f	9 (4:24)
[tűú]	[DH]	20230926f	10 (4:46)
[ʔű:]	[DH]	20230926f	16 (6:13); 17 (6:26)
[ʔűúu:]	[DH]	20230926f	7 (3:51); 13 (5:29)
	[HK]	20230928e	3 (0:46); 17 (3:55); 25 (7:56); 36 (12:09); 37 (12:15); 40 (13:43); 51 (16:52)
[ʔúuù:]	[MH]	20230926d	31 (17:08)
[ʔű:ʔú:ʔu:ʔ]	[DH]	20230926f	18 (7:10)
[ʔúf:]	[CT]	20230928b	23 (6:47)
[ʔűnúnunù]	[MH]	20230926d	28 (15:34)
[úsit]	[HK]	20230928e	45 (15:09); 48 (16:03)
[χáʔ]	[BS]	20230926b	46 (18:54); 48 (19:44); 65 (28:25); 67 (29:00)
[ʕaħáʔ]	[DH]	20230926f	24 (9:52)
	[HK]	20230928e	27 (9:39); 47 (16:01); 63 (20:17)
[Oʔa̰ħ]	[CT]	20230928b	15 (3:21)
[Oʔa̰ħ#pʰépʰepʰèpʰè]	[CT]	20230928b	16 (3:47)
[Oʔħa̰]	[CT]	20230928b	18 (4:37)
[l#tắtátattàt]	[CT]	20230928b	20 (5:06)
[l#l]	[MH]	20230926d	15 (11:12)
	[HK]	20230928e	18 (4:11)

Table A2: How to access the recordings from Harvey (2017) listed in Table A1

Recording	Handle
20230926b	<http://hdl.handle.net/2196/2fbb2042-989a-4c0a-95aa-e072662116ad>
20230926d	<http://hdl.handle.net/2196/720c0459-36e5-4af1-a062-c326fb91e22c>
20230926f	<http://hdl.handle.net/2196/458894e3-61c7-4e4a-8345-d544cfb4c079>
20230928b	<http://hdl.handle.net/2196/120e5908-ef32-48f1-9ef0-07aca66bac62>
20230928c	<http://hdl.handle.net/2196/47066066-2aac-4aee-9164-40239263ceb6>
20230928e	<http://hdl.handle.net/2196/ca904665-aa1b-4f14-b625-b8748cae99bc>