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K'abeena Phonology

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Abstract---The article provides descriptive analysis of the phonology of K'abeena, a language belonging to the Afro-Asian phylum, spoken in central Ethiopia. In this article, I identify 25 consonant phonemes and 3 loan phonemes. The loan phonemes are included as they are used in the current language's orthography. The language has five vowels. Vowel length and Gemination of consonants are phonemic in the language. With the exception of /h/ and /f/, which never geminate in the language, the rest of the consonant phonemes appear together to geminate. This only happens in the medial position of the words. Consonant clusters are allowed in word medial position with a maximum of two consonants. The phonological process identified in this article involves processes like assimilation, palatalization and deletion. Kabeena does not appear to be a pitch-accent language, but further research is needed to establish confirmed statements.

Keywords---K'abeena, phonology, Highland East Cushitic, Ethiopia.

1. Introduction

The word 'K'abeena' originates from Terabis in Arabian land and comes from the term 'Qabiila', meaning 'clan' or 'village' (Crass, 2003; Crass & Meyer, 2001). The K'abeena have their own geographical setting, language, history, culture. There are thirty-nine clans in K'abeena. According to the key language consultants, each clan has representative elders, which form an assembly known as Oget, to address economic, social, political, and cultural issues. They formulate rules and regulations, a customary law, known as *Boobane Galtitaa*. The K'abeena people, regardless of their wealth or status, are equally obligated to follow these rules formulated in the *Boobane Galtitaa* (Mohammedawol, 2007). They also have strong linguistic and cultural ties with the

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Halaba, T'ambaaro, Hadiyya, Sidama, Marako and Kambata. Culturally, they have been much influenced by neighboring Gurage and Oromo of *Macca* (Fekede, 1989; Nesredin, 2012). The majority of the K'abeena people live in the K'abeena special district within the newly established Central Ethiopia Regional State. The main town of the district is *Wolkitte*. The district is bordered by the Oromiya National Regional State in the north, *Cheba* district of the Gurage Zone in the south, *Gedebano Gutazer Wolene* and *Mubure Akilil* districts of the Gurage Zone in the east, and *Abeshge* district of the Gurage Zone in the west. There is high level of social interaction between the people in the area. As a result, most K'abeena are bilingual, fluent in K'abeena, and speak one more language like Oromo, Gurage, and Amharic, and many are multilingual in speaking K'abeena, Oromo, Gurage, and Amharic. Few can speak English, acquired through education. The K'abeena people can also understand Halaba, Hadiyya and Kambata though they are not geographically neighbors, but there is a genetic relationship among the languages (Feleke et al., 2020).

K'abeena has been taught as one of the subjects in elementary schools. K'abeena was used to write with a modified Geez-based orthography. Now, it has transitioned from modified Geez orthography to Latin-based orthography due to its inability to effectively write the language, which has consonant gemination and long and short vowels that are phonemic, and the request from the people (Girma, 2022). In his study Girma (2022), identified the these challenges of using geez-based orthography for the K'abeena language. The total population of K'abeena people is estimated at 373,597 (Tofik, 2014). In 2007 CSA reported, the Qabena number 52,000, in which most K'abeena people do not accept the number. Crass & Meyer (2001), stated that they're all Muslims. However; the current field data shows almost all K'abeena people are Muslims, there are very few people who follow Orthodox and protestant Christian. Their economy is based on mixed farming, that is, agriculture and animal husbandry (Nejat, 2013). They grow cereals, enset (false banana), wheat, *teff*, maize, sorghum, oil seeds, corn, coffee and fruits (Michael, 2021).

The K'abeena call themselves *K'abeena*, and their language *K'abeensina* or *K'abeensina Afoo*. In this paper, I use the term *K'abeena* to refer to both the language and community. K'abeena belongs to the HEC languages. Among the HEC languages (K'abeena, Halaba, Kambaata, T'ambaaro, Burji, Gedeo, Sidaama, Hadiyyaa and Libildo), Halaba is the closest language to K'abeena (Bizualem, 2006; Crass & Meyer, 2001; Treis, 2008). Menuta (2012), mentions that Kambaata is the closest language to K'abeena. Our position supports this in that K'abeena is closely related to Halaba, as evidenced by similar oral data from native speakers. They can easily understand it during communication with Halaba.

K'abeena is a scarcely studied language. The K'abeena Development Association (K'DA) (1988) studies present a brief analysis of phonology, morphology and syntax of the language. The study identifies 26 consonants and six vowel phonemes. Yigezu

(2005), also identifies 26 consonant phonemes and six vowel phonemes, when he developed modified Ethiopic or (Geez) based K'abeena orthography. Crass's (2003), work, written in German, is a comprehensive study on the language though I couldn't make use of his analysis because of language barrier. Orkaydo (2014), made a study on the grammatical aspects of the language.

This article provides an analysis of the phonological aspects of the K'abeena language. It is organized as follows: Following the introduction, the sound inventory of the language is presented in Section 2. Section three provides the phonotactic constraints of the K'abeena language. Sections four and five focus on free variation and the phonological processes of K'abeena, respectively. With the financial assistance of the K'abeena Woreda Education Office, data were gathered during field trips in 2022 and 2023.

2. Sound inventory

K'abeena, Halaaba and Kambaata are called the "z-dialects" of HEC languages (Leslau, 1980; Treis, 2008). Leslau (1980), reported in Treis (2008) states that one distinguishing characteristic of the Kambaata group—Kambaata, Halaaba, and K'abeena—is the phoneme /z/, which is the rationale behind their designation as the Z-dialect. In contrast, words from Hadiyya, Sidaama, and Gedeo have the phoneme /d/ in the "d-dialects" of HEC.

The sound inventory of K'abeena consists of consonant and vowel phonemes. Below, I first consider the inventory of consonant phonemes, and the vowel phonemes. Scholars who have studied K'abeena show a slight difference in the number of consonant phonemes. For example, Yigezu (2005) and KDA (1988:2 present 26 consonants while Orkaydo (2014), presents 25 consonants. The former authors include /p/ in their inventory while the latter excludes it for the reason that it is not found in the native words, and the loan words in which it appears have not yet been well integrated into the day to day vocabulary of the language. Crass (2007), also stated /p/ as a marginalized phoneme that may be introduced through loanwords from Ethiosemitic languages.

In this article, I propose 25 consonant phonemes and 3 loan phonemes in the language.¹ The consonants are produced along six places of articulation: labials, alveolar, alveo-palatals, palatals, velars and glottals; and seven manners of articulation: plosives, fricatives, affricates, nasals, glides as in Table 1. When two symbols appear in the same slot, the one on the left represents a voiceless sound, and the one on the right represents its voiced counterpart.

¹ The K'abeena orthography incorporates borrowed phonemes for writing non-K'abeena loan words.

Table 1:- Consonant phonemes.²

	Labial		Alveolar		Alveo-palatal		Palatal	Velar	Glottal
Plosives	(p)	b	t	d				k	ʔ
Nasals		m		n			ɲ	ŋ	
Fricatives	f	(v)	s	z	ʃ		ç		h
Affricates					tʃ				
Liquids				l					
Ejectives	pʔ		tʔ		tʃʔ			kʔ	
Implosives				(ɗ)					
Glides		w					y		

The description of each of the consonant phonemes is presented as follows. I use three parameters to describe the consonant phonemes: place of articulation, manner of articulation and condition of vocal cords.

2.1. Plosives

K'abeena has six plosives in its inventory: /b, p¹, t, d, k, g, ʔ/. In (1), I provide the description of each of the plosives, and illustrative examples.

- (1) /b/ voiced, bilabial, plosive
buudaa 'horn'
ʃombu 'lung'
- /p/ voiceless, bilabial, plosive
papayeta 'papaya'³
- /t/ voiceless, alveolar, plosive
teesu 'now'
- hoʃi tʃuuta* 'Saturday'
- /d/ voiced, alveolar, plosive
dagnudu 'run'
madilaa 'fat'

² I have followed the IPA rules with the exception of the symbol < y >, which is used to indicate the palatal glide /j/.

³ Note that /p/ is pronounced as /f/ or /b/ as the phoneme is not in the language (loan) eg. foolisa 'police' baastaa 'pasta'

/g/	voiced, velar, plosive
	<i>gamballa</i> 'black'
	<i>wogaa</i> 'history'
/k/	voiceless, velar, plosive
	<i>kesaa</i> 'for you'
	<i>keessaa</i> 'she will pick'
/ʔ/	voiceless, glottal, plosive
	<i>t'eʔisu</i> 'deduction'

2.2. Nasals

K'abeena has three nasal phonemes: /m, n, ɲ/. Orkaydo (2014), recognizes the nasal phoneme /ɲ/, but due to its marginality in the basic vocabulary he collected during his field visits, he suggests the need for further investigation. Data from the field visits from 2022-2023 indicate the availability of the phoneme in a large number of vocabularies. This suggests that the phoneme is a fully-fledged phoneme in the language. Indeed, this phoneme is also found in Halaaba (Fekede, 2012) and Kambaata (Treis, 2008). In (2), I provide the description and illustrative examples for the nasal phonemes in K'abeena.

(2)	/m/	voiced, bilabial, nasal
		<i>mut'a</i> 'raw (for meat or wet)'
		<i>wodɟɟaamu</i> 'bull'
	/n/	voiced, alveolar, nasal
		<i>naʔu</i> 'we'
		<i>unuunaa</i> 'breast'
	/ɲ/	voiced, palatal, nasal
		<i>summaɲaa</i> 'poisoned'
		<i>gambeɲnaa</i> 'incidental'

2.3. Fricatives

K'abeena possesses six fricative phonemes. These are /f, s, z, ʒ, ʃ, h/. Except the phoneme /ʒ/, K'abeena has the same phoneme with other genetically related languages such as Hadiyya (Sibamo, 2015), Sidama (Kawachi, 2007), T'ambaaro (Ongaye, 2021), and Gedeo (Wolde, 2015). The description and illustrative examples of the fricative phonemes are given in (3).

(3)	/f/	voiceless, labiodental, fricative
		<i>faangaa</i> 'thief'
		<i>buffiyyoo</i> 'boil'
	/s/	voiceless, alveolar, fricative
		<i>sasuu</i> 'three'
		<i>sannta</i> 'nose'

/ʃ/	voiceless, palatal, fricative
	<i>ʃooluu</i> 'four'
	<i>biifaa</i> 'red'
/z/	voiced, alveolar, fricative
	<i>zurmeʃuu</i> 'finger'
	<i>horzata</i> 'hair on body part'
/h/	voiceless, glottal, fricative
	<i>hikooraa</i> 'March'
	<i>kobaa</i> 'strange'
/ʒ/	voiced, palatal, fricative
	<i>ʒuma</i> 'edible fruit, rat'
	<i>mayyaʒoʔi</i> 'puberty (for male)'

2.4. Affricates

K'abeena has two affricate phonemes: /tʃ/ and /dʒ/. These affricate phonemes also exist in other similar HEC languages. I provided the description and illustrative examples for the affricates in (4).

(4)	/tʃ/	voiceless, palatal- alveolar, affricate
		<i>manʃuta</i> 'woman'
		<i>meʃaba</i> 'grandchild'
	/dʒ/	voiced, alvio-palatal, affricate
		<i>dʒibbaa</i> 'mat'
		<i>sacʒʒuu</i> 'thirty'

2.5. Liquids

K'abeena has two liquids. These are /l, r/. Both liquids are voiced phonemes. The descriptions with examples for these phonemes are provided in (5).

(5)	/l/	voiced, alveolar, liquid
		<i>labbaa</i> 'boy'
		<i>balata</i> 'accident'
	/r/	voiced, alveolar, liquid
		<i>roraa</i> 'big'
		<i>buuru</i> 'butter'

2.6. Ejectives

K'abeena has four ejective phonemes: /p', t', tʃ', k'/. All the ejectives are voiceless. The four ejectives are found in the other HEC languages. In (6), I provided the descriptions of the phonemes with illustrative examples.

(6)	/p'/	voiceless, bilabial, ejective
		<i>alap'p'uu</i> 'playing'
		<i>bup'p'a</i> 'egg'

/t'/	voiceless, alveolar, ejective
	<i>t'ulungita</i> 'finger nail'
	<i>sint'aa</i> 'heel'
/tʃ'/	voiceless, palatal, ejective
	tʃ <i>iwuta</i> 'bird'
	mitʃ <i>'ata</i> 'ear'
/k'/	voiceless, velar, ejective
	k'ek'uu 'blood'
	k'ook'a 'blind'

2.7. Glides

K'abeena has two glides. These are /w, y/. These glides are present in many Cushitic languages. The descriptions and illustrative examples are given in (7).

(7)	/w/	voiced, bilabial, glide
		waadʒʒuu 'fear'
		halawaa 'hut'
	/y/	voiced, palatal, glide
		yeburu 'lip'
		ossaye 'sleep'

2.8. Implosive

K'abeena has one implosive in its consonant inventory: /ɖ/. The description and illustrative examples are provided in (8).

(8)	/ɖ/	voiced, alveolar, implosive
		heldu 'paint'
		ledemu 'unfermented milk (not yogurt)'
		budaa 'wild fruit sp.'

This implosive is found in many Cushitic and Omotic languages of Ethiopia. Among the HEC languages, Gedeo (Wolde, 2015) and Sidama (Teferra, 2019), (Kawachi 2007) have this phoneme. Languages like Konso (Orkaydo, 2013) and Ts'amakko (Savá, 2005) have a series of four voiced implosives, of which /ɖ/ is one.

2.9. (Near) minimal pairs

K'abeena shows certain (near) minimal pairs in its vocabulary. These (near) minimal pairs support the phonemic status of some of the phonemes presented in Table 1. Below, the consonant phonemes that appear in the (near) minimal pairs are given.

(9)	/b/and /w/	
	beesu	'erase/delete'
	weesu	'to make up a bed'

/m/ and /w/	<i>muldu</i>	‘rip, red meat’
	<i>wudu</i>	‘yonder’
/t/ and /d/	<i>baatu</i>	‘to pay’
	<i>baadu</i>	‘country/ to crawl’
/n/ and /m/’	<i>ani</i>	‘I’
	<i>ami.</i>	‘Come (2SGM)’
/h/ and /z/	<i>keiiba</i>	‘yours (SG)’
	<i>ke’iiz’a</i>	‘cold’
/ʃ/ and /dʒ/	<i>waaffuu</i>	‘to answer’
	<i>waadʒuu</i>	‘white, fright’
/l/ and /r/	<i>walu</i>	‘other’
	<i>waru</i>	‘insert’
/k/ and /g/	<i>kanʃuu</i>	‘to peel’
	<i>ganʃuu</i>	‘mucus’
/k’/and /g/	<i>ke’ook’a</i>	‘blind’
	<i>gook’a</i>	‘unripe’
/m/ and /f/	<i>t’uma</i>	‘good’
	<i>t’ufa</i>	‘door’
/t/ and /t’/	<i>tuma</i>	‘onion, aim’
	<i>t’uma</i>	‘good’
/w/ and /y/	<i>warraa</i>	‘snake’
	<i>yaraa</i>	‘bad, hardly sick’
/tʃ/ and /t/	<i>itʃoo</i>	‘he ate’
	<i>ittoo</i>	‘she ate’
/s/ and /ʒ/	<i>suma</i>	‘seedling of false banana’
	<i>ʒuma</i>	‘edible fruit, rat’

2.10. Gemination

With the exception of the glottal stop /ʔ/, the rest of the consonant phonemes in K'abeena appear geminate, either in lexical items or at morpheme boundary. Like other members of the Cushitic language family, gemination is phonemic in K'abeena. The available examples from the recorded data include those in (10).

(10)	/b/ and /bb/	<i>dubuu</i>	'tail'
		<i>dubbuu</i>	'forest'
	/t/ and /tt/	<i>tuma</i>	'onion, aim'
		<i>tumma</i>	'garlic'
	/d/ and /dd/	<i>idaa</i>	'debt'
		<i>iddaa</i>	'time given for a divorced woman to be able pregnant'
			to marry another man without being
	/g/ and /gg/	<i>wogaa</i>	'history'
		<i>hoggaa</i>	'branch of pillar (of traditional house)'
	/m/ and /mm/	<i>sumii</i>	false banana sp.
		<i>summii</i>	'poisonous'
	/s/ and /ss/	<i>osuta</i>	'children'
		<i>ossuta</i>	'sleep'
	/h/ and /hh/	<i>waabuu</i>	'hatred'
		<i>waabbuu</i>	'becoming bored'
	/tʰ/ and /tʰtʰ/	<i>mut'a</i>	'wet'
		<i>mut't'a</i>	'sharp'
	/kʰ/ and /kʰkʰ/	<i>wok'aa</i>	false banana sp.
		<i>wok'k'aa</i>	'road'
	/dʒ/ and /dʒdʒ/	<i>waadʒuu</i>	'white'
		<i>waadʒdʒuu</i>	'white one'
	/l/ and /ll/	<i>laluu</i>	'cattle'
		<i>lalluu</i>	'being seen'
	/r/ and /rr/	<i>k'aruu</i>	'sharpen'
		<i>k'arruu</i>	'deforested land'
	/w/ and /ww/	<i>gawu</i>	'to call'
		<i>gawwu</i>	'to fool'

2.11. Vowel phonemes

K'abeena, like most Cushitic languages, has a typical five-vowel system consisting of i, e, a, o, and u, with long vowels indicated by doubling the same vowel. The mid, central, and unrounded vowel /ə/ is also claimed as the K'abeena phoneme. For example, [Fekede \(1989\)](#), added the phoneme /ä/ to these five vowel phonemes. This phoneme was considered an allophone of /a/ by [Shimeles \(1988\)](#), occurring only

wordmedially between consonants, but it can also occur wordfinally like the other vowels of K'abeena, as Fekede's claim. It also constitutes minimal pairs with /a/ (Fekede, 1989). Data from Fekede (1989), Shimallis (1988), and our data are compared in Table 2.

Table 2: The vowel phoneme /ä/ from previous data and current data

Fekede's (1989:7)	present data	Shimallis (1988: 8)	present data
<i>habbu</i> 'forgetting'	<i>habu</i> 'forgettin	<i>gulubitä</i> 'knee' <i>ʔangätä</i> 'hand'	gulubita 'knee'
<i>häbbu</i> 'covering'	g' <i>abbu</i> 'roof'	<i>lokkätä</i> 'leg' <i>mancütä</i> 'woman'	angata 'hand'
<i>mat't'u</i> 'hiding' <i>mät't'u</i> 'gathering'	<i>mat'u</i> 'picking'		lokkata 'leg' mantʃuta 'woman'

Shimeles (1988), might consider /ä/ as an allophone of /a/ occurring in the same environment as the later phoneme, because most of the HEC languages do not have this vowel as a phoneme. However, the use of /ä/ as a full-fledged phoneme in this language may be due to the influence of the surrounding Gurage languages, which have this vowel as a phoneme (Fekede, 1989). Crass (2007), who studied grammatical borrowing in K'abeena, strongly supported Shimeles's argument by saying that "... [ä], which I do not consider to be a phoneme in K'abeena; rather, it is a phonetic variant of /a/." From the current field based data, I identify a set of five short vowel phonemes of K'abeena, each with a long counterpart. The following table presents them.

Table 3: Vowel phonemes

	Front	Center	Back
High	i	ii	u uu
Mid	e	ee	o oo
Low		a aa	

2.11.1. Descriptions of vowels

Three parameters are used to characterize the vowel phonemes in K'abeena: tongue height, part of tongue involved, and condition of lips. Vowels are classified as high, mid, and low along the height of the tongue. Additionally, they are separated into front, middle, and back along the tongue part parameter (Davidson, 2006; Bermúdez-Otero & Honeybone, 2006). Lastly, the vowels are classified as rounded or unrounded based on the state of the lips. The description of short vowels with illustrative

examples is given in (11). The current data shows, the vowel /ə/ is not in the language, and has not been included in this article.

- | | | | |
|------|-----|------------------------------|------------------|
| (11) | /i/ | high, front, unrounded vowel | |
| | | <i>himu</i> | ‘to dig’ |
| | | <i>fūlu</i> | ‘to split’ |
| | /e/ | mid,-front, unrounded vowel | |
| | | <i>k’eguu</i> | ‘blood’ |
| | | <i>beŋ’^oa</i> | ‘friend’ |
| | /a/ | low, center, unrounded vowel | |
| | | <i>k’oŋ’^oaa</i> | ‘tortoise’ |
| | | <i>andʒan</i> | ‘smell’ |
| | /u/ | high, back, rounded vowel | |
| | | <i>gulubita</i> | ‘knee’ |
| | | <i>duubu</i> | ‘to be satiated’ |
| | /o/ | mid, back, rounded vowel | |
| | | <i>gofimmo</i> | ‘last’ |
| | | <i>gobu</i> | ‘to sew’ |

In (12), I provide illustrative examples of long vowels.

- | | | | |
|------|------|---------------------------|--------------|
| (12) | /ii/ | <i>t’urii</i> | ‘dirty’ |
| | | <i>hiir</i> | ‘unfastened’ |
| | /ee/ | <i>reeto</i> | ‘die (3SGF)’ |
| | | <i>isee</i> | ‘she’ |
| | /aa/ | <i>k’oŋ’^oa</i> | ‘tortoise’ |
| | | <i>keessaa</i> | ‘cheese’ |
| | /uu/ | <i>bokkuu</i> | ‘house’ |
| | | <i>hikku</i> | ‘that’ |
| | /oo/ | <i>roorabaa</i> | ‘It is big’ |
| | | <i>moolaa</i> | ‘dry’ |

The substitution of one short vowel for another in the same position may result in the difference in semantic value. Short vowels occurring in the contrastive distribution are given in (13).

- | | | | |
|------|-------------|-------------|-------------------|
| (13) | /a/ and /i/ | <i>ati</i> | ‘you (SG)’ |
| | | <i>iti</i> | ‘eat (2SG.M)’ |
| | /a/ and /u/ | <i>soba</i> | ‘sorghum’ |
| | | <i>sobu</i> | ‘to send’ |
| | /a/ and /o/ | <i>hasu</i> | ‘to search’ |
| | | <i>hosu</i> | ‘to stay at home’ |
| | /e/ and /u/ | <i>eebu</i> | ‘bring’ |
| | | <i>ubu</i> | ‘to fail’ |

/e/ and /o/	<i>rak'aa</i>	'meat'
	<i>rok'aa</i>	'semi-liquid'
/o/ and /i/	<i>hogu</i>	'to stir'
	<i>higu</i>	'to go up'

Like the short vowels, long vowels may occur in a contrastive distribution. The phenomenon in long vowels is, indeed, rarer than it is in short vowels. In (14), I provide available instance.

(14)	/ee/ and /ii/	<i>isee</i>	'she'
		<i>ʔisii</i>	'him'
	/oo/ and /uu/	<i>fooluu</i>	'four'
		<i>fuuluu</i>	'to finish'
	/oo/ and /ii/	<i>foolii</i>	'breath'
		<i>fiilii</i>	'different from others'

2.11.2. Vowel length

Vowel length is phonemic in the K'abeena language just like gemination (Crass, 2001; Moges, 2005; Ongaye, 2014). This phenomenon is quite common among Cushitic languages.

(15)	/i/ and /ii/	<i>mini</i>	'house'
		<i>miinita</i>	'face'
	/e/ and /ee/	<i>elu</i>	'hit'
		<i>eelu</i>	'damming water'
	/a/ and /aa/	<i>assuu</i>	'to work'
		<i>aassuu</i>	'to give'
	/u/ and /uu/	<i>t'urii</i>	'dirty'
		<i>t'uurii</i>	'inheritance from parents'
	/o/ and /oo/	<i>gobuu</i>	'to sew'
		<i>goobuu</i>	'being victorious'

3. Phonotactic constraints

This section discusses the phonotactic restrictions of the K'abeena phonological structure. It primarily focuses on the distribution and occurrence of phonemes. In terms of distribution, I found out that all consonant phonemes can appear at the middle. Among the consonant phonemes, the following shows cluster of consonants in K'abeena.

3.1. Clusters of Consonants

Only in the middle of words, the K'abeena permits consonant clusters. Moreover, only two consonants can occur at a time. Consonant clusters can be classified as either

having the different consonant sequences in the language. K'abeena is a member of Highland East Cushitic, and as such, this general consonant cluster rule also applies to it as shown in (16).

- (16)
- | | | | |
|----|--------------------------|---------------------|---|
| a. | nasal + plosive | | |
| | /nb/ | <i>busunbusu</i> | 'decaying' |
| | /nk/ | <i>lankannaa</i> | 'a valued dress' |
| | | <i>iinkuta</i> | 'tooth' |
| | /nd/ | <i>landaa</i> | a type of cloth |
| | /ng/ | <i>angete</i> | 'breakfast' |
| | /mb/ | <i>gimbaaraa</i> | 'forehead' |
| b. | nasal + affricate | | |
| | /ndʒ/ | <i>andʒaa</i> | 'saliva' |
| c. | nasal + fricative | | |
| | /nf/ | <i>hanfaruu</i> | 'bed' |
| | /nz/ | <i>ginzʒiraa</i> | 'saliva' (Ongaye, 2014:30) |
| d. | nasal + ejective | | |
| | /ntʔ/ | <i>sint'aa</i> | 'heel' (Ongaye, 2014: 30) |
| e. | liquid + fricative | | |
| | /rz/ | <i>horzʒata</i> | 'small hair on body' |
| f. | liquid + plosive | | |
| | /lb/ | <i>gulbita</i> | 'knee' |
| | /rb/ | <i>horbaati</i> | 'dinner' |
| g. | glottal stop + liquid | | |
| | /ʔr/ | <i>wuriʔeʔruu</i> | 'packing for churning milk traditionally' |
| | /ʔl/ | <i>maʃuʔlaa</i> | 'sorghum' |
| h. | /ʔm/ | <i>ʃuʔmuu</i> | 'hand shaking' |
| i. | glottal stop + affricate | | |
| | /ʔʃ/ | <i>feleʔʃuta</i> | 'she-goat' (Ongaye, 2014: 30) |
| j. | fricative + liquid | | |
| | /ʃl/ | <i>kaʃleta</i> | 'charcoal' (Ongaye, 2014: 30) |
| | /rm/ | <i>zʒurmeʔitʃʃu</i> | 'finger' |

In general, neither sequences of identical nor different consonants are allowed at the initial and final positions within a word. In addition, words are always formed with a consonant and a vowel. Hudson (1976), lists the consonant clusters of HEC languages as follows with regard to the grouping of various consonants: "[...] If there are two distinct consonants, the first is a sonorant and the second is an obstruent. The exception is clusters of the glottal stop plus sonorant". Except for Hadiyyaa and slightly for Kambaata, ending word construction with vowels is the nature of HEC languages.

4. Syllable structure

A syllable in the K'abeena is composed of an onset, nucleus and coda though [Orkaydo \(2014\)](#), claimed that only the nucleus forms a syllable in the language. Ongaye (2014:36) discussed six syllable templates for K'abeena, (17).

(17)	V	afoo	'mouth'
		unuunaa	'breast'
	VC	arrabita	'tongue'
		andʒaa	'saliva'
	CV	kalta	'axe'
		zizaa	'bee'
	CVV	kofuu	'upper arm'
	CVC	zizaa	'bee'
		k'ilbaa	'hair'
	CVVC	zoobboo	'lion'
		hooltʃuta	'ewe'

If we follow these structures, we miss other specific structures like those in (18) that the language also possesses. There are words like *iibokkekuu* 'house' and *iinkuta* 'teeth' that contain syllable structures of VV and VVC.

(18)	VV	<i>iibok.kuu</i>	(VV.CVC.CVV)	VVC	<i>iinku.ta</i>	(VVC.CV.CV)
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The syllable structures CV, CVV, CVC, CVVC are considered for HEC languages (Treis, 2008 for Kambaata; Sibamo, 2015 for Hadiyya; Schneider, 2007 for Halaaba) as syllable structures. [Yigezu \(2005\)](#), provides four syllable template (CV, CVV, CVC, CVVC) for Ka'beena. His analysis shows that Ka'beena syllable templates quite fit into the syllable templates of the HEC languages.

Our analysis for the K'abeena language also shows agreement with the main HEC language syllable structures: CV, CVV, CVC CVVC. In (19), I provide some illustrative example of the structure. Note that, the dot (.) between two syllables to represent syllable boundary; moreover, syllables in boldface are examples of the given syllable structure.

(19)	CV.CVV	<i>le.wuu</i>	'six'	
		hool.tʃu.ta	'ewe'	
		ar.ra.bi.ta	'tongue'	(Ongaye, 2014 : 36)
	CVC.CVV	ton.nuu	'ten'	
	CVV.CV	koo.ru	'pot'	
		kal.taa	'axe'	(Ongaye, 2014 : 36)
		a.fo	'mouth, language'	(Ongaye, 2014 : 36)
	CVVC.CVV	k'es.saa	'cheese'	
		zoob.boo	'lion'	(Ongaye, 2014 : 36)

4. Free Variation

Free variation in K'abeena is rare, but it can occur with both consonants (20a) and vowels (20b) and sometimes even it occurs with a long and its short substitute. Formulating a systematic rule to capture this phenomenon is challenging. I provided the following, which I have come across as follows:

- (20) a goge skin
 gok'e
 k'ombata testicle
 kombataa
- b dist'ita 'boiler'
 dist'ite
- k'aawwe coffee
 k'aawwaa

During the data collection, I realised that one of the language consultants consistently uses the lexical items with the final /e/ instead of /a/. It seems that the lexical items in the free variation are the result of regional dialects. However, this is beyond the scope of this article, and thus further study is required for a solid conclusion.

5. Phonological processes

Phonological processes like assimilation, epenthesis, deletion, paltalisation, and deletion have been discovered in the language. This article does not provide a detailed analysis of the phonological process, but will provide some examples from data collected (Golestani & Zatorre, 2009; Feleke et al., 2020).

5.1 Assimilation

Neighboring consonants influence each other, resulting in the sharing of phonetic features. When suffixes with palatal fricatives or affricates are attached to verb roots ending with alveolar plosives or affricates, the fricatives completely assimilate to the following fricative, as shown in the example (21a). Partial assimilation occurs when the alveolar nasal occurs before labio-dental fricatives and becomes a labio-dental feature, as illustrated in (20b).

- (20) a. roos- 'to learn'
 rooʃʃat 'learning'
- sazuu- 'to advise'
 saʒʒata 'advice'

suggested that the language doesn't look a pitch-accent language, but further research is needed to confirm this.

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Abbreviation and symbols

HEC	Highland East Cushitic
K'DA	K'abeena Development Association
M	masculine
PF	perfective
PL	plural
Q	question
SG	singular
sp.	species
1	first person
2	second person
3	third person

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