

Clicks in Eastern Khoe languages: The case of Tsua

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Abstract

This paper discusses clicks in Tsua, an endangered Khoisan language spoken in the south-western parts of the Central District of Botswana. Tsua is situated in the Eastern Kalahari Khoe zone where languages show a systematic attrition of clicks in their phonology albeit Tsua presents an elaborate consonant system made up of non-click and click inventory. The paper seeks to respond to the question, 'What is the nature of the phonology of Tsua?' The paper goes on to account for the phonological characteristics of this language. The discussion seeks to demonstrate that while clicks in this language remain fully phonemic as in other related languages, they are fewer and have fewer complex accompaniments when compared to those of related languages to the west. The paper further gives an account of the retention of preferred clicks. Furthermore, the paper gives an account of the phonetic mechanisms involved in the replacement and loss of clicks. The paper is an important contribution to the sub-fields of Khoisan phonology and typology. In addition, the paper contributes to the dynamics of language endangerment and loss. It shows that language loss processes may be observed among the Eastern Kalahari Khoe languages to which Tsua belongs and argues that this is what sets these languages apart from the Western Kalahari Khoe languages.

Keywords: Click loss, endangered language, Khoisan, phonology, Tsua language

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Introduction

In the 5th Century BC, the Greek historian Herodotus described the language of a group of cave-dwelling Ethiopians in this manner: “Their speech is like no other in the world: it is like the squeaking of bats” (<http://www.bbc.com/future/story/20170525-the-people-who-speak-in-whistles>). This pseudo-linguistic attitude has for many years impeded the scientific study of the phonology of clicks. Where clicks are used to participate in word formation they function phonemically. This information is important in that 1) it proves that clicks were once very widespread in Africa, from Ethiopia to Southern Africa, and 2) that Africa is a click sounds continent. No other continent has clicks sounds functioning as phonemes. In the present age, Duhalo (a Somali dialect), Sandawe and Hadza in Tanzania, Central Khoe languages, Taa languages, and Kx’a languages in Southern Africa use clicks in their phonemic inventory. Much of what is known about click languages such as the Nguni and Okavango Bantu languages was initiated by southern Africa linguists in the 19th Century. Their work has resulted in a coherent classification of Khoisan languages into three language families as in Figure 1 below (adapted from Güldemann, 2014; Vossen, 2013; Güldemann & Vossen, 2000).

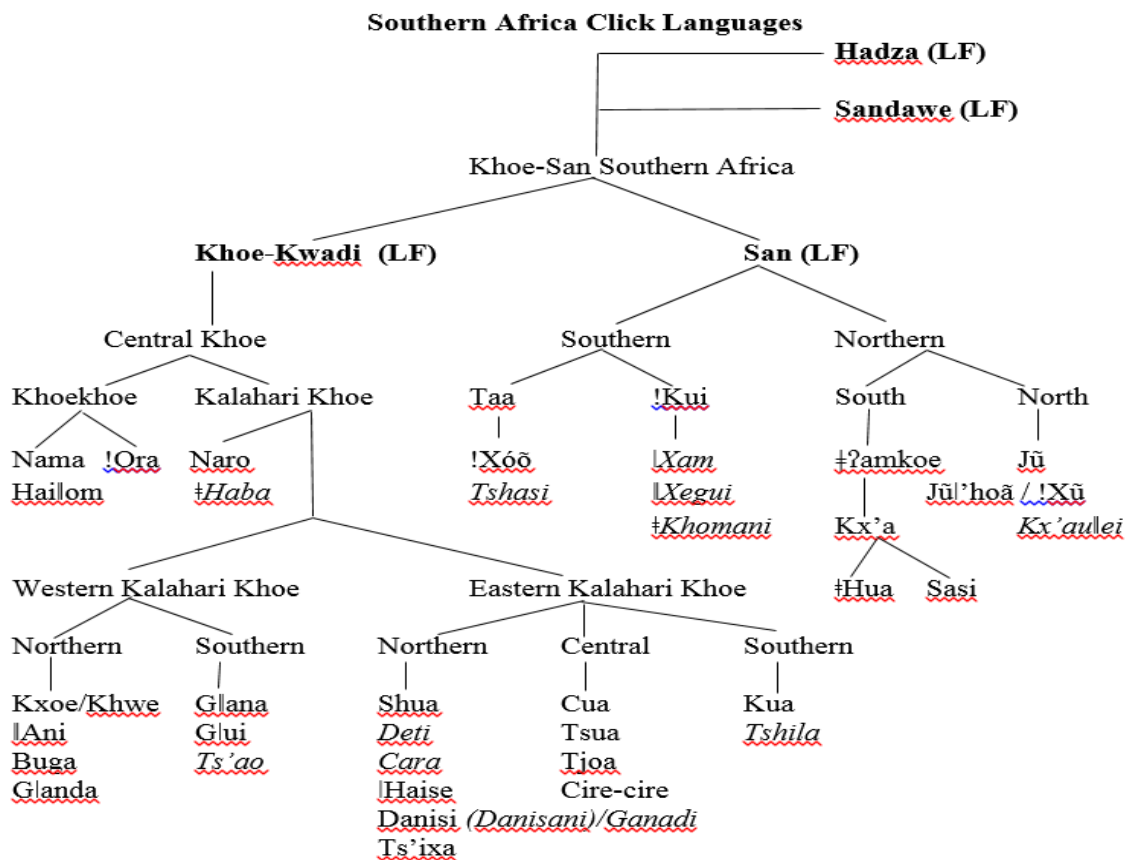


Figure 1: Click languages of Africa (the italics indicate languages that are subsumed under others or dialectal variants)

Over the years, some of these languages have become extinct and more are succumbing to this tragic end. In Botswana, where click languages have many varieties, and are spoken by small communities that are no longer capable of revitalising their cultures and languages.

Tsua language

The Tsua language discussed in this article is spoken in the southern parts of the Central District, around the settlements of Moralane, Kodibeleng, Mosolotsane, and the Western Sand Veldts (Chebanne, 2014; Mathes, 2015). The use of Tsua language is determined by language attitudes in the speech community. The less confident Tsua speech members are, the more they shift to Setswana, and this happens more frequently among the youth. Setswana is the national language used in education and public media (radio, newspapers, and health information). Sengwato, a Setswana variety, is the language of ethnic majority in the Central District. The language shift experienced by the Tsua is a result of the fact that over the years these people have suffered ethnic and socio-linguistic marginalisation as stronger ethnic/linguistic groups did not tolerate the use of their languages (Batibo, 2015; Chebanne, 2014).

The current areas of Tsua habitations are relocation settlements (Cassidy et al., 2001) and this situation has also resulted in cultural and linguistic displacement, cultural, assimilation, and exploitation and abuse by dominant groups (cf. Traill & Vossen, 1997). Under this sociolinguistic situation, the Tsua tradition, culture and social history are lost, and the language varieties of the language indicate how this displacement led to aspects of the language being lost and this has created confusion in the grammatical structures and the lexicon of the language. Currently, only the older generation speak of the language consistently and can tell the differences among the different speech communities (Chebanne, 2014). It is within this background that the Tsua language can be best characterised as highly endangered. Therefore, the documentation of its phonology is critically important as it informs on the evolution of this language.

The phonetics and phonology of a click

Clicks are stops in which the essential component is the rarefaction of air enclosed between two articulatory closures formed in the oral cavity, so that a loud transient is produced when the more forward closure is released. In the production of clicks, the initiation of the air stream is in the oral cavity and is called the velaric airstream mechanism. Clicks are therefore therefore velaric consonants. It is always ingressive and cannot be used for sounds other than stops and affricates. The presence of a posterior closure is an essential component of a click, and every click has both a tip or blade (or lip) action determining the type of click, and also an accompanying velar or uvular articulation (Ladefoged & Maddieson, 1996, pp. 246-7). In click languages these sounds are a regular part of the consonant system, and therefore they are phonemic; that is, they participate in the formation of meaningful lexical forms (words). Clicks are therefore sound segments that constitute fundamental sounds in the formation of words in a language (cf. Ladefoged & Maddieson, 1996, p. 1). As part of the normal sound inventory in languages that possess them, clicks are of critical importance in communication.

Table 1: Clicks and their phonetic features in Khoisan

	Abrupt Release	Noisy Release
Retraction of tongue	! (alveolar) !! (alveolar retroflex)	⊙ (bilabial) (lateral)
No tongue retraction	‡ (palatal)	(dental)

From Table 1 of click phonetic features, the following should be noted: 1) not all Khoisan languages have all the complete set of clicks; 2) not all languages have similar click release or accompaniments; and 3) not all languages have similar click accompaniment strategies (Traill & Vossen, 1997), and retroflex clicks are found in Ju languages of Botswana. There have been some divergences in the study and classification of click sounds (and the alveolar and palatal clicks have even presented contradictory description and classification). Recent research in phonetics and the use of palatograms have settled the articulatory features of click and facilitated their classification in Khoisan, Nguni and Kavango languages (Traill & Vossen, 1997).

(1) Clicks in Khoisan

Bilabial	Dental	Alveolar	Palatal	Lateral
⦿		!	‡	

This classification of clicks summarizes the more observable or perceptible features (primary places of articulation), but it should be noted that phonetically there are many aspects to their articulations. The location of a click and its features, just like any sound, are determined on the basis of the place of closure at the moment of articulation. According to Ladefoged & Maddieson (1996, p. 247) no known language has more than these five click types. In Khoisan, !Xõõ has the most complex click system and has all the five fundamental clicks (Vossen, 2013; Traill, 1997).

Objectives of the paper

The paper aims to present click phonology and typology of the Eastern Kalahari Khoe languages within the Khoisan language family, with special reference to Tsua. The paper further defines clicks in Eastern Kalahari Khoe languages and their phonotactics and acoustics. The paper seeks to demonstrate that clicks are fully phonemic and therefore part of the regular sounds used in speech. The paper further discusses click loss in these languages. The discussion of click loss leads to the identification of replacement clicks types. One crucial point that is made is that linguistic and phonological dynamics demonstrate instances of language endangerment and loss. The discussion therefore gives a partial account of the phonology of Tsua and therefore seeks to contribute to the typology of the phonology of Eastern Kalahari Khoe languages. The discussion of this paper also seeks to corroborate studies by Traill & Vossen (1997), and Chebanne (2014) who looked at the phenomenon of click losses in Eastern Kalahari Khoe languages. The study also accounts for the reasons why younger speakers confuse the acoustics of some clicks. The assumption made in this discussion, therefore, is that though the Tsua language still uses clicks in its phonology, it is in the processes of losing some of them as it is a highly endangered language which faces a serious threat from its contact with Setswana. The objective is to situate Tsua within the Eastern Kalahari Khoe group of languages.

Data collection and research methods

The data collection from the speakers of Tsua was first done by Mathes & Chebanne (2012 – 2016)² under the University of New York funding¹. In 2015 Chebanne and others undertook a survey sponsored by the Office of Research and Development (University of Botswana) on the country-wide research project titled ‘Mapping Khoisan Languages’. From 2015 to 2016, Chebanne & Dlali (2017) established that there was lexical borrowing from other languages by speakers of Tsua as evident in the data they collected as well as from Mathes and Chebanne’s (2012 – 2016) lexical data base. Nakagawa’s (2006) study on the aspects of the phonetic and

phonological structure of the Glui language has provided guidance on the transcription of the lexical items. The research questions investigated are 1. How does the phonology of Tsua compare to those of related languages within the Eastern Kalahari Khoe zone? 2. What are the phonological characteristics of its clicks? 3. What motivates click reduction or loss?

Tsua consonantal sound system

Güldemann (2014) research on Khoisan linguistic has contributed significantly to the understanding of the occurrence of clicks in languages that use them. This broad understanding was also preceded by Güldemann & Vossen (2000) who provided a comprehensive study of the Khoisan. Much of the groundwork that has facilitated research on the Tsua by Mathes (2015), and Mathes & Chebanne (2018) has been guided by Nakagawa (2006) who did a study on the aspects of the phonetic and phonological structure of the Glui language. Other relevant researchers on these languages are Fehn (2014) who studied the grammar of Ts'ixa. An investigation of the phenomenon of click replacement in Khoe was undertaken in a pioneering study by Traill (1986).

The Tsua language presents an elaborate consonant inventory (Mathes, 2015; Mathes & Chebanne, 2018). This consonant system has labial, alveolar, palatal, velar, uvular, and glottal sounds, as well as voiced, voiceless, aspirated, ejective stops with uvular release as well as fricatives and non-nasal sonorant series. Tables 2 and 3 present the non-click set and the click set of Tsua consonants, respectively. The tables demonstrate that clicks are an integral part of the phonemic inventory of the Tsua sound system.

Table 2. Non-click consonants of Tsua (modified from Mathes & Chebanne, 2018)

	Labial	Alveolar	Palatal	Velar	Uvular	Glottal
voiceless	p	t ts	c	k	q	ʔ
voiced	b	d dz	ɟ	g	ɢ	
aspirated	p ^h	t ^h ts ^h	c ^h	k ^h	q ^h	
ejectives		t' ts' tsqχ'	c' cqχ'	k'	qχ'	
stop + uvular		tχ tsχ	cχ			
nasals	m	n	ɲ	ŋ		
fricatives		s			χ	h
non-nasal sonorants	w	r* l*	j			

The sounds [r*] and [l*] do not occur word-initially. The sound [l*] is rare in the lexicon and may be attributed to lexical borrowing. Further, while pharyngealization occurs, it is a vocalic rather than a consonant feature.

Table 3. Tsua click consonants (adapted from Mathes & Chebanne, 2018)

	Dental	Palatal	Alveolar	Lateral
voiceless		‡	!	
voiced	g	g‡		g
aspirated	^h	‡ ^h		^h
ejective	'			'
glottalized	ʔ	‡ʔ	!ʔ	ʔ
clusters	χ			χ
	qχ'		!qχ'	qχ'
	q	‡q	!q	q
	c			c
	q ^h	‡q ^h		q ^h
nasals	ŋ	ŋ‡	ŋ!	ŋ

Table 3 shows that the Tsua language has four basic clicks [!; |; ||; ‡]. However, from the word list of 1300 items gathered hitherto, the occurrence of clicks shows that they vary statistically from what obtains in other languages such as G!ui (Nakagawa, 2006). Tsua clicks do not appear in all cognates in western related languages. Importantly, the alveolar and palatal click order presents some important gaps in the voiced, aspirated, and ejective accompaniments. The reason for these gaps is not clear. However, the section on click loss may shed some light on why these clicks may not have the full accompaniments that other sounds in Tsua have. Table 4 presents a consolidated consonant system and shows how elaborate the system is.

Table 4. The consolidated consonant system of Tsua (modified from Mathes, 2015)

	Bilabial	Dental	Alveolar	Lateral clicks	Alveolars		Palatals		velar	uvular
voiceless stops	p		t		!	ts	‡	c	k	q
aspirated stops		^h	t ^h	^h	! ^h	tsh	‡ ^h	ch	kh	qh
delayed aspiration		' ^h		' ^h	!' ^h		‡' ^h			
ejective stops		'	t'	'	!'	ts'	‡'	c'	k'	q'
glottalized		ʔ		ʔ	!ʔ		‡ʔ			
voiced stops	b	g	d	g	g!	dz j	g‡	ʃ	g	

affricates		x	tx	x	!x	tsx	‡x		kx	qx
uvular stops		q		q	!q		‡q			
ejected uvulars		q'		q'	!q'		‡q'			
aspirated uvular click		qh		qh	!qh		‡qh			
ejective affricates		x' (qx')	ts' tx'	x' (qx')	!x' (!qx')	tsx'	‡x' (‡qx')	cx	kx'	qx'
nasals	m	n	n	n	n!		n‡			
fricatives						s z				x h
lateral			l; r							

The consonant system of Tsua summarized above shows that the phonological system is intact and comparable to that of Central Khoisan languages to the west. A comparative word list of 150 words that was undertaken to systematically check phonological reflexes that occurred among cognates and checked against Glui was the basis for the phonetic and phonological study of the lexicon. The Tsua click system also has a complement of accompaniments that occurs with the four fundamental clicks (and indeed with other sounds): [l; !; ||; ‡] in its lexical repertoire (Mathes, 2015). The following accompaniments are attested in Tsua phonology (using Table 4 transcriptions):

- (2) Click accompaniments attested in Tsua
- a. [lh, l'h, |', |2, g|, |x, |q, |q', |qh, |x'];
 - b. [!h, !'h, !'h, !', !2, g! , !x, !q, !q', !qh, !x']
 - c. [||h , ||'h, ||', ||2, g||, ||x, !q, !q', ||qh]
 - d. [‡h, ‡'h, ‡', ‡2, g‡, ‡x, ‡q, ‡q', ‡qh]

A comprehensive description of these accompaniment features of Kalahari Khoe languages can be found in Nakagawa (2006). While in Tsua clicks may be less or have undergone phonetic change, they nonetheless occur, albeit in reduced lexical units (Chebanne, 2014). As can be observed from Tables 2, 3, and 4, the consonant system of Tsua is still intact and comparable to the rest of Central Khoisan in the western part of Botswana. However, a more detailed study is needed to definitively classify the sounds of Eastern Kalahari Khoe. The following characterisation of click phonetic features are generally accepted by Khoisan linguists (Nakagawa, 2006; Traill & Vossen, 1997; Ladefoged & Maddieson, 1996).

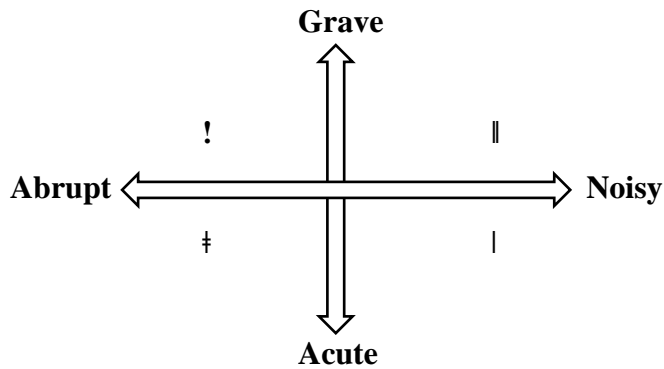


Figure 2: Click features and phonotactics

This model of click characterisation is also valid for understanding how clicks undergo change, and how the feature [+ abrupt] is readily targeted for elimination in the sound change process.

Tsua Clicks

Tsua, like other Khoisan languages, has clicks as regular sounds in its lexical inventory. They are considered *ingressive* sounds; that is, they are produced with in-flowing air. This air-flow mechanism distinguishes them from *egressive* sounds which are produced by out-flowing air. As regular sounds, they undergo similar phonological processes of click replacements to non-click segments as Tables 2, 3, and 4 here above illustrate. As indicated earlier, Tsua has four fundamental clicks [l, ||, !, and ‡] consonants. These clicks have been definitively described and classified in the articulatory spectrum by Khoisan linguists, notable among which is Traill (1986). Traill (1997) later provides refined phonetic definitions of the click consonants and their features. A common and universal understanding of click sounds is provided by Ladefoged & Maddieson (1996, pp. 257–58):

Click releases, like those of other stops, can be considered to have two acoustic components; a transient (due to rapid change of vocal tract shape) which occurs when the articulators come apart; and a noise, associated with turbulent flow of air between the articulators.

Both Ladefoged & Maddieson (1996), and Traill (1997) concur that the alveolar click [!] and the palatal click [‡] are dominated by the transient response, that is, by some significant amount of turbulent noise after release. Therefore, ! and ‡ can be considered plain and much like [t] and [k]. Ladefoged and Maddieson also agree that the bilabial, dental and lateral click releases are longer and noisier. Consequently, the ʘ, l and || clicks can be compared to egressives like [f], [ts], and [kx]. This is what Nakagawa (2006) in his analysis has found in G!ui and G!ana. Because these two languages are genetically and geographically closer to Tsua, it is assumed in this discussion that these definitions are also valid for the Tsua clicks. Clicks are therefore treated by these linguists as regular sounds in the languages they occur in. Though Tsua has fewer clicks in terms of the vocabulary that bears them, it is a full click language as these clicks [l, ||, !, ‡] are fully phonemic. Table 5 presents how these clicks contrast in Tsua.

Table 5: Tsua click contrasts

lam ‘hear’ laa ‘korhaan’	am ‘sun’ aa ‘to skin’
ũũ ‘owl’ huru ‘tremble’	ũũ ‘parent’ hoe ‘pot’
!ao ‘tall’ !hua hī ‘dawn’	ao ‘rhino; buffalo’ huru ‘tremble’
†ee ‘ear’ g†ua ‘ashes’	ee ‘wildebeest’ g ao ‘mad man’

No examples of ! vs. † and ! vs. | contrasts were found in the existing Tsua lexicon compilation.

The following subsection presents individual clicks and the possible accompaniments from the lexical items collected from 2012 to 2016 by Christopher Collins, Timothy Mathes, and Andy Chebanne.

The lateral click [|]

This is the most common click in Tsua, and as Table 3 demonstrates, it has all possible click accompaniments such as voicing, aspiration, uvularisation and glottalisation.

- (3) The lateral click with its possible accompaniments
- a. |ae HM ‘to chew’
 - b. |’ũã MM ‘to lick’
 - c. |xai |haa HM HM ‘to faint’
 - d. |gao HL ‘old person’
 - e. |ʒãũ HL ‘smell’
 - f. ŋ|a^ho HL ‘to throw nimbly’
 - g. |χ’ae-|qχ’ale HM-HL ‘to mix together’

Note: HM, high followed by mid tone; MM, mid tones following each other; HL, high followed by low tone.

The dental click [|]

The dental click is also the most common in Tsua. Like the lateral, it is fully representative of a regular consonant as it takes all possible accompaniments such as voicing, aspiration, uvularisation, and glottalisation.

- (4) The dental click with its possible accompaniments
- a. ɭudi HH ‘evil hearted, bad’
 - b. ɭχ’ãĩ MM ‘to frown’
 - c. ɭxui HM ‘morama bean’
 - d. ɭx’oe HL ‘to be filled’
 - e. ɭoxo HM ‘to chase’
 - f. ɭgoe LM ‘mongoose’
 - g. ɭlobo MM ‘noise’
 - h. ɭhuru HM ‘to shiver’
 - i. ɭ’aaHL ‘to punish’
 - j. ɭlii HL ‘this’

The alveolar click [!]

The alveolar click, or what could also be characterised as alveolar click, though it occurs in Tsua, is very limited, as Table 3 shows. There are many gaps in its occurrence with accompaniments. But it is fully phonemic as Table 5 illustrates.

- (5) The alveolar click with its possible accompaniments
- a. !ao HL ‘tall’
 - b. !x’ao ML ‘neck’
 - c. !qãũ LH ‘cheetah’
 - d. !ʔuu MH ‘Whiteman’
 - e. ɲ!au HM ‘frog’

The palatal click [ʃ]

The palatal click, just like the alveolar click, is also limited in its occurrence in the Tsua lexicon. However, as Table 5 illustrates, it is also fully phonemic and can take some accompaniments.

- (6) The palatal click and its accompaniments
- a. ʃqore HM ‘intestine’
 - b. ʃhaio dHM ‘meerkat’ (dH = depressed High tone)
 - c. ʃare HM ‘to turn and look’
 - d. ʃʔujo MH ‘mamba’ (snake)

- e. †qhua dHL ‘chop game head’
- f. †qaba HM ‘to slap’
- g. ŋ†au HL ‘to chase’

From examples (3) to (6), the lateral and dental clicks are the most regular and common as they can take all possible accompaniments. The point is, if there is anything that can be combined with a click, it can only be these two clicks. The next significant click is the palatal, which occurs in less than 50 words out of 1300. The other point from these quick observations is that, if the alveolar and the palatal clicks are residual, they are probably being phased out from the phonology of the language. The alveolar click is almost gone. This can also be supported by statistics, since from the 1300 words, the alveolar click appears in less than 10 words. This therefore means that in the sound change processes, Tsua is now at the stage of the neutralization of [†] and [!]. The resulting click forms are either a misperception where [†] is the most preferred, or a simple conflation of the two clicks. In other instances, these clicks are just dropped, and a non-click consonant appears, or nothing remains at all (see for instance examples (7), (9), (10), (11) and (12), and see also the processes in Figure 3). This will be further elaborated under the click loss model proposed by Traill & Vossen (1997), and Chebanne (2014).

Furthermore, the observation made here of the use of clicks by younger speakers and some adult men tended to make no phonetic distinction between [†] and [!]. Younger speakers around the Serowe and Shoshong region use [!] interchangeably with [†] and [†] interchangeably with [!]. Among these speakers, the ejective and uvular stop accompaniments do not seem to be perceptible (Chebanne, 2014). The explanation for this phonetic confusion maybe the fact that these speakers are socially mobile – going to school, going to work, and getting married to outsiders. This is a further indication that not just clicks but accompaniment features are also being lost and, possibly, the language in these areas is also being lost. Therefore, the phonological structure and feature of the clicks [†] and [!] are more unstable while those of the click [!] are more stable under such sociolinguistic pressure.

Click loss in Tsua

Click loss in Tsua arises from a simple observation that 1) the language has fewer clicks compared to its genetically related neighbours, and 2) some obvious cognates occur in Tsua with non-click consonants. Linguists have observed that in natural phonological contexts, African languages have historically shifted simple sounds to complex palatal and uvular sounds (Meeussen, 1967). This discussion assumes that in the history of languages, certain sounds can be lost over time. In Khoisan, Traill & Vossen (1997) provide a systematic description of click loss phenomenon, providing a phonological account of it. Nakagawa (2006) has made an extensive study of Glui and Glana and that has helped in studying observed phonological features and in classifying them appropriately. Glui, a closely related language, which is from the western zone of Kalahari Khoe, provides a basis for genetic and diachronic phonological analysis (Güldemann & Vossen, 2000). Phonological changes or differences in Glui are important in the determination of the nature of the lexical units that are the subject of this study. These will help to make a case for click loss or otherwise. The comparative vocabulary method employed by Chebanne (2014) has proven viable in the preliminary analysis of the Tsua consonant system.

Tsua, like some other Khoisan languages, has been observed to lose clicks. In earlier studies, click retention, replacement and loss processes have been accounted for by Traill & Vossen (1997). The authors have proposed the following order in click loss.

- (7) Click retention, replacement and loss order
- a. | -> | the dental click is always retained
 - b. ! -> k the alveolar-palatal click is replaced by the velar plosive [k]
 - c. || -> || the lateral click is always retained
 - d. † -> c the palatal click is replaced by the palatal fricative [c]

Since clicks are associated with the acoustic features of being abrupt, noisy, grave, and acute, these features account for their eventual phonetic status in the phonology of a language. The features are important when clicks are targeted for replacement. The abrupt (grave and acute) clicks (see Figure 2), because of their heavy articulatory energy, are the first to be lost. Chebanne (2014) made an inventory of various language and phonological losses occurring in Tsua. One of the most evident phonological loss is the click. When a click sound is lost, it is replaced by a non-click sound. The replacement follows a systematic order according to the type of clicks. In the lexical data collection with Mathes (2015), it was also observed that certain click influx contrasts are no longer phonemic, as the following examples illustrate. The complexity is constituted by such accompaniments as uvular, glottal stop, and ejection.

- (8) Loss of combined accompaniments
- a. |qχ'ã MM can also be accepted as |χ'ã MM 'to frown'
 - b. !qx'ao HH is preferred as !x'ao HH 'neck'
 - c. |x'ao HM is generally realised as |q'ao HM[n] 'snake'

The study by Traill & Vossen (1997, p. 26) observes that the systematic manner of click loss has also facilitated the phonological analyses of cognates that no longer carried clicks. The comparative approach to the Tsua lexicon has therefore been necessary to make certain determinations on the nature of the lexicon that is associated or not associated with clicks. The importance of this comparative phonological analysis has been presented by Traill & Vossen (1997, p. 26) according to whom systematic phenomenon of click loss can only be identified through comparative data. The following examples illustrate some of the evident click losses observed in Tsua (Chebanne, 2014).

- (9) The loss of the alveolar [!x]
- | | Glui | Kua | Tsua |
|----|-------------|------------|--|
| a. | !q'ao HL | !q'ao HL | lhãũ HM [n] 'thatching grass' |
| b. | !q'aba HL | !q'aba HL | kanu HM 'to carry soft matter on shoulder' |

It can be observed from (9) that the ! is lost in a non-systematic manner. It can either be replaced by a dental click or by a velar plosive.

- (10) The loss of the alveolar [!x]

Glui	Kua	Tsua
a. !xau LL	!xau LL[v] to chase	ŋʔau LL [v] ‘to chase’
b. !xanu ʔo HM L	!xanu ʔo HM L [n] inside	qx'am ʔo LH L ‘inside of mouth’

that the word ŋʔau, which means ‘to chase’ is not a result of the historical sound change, like other click replacements, but its occurrence may be due to the confusion caused by the sociolinguistic pressures discussed earlier. As observed in (10), the click !x is lost in a non-systematic manner. It is either replaced by a simple palatal click or by a non-click consonant cluster.

(11) The loss of the palatal [ʔ]

Glui	Kua	Tsua
ʔui MM	ʔui MM	cui HL [n] ‘nose’
nʔoro HM	nʔoro LL	joro MM [n] ‘backbone, back’

As observed in (11) above, the palatal click ʔ is systematically replaced by a voiced or voiceless palatal plosive. The rule can simply be presented as ʔ → c, j. The voicing is a result of voicing can be attributed to the nasal environment in which the sound occurs. Even when [ʔ] is accompanied by releases, it is replaced, as in the following examples in (12).

(12) The loss [ʔ] even when it has accompaniments

- | | | | |
|--------------|-----------|-------------------|---|
| a. ʔq'aro HL | ʔq'aro HL | cq'aro HL [n] | Buffalo Thorn (<i>Ziziphus Mucronata</i>) |
| b. ʔqx'ũũ HL | ʔx'ũũ HL | cx'ũũ HL [n, adj] | ‘noise, noisy’ |

In example (12), the rule ʔq' → cq' accounts for a simple replacement of ʔq' by a non-click palatal consonant cluster cq' that keeps the original click accompaniments.

In the Tsua data, it is evident that the click is not the only sound that is lost; some complex accompaniments as shown in (13) are also lost. The complex qx' is replaced by q' or x'.

(13) The simplification of /!qx'/ to /!x'/ or to /q'/

Glui	Kua	Tsua
a. !qx'ao HM	!x'ao HM[n] ‘snake’	!q'ao MM[n] ‘snakes (generic name)’
b. !qx'ao HH	!x'ao HH ‘neck’	!x'ao HH ‘neck’

This loss of clicks can also occur due to the simplification of accompaniments as attested in examples (13) and (14) where the alveolar and the palatal clicks are targets for replacement.

(14) Replacement of clicks and their accompaniments

	Glui	Kua	Tsua
a.	ʔɹũ HH	ʔɹũ HH	ʔɹũ HM ‘eat food other than meat’
b.	n!are LL	ɲare LL	kare LM ‘foot’
c.	gʔua HL	gʔua HL	joa HL ‘ash, soap’

Note that ʔɹũ ‘eat food other than meat’ can also be transcribed as [ʔj] or [ʔʔ] or [ʔɲ]. Also note that the de-nasalisation that occurs with kare ‘foot’ and therefore that nasalisation is another feature that can be lost in certain phonological contexts. As has been observed earlier, the lateral and dental clicks are the most preferred and are generally retained in comparative languages in the Eastern Kalahari Khoe zone. This retention also occurs even in instances of complex (or concatenated) accompaniments or different tonal configurations as in (15).

(15) The retention of the [l] and [l̥]

	Kua	Glui	Tsua
a.	lq’am MM	lq’am MM	lq’am-lq’am HL HL ‘pound into pulp’
b.	lχaba HL	lχaba HL	lχaba HL ‘hump on back’
c.	lae HH	lae	lae HH ‘tell, teach’
d.	glama HH	glama HH	glama MH ‘god, spirit’
e.	lam HH	lam HH	lam HH ‘sun, day’
f.	lii LM	lii LH	lii MH ‘aardwolf’
g.	lχuu HH	lχuu HH	lχuu HM ‘divining bone dice’
h.	lɹaa HH	lɹaa HH	lɹaa HH ‘bat ear fox’
i.	lhuru HM	lhuru HM	lhuru HM ‘to shiver, tremble’
j.	glaa HL	glaa HL	glaa HL ‘Silver Tree (Terminalia Sericea)’

While the palatal click [ʔ] occurs in the Tsua language as per Table 3, in many cognates it is systematically replaced as in (16). This is similar to the observations made above.

(16) The [ʔq] click cognates

	Glui	Kua	Tsua
a.	ʔq’aro HL	ʔq’aro HL	cq’aro HL [n] ‘Buffalo Thorn (<i>Ziziphus Mucronata</i>)’
b.	ʔui MM	ʔui MM	cui HL [n] ‘nose’
c.	nʔoro HM	nʔoro LL	joro MM [n] ‘backbone, back’

In complex phonetic formations, the palatal click [ʘ] can either be simplified or completely dropped as observed in (17) above. This confirms that this click is gradually being lost to the Tsua sound system. The words that still contain it are to be considered residues of the lexicon.

(17) Palatal click replacement

	Glui	Kua	Tsua
a.	ʘubi HM	ʘubi HM	ibi HH [n] ‘egg’
b.	ʘãã HH	ʘãã HH	iã ML [n] ‘wind’
c.	ʘũũ HH	ʘũũ HH	nũũ HM[v] ‘to eat (beans, etc.)’
d.	ʘxai HH	ʘxai HH	cxai HH [n] ‘eye’
e.	ʘxana HH	ʘxana HH	cxana HH[n] ‘mucus, running nose’

The above observations are very important in languages such as Tsua which are losing clicks. In the Tsua lexicon, there are lexical entries that are likely to have been clicks before. The examples in (18) illustrate this case of click loss in Tsua.

(18) Reflexes of lost clicks

a.	cũ ML ‘to buy’	likely coming from	ʘũũ
b.	kae HH ‘to accuse’	possibly from	!ae
c.	qχ’ã MM ‘funny’	possibly from	ʘqχ’ã or even !qχ’ã
d.	tχã MM ‘to massage an ankle’	possibly from	!χã or even ʘχã
e.	tsqχ’ae MM ‘green, blue’	possibly from	ʘsqχ’ae or even from !sqχ’ae
f.	thuro dHM ‘to pluck off feathers’	possibly from	!huro via churo (Kua)

From the examples in (18) above, one can see that the alveolar click [!] and the palatal click [ʘ] are less preferred in Tsua. However, as has been observed above, clicks are not the only phonological units targeted for loss, replacement, or simplification, but also their accompaniments, nasalization, vowels, and tones. These feature losses in vowels were observed in Chebanne (2014). What can be inferred here is that click loss is a result of phonological perturbation due to factors that are not evident in the current study, but which Traill & Vossen (1997), and Chebanne (2014) identify as socio-cultural under language contact conditions.

Table 6. Summary of click retention, neutralisation and replacement/loss

Retained	Neutralised	Replace or lost
Glui← → Kua← → Tsua	Glui← → Kua← → Tsua	Glui← → Kua← → Tsua

!q'am MM ↔ !q'am MM ↔ !q'am-!q'am HL ← → HL 'pound into pulp'	!xau LL ← → !xau LL[v] to ‡xau LL ← → ɲ‡au LL [v] 'to chase'	!q'ao HL → lhãũ HM [n] 'thatching grass'
g ama HH ← → g ama HH ← → g ama MH 'god, spirit'	!q'ao HL ← → !q'ao HL ← → lhãũ HM [n] 'thatching grass'	!q'aba HL → kanu HM 'to carry soft matter on shoulder'
lii LM ← → lii LH ← → lii MH 'aardwolf'		‡ũũ HH → ʔũũ HM 'eat food other than meat'
ʔaa HH ← → ʔaa HH ← → ʔaa HH 'bat ear fox'		n!are LL → ɲare LL → kare LM 'foot'
lhuru HM ← → lhuru HM ← → lhuru HM 'to shiver, tremble'		g‡ua HL → joa HL 'ash, soap'

From Table 6, it can be observed that the lateral and dental clicks in all their accompaniment configurations are systematically retained. The alveolar, palatal, and dental clicks are in a few instances neutralised. The alveolar and palatal clicks are targets of replacement as shown in . Figure 3 below summarises click loss processes discussed above. The stages involved are click retention or preservation for the dental and the lateral clicks, click neutralisation for the alveolar and palatal clicks, and click replacement for the palatal and the alveolar clicks. However, these are general phonological rules, and elsewhere there may still be retention or conservation of clicks. The reasons for the poor documentation of these Khoe languages are unclear, but it is possible that geographical proximity to click retaining speech communities could account for retention or recycling of certain vocabulary items with improbable clicks.

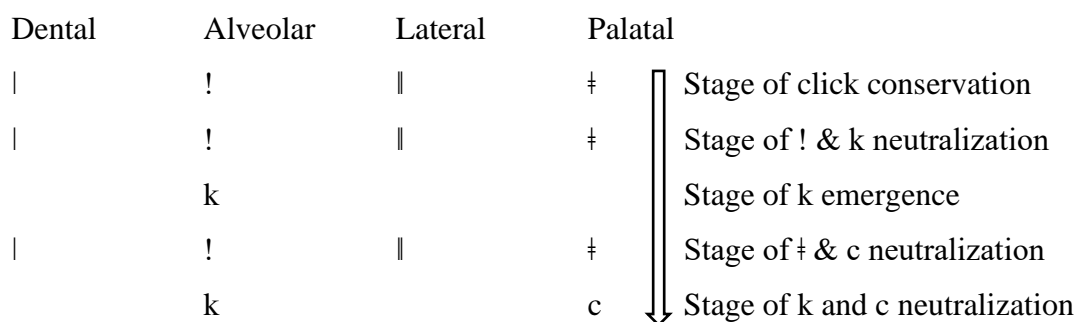


Figure 3: Phonetic weakening and loss of clicks (adapted from Traill & Vossen, 1997, p. 30)

Several observations can be made from Figure 3, and these may help to account for the phonological differences presented (Chebanne, 2014, p. 1): 1) dialectalisation or minoritisation:- this is a natural process that affects languages. When groups of speakers of one language move away from each other, over time their language starts to evolve. This could also explain the fact that there are different vocabulary items to refer to the same object. Such lexical

items may have different types of clicks; 2) sociolinguistic dynamics:- when a language comes into contact with another language that is spoken by culturally powerful speakers, the speakers of the language from a weaker culture may readily succumb to the more powerful language and cultural community. The processes involve initial bilingualism, and then the adoption of the stronger language. In the bilingual stage, speakers from the weaker culture may try to be accepted by the other community and do so by adopting some of the linguistic behaviours of the more powerful group (Batibo, 2015), and many of their linguistic peculiarities are lost as a result. This is the stage of simplification; 3) onset of phonological processes- while these phonological processes may be natural, socio-linguistic contact situations account for many of the phonological processes. For instance, Eastern Kalahari Khoe languages are in contact with Shekgalagari – which is a Sotho-Tswana language characterized by extensive palatalization. It is possible that palatalisation was also incorporated into the Eastern Kalahari Khoe, with the results that palatal segments now appear in Eastern Kalahari Khoe where there should be clicks.

This phonological characteristic of Tsua may be an indication of the loss of a click as a distinctive feature in the phonemic system of the language. This may also be associated with language loss, which is a consequence of the interactions of Tsua speakers with non-Khoe linguistic communities. Although, some adults still consistently speak Eastern Khoe languages or dialects, younger people of the school going age do not speak these languages, so much so that the parent would be speaking Khoe language (perceived as an inimical foreign tongue) and the child speaking Setswana or the Sotho-Tswana lingua franca such as Shekgalagari as their first language. This happens especially in the Central Kalahari Game Reserve. Such linguistic and sociolinguistic situations also explain tone changes which are observable in cognates that are phonologically simplified (see example (11) above).

Conclusion

The discussion of Tsua clicks has provided a phonetic as well as a phonological understanding of these Tsua sounds and contributed to the understanding of the sounds of their Eastern Kalahari Khoe languages in general. The paper demonstrated that Tsua clicks are fully phonemic and form part of the regular sounds used in speech. As such they behave like any sounds that can undergo change. The discussion has shown that clicks can be lost, and processes and conditions that account for this occurrence have been accounted for, phonetically and socio-linguistically.

The sociolinguistic situations present ideal conditions for click loss and/or gain. Generally, Bantu languages do not tolerate clicks. Only the Okavango (Zone R) and Nguni (Zone S) languages are known to tolerate clicks and even use them phonemically. However, it is also probable that non-click languages which have existed near click languages for a long time, and/or click languages proximal to non-click languages, develop lateral fricatives or occlusive [tʎ] for [ʎ], as is the case with Xhosa, Setswana and Hadza. There could also be an emergence of uvulars such as (qʰ; qʁ) in Shekgalagari and Setswana. A lot needs to be done in the documentation of Tsua. Its poor social status, its limited use by very old people, and lack of currency in daily communication renders this language endangered. The Tsua language is linguistically endangered, as the dynamics of its phonology and lexicon clearly illustrate.

Notes

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