L2/20-115R

Unicode request for additional phonetic click letters

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This request is for phonetic symbols used for click consonants, primarily for Khoisan and Bantu languages. For the two symbols ⟨ꟻ⟩ and ⟨ꟾ⟩, which fit the pre- and post-Kiel IPA and see relatively frequent use, code points in the Basic Plane are requested. Per the recommendation of the Script Ad Hoc Committee, two other symbols, ⟨⁉⟩ and ⟨⦀⟩, may be best handled by adding annotations to existing punctuation and mathematical characters. The remainder of the symbols being proposed are less common and may be best placed in the supplemental plane. Three precomposed characters, old IPA ɻ ʖ ɕ with a swash (⟨𞬱⟩, ⟨𞬲⟩, ⟨𞬳⟩), are covered in a separate proposal.

Characters

ꟻ U+A7F0 LATIN SMALL LETTER ESH WITH DOUBLE BAR. Figures 1–9.

ꟾ U+A7F1 LATIN LETTER RETROFLEX CLICK WITH RETROFLEX HOOK. Figures 16–19.

𞞰 U+10780 LATIN SMALL LETTER TURNED T WITH CURL. Figures 8–13.

𞞱 U+10781 LATIN LETTER INVERTED GLOTTAL STOP WITH CURL. Figures 8, 9, 11, 12, 15.

𞞲 U+10782 LATIN SMALL LETTER ESH WITH DOUBLE BAR AND CURL. Figures 8-10.

𞞳 U+10783 LATIN LETTER STRETCHED C WITH CURL. Figures 8, 9, 12, 14.

ꭓ U+10784 LATIN LETTER SMALL CAPITAL TURNED K. Figure 20.

Suggested annotations

U+A7F0 LATIN SMALL LETTER ESH WITH DOUBLE BAR ⟨ꟻ⟩ resembles U+2A0E INTEGRAL WITH DOUBLE STROKE ⟨⨎⟩, though the glyph design is different.

(The Script Ad Hoc Committee recommends not unifying them.)

U+203C DOUBLE EXCLAMATION MARK ⟨‼⟩ may be used as a phonetic symbol, equivalent to a doubled U+1C3 LATIN LETTER RETROFLEX CLICK ⟨!⟩. A single character is required when modifying with a tie bar, U+0361 COMBINING DOUBLE INVERTED BREVE or U+035C COMBINING DOUBLE BREVE BELOW, as well as for voicing and nasalization diacritics.

U+2980 TRIPLE VERTICAL BAR DELIMITER ⟨⦀⟩ may be used as a phonetic symbol, forming a graphic set with U+1C0 LATIN LETTER DENTAL CLICK ⟨|⟩ and U+1C1 LATIN LETTER LATERAL CLICK ⟨‖⟩. A single character is required when modifying with a tie bar, U+0361 COMBINING DOUBLE INVERTED BREVE or U+035C COMBINING DOUBLE BREVE BELOW, and for voicing and nasalization diacritics.

(U+2980 is the preferred character for phonetic use as it can be used in more general contexts than U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION or U+2AFC LARGE TRIPLE VERTICAL BAR OPERATOR.)

Chart

Highlighted characters are proposed in this request. Other characters are being proposed in separate requests by one of the same authors. Greyed-out cells are already assigned.

	...0	...1	...2	...3	...4	...5	...6	...7	...8	...9	...A	...B	...C	...D	...E	...F
Latin Extended-D																
U+A7Fx	꟰	꟱	ꟲ	ꟳ	ꟴ											
Phonetic Extensions Supplement-A																
U+1078x	𐞀	𐞁	𐞂	𐞃	𐞄	ᒣ										

Properties

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A7F0;LATIN SMALL LETTER ESH WITH DOUBLE BAR;Ll;0;L;;;;;N;;;;;
A7F1;LATIN LETTER RETROFLEX CLICK WITH RETROFLEX
    HOOK;Ll;0;L;;;;;N;;;;;
10780;LATIN SMALL LETTER TURNED T WITH CURL;Ll;0;L;;;;;N;;;;;
10781;LATIN LETTER INVERTED GLOTTAL STOP WITH CURL;Ll;0;L;;;;;N;;;;;
10782;LATIN SMALL LETTER ESH WITH DOUBLE BAR AND
    CURL;Ll;0;L;;;;;N;;;;;
10783;LATIN LETTER STRETCHED C WITH CURL;Ll;0;L;;;;;N;;;;;
10784;LATIN LETTER SMALL CAPITAL TURNED K;Ll;0;L;;;;;N;;;;;
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References

Douglas Beach (1938) *The Phonetics of the Hottentot Language*.

William Bennet (2020) ‘Click phonology’. In Bonny Sands, ed., *Click Consonants*. (Empirical Approaches to Linguistic Theory, 15). Leiden: Brill.

Anita Bickford & Rick Floyd (2006) *Articulatory Phonetics*, 4th ed. SIL International.

Julian Bradfield (2014) “Clicks, Concurrency and Khoisan,” *Phonology*, vol. 31, no. 1.

Derek Elderkin (1989) *The Significance and Origin of the Use of Pitch in Sandawe*.

Bonny Sands (2020) ‘Click consonants: An Introduction’. In Bonny Sands, ed., *Click Consonants*. (Empirical Approaches to Linguistic Theory, 15). Leiden: Brill.

Schreuder & Holmboe (1850) *Grammatik for Zulu-Sproget*, Christiania.

Figures

Esh with double bar (ʩ)

Beach proposed this as a graphically consistent variant of ʄ to be used in the IPA alongside ʈ ʃ ʗ. It has been used by other linguists for palatal clicks in texts that use ex-IPA ʈ ʃ ʗ. John Wells (p.c. 2015 oct 29) said, "It would be good to have Beach's symbol available in Unicode."

Though semantically the same as ʄ, the graphic distinction between ʃ and ʄ is equivalent to that of ʈ ʃ ʗ and ǀ ǁ !. The letter is graphically similar to the integral sign U+2A0E ⟨⨎⟩, but the Script Ad Hoc Committee decided that the they were graphically distinct, and that the integral sign is not an appropriate substitute for the click letter.

A proper ⟨ʩ⟩ would be useful beyond current use. Amanda Miller (no relation, p.c. 2012) said,

> *I like the idea of using Beach's 1938 palatal click symbol for the fricated post-alveolar click type found in Ekoka !Xun, and I would appreciate it if you would get the SIL to include that symbol in the new fonts that they are developing. That would save me a lot of work!*

If ⟨ʩ⟩ were added to Unicode, we'd have all of Beach's oral click letters. The nasal letters (formed with a loop at the bottom, see next entry) would still not be supported, but there is precedent of using the oral Beach click letters without the nasal letters. Elderkin (1983) *Tanzanian and Ugandan Isolates*, for example, uses a preceding nasal superscript, ⟨ᴺʈ ᴺʃ ᴺʗ ᴺʩ⟩, for nasal clicks. He continued to use "the symbols of the prelapsarian IPA" after the IPA changed over, retaining ʃ alongside ʈ ʃ ʗ despite not using the dedicated letters for nasal clicks in that publication.

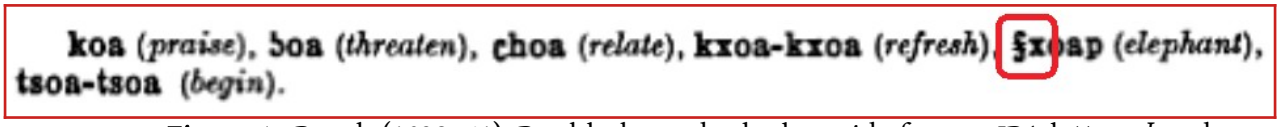
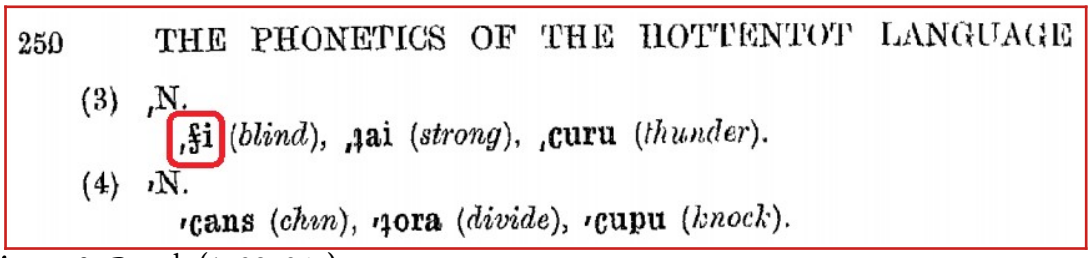

koa (*praise*), ɔoa (*threaten*), choa (*relate*), kxoa-kxoa (*refresh*), ʂxoap (*elephant*), tsoa-tsoa (*begin*).

Figure 1. Beach (1938: 51). Double-barred esh alongside former IPA letters ʃ and ʗ.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(3) ˌN.
ˌʂi (*blind*), ˌʇai (*strong*), ˌcuru (*thunder*).

(4) ˌN.
ˌcans (*chin*), ˌʇora (*divide*), ˌcupu (*knock*).

Figure 2. Beach (1938: 250)

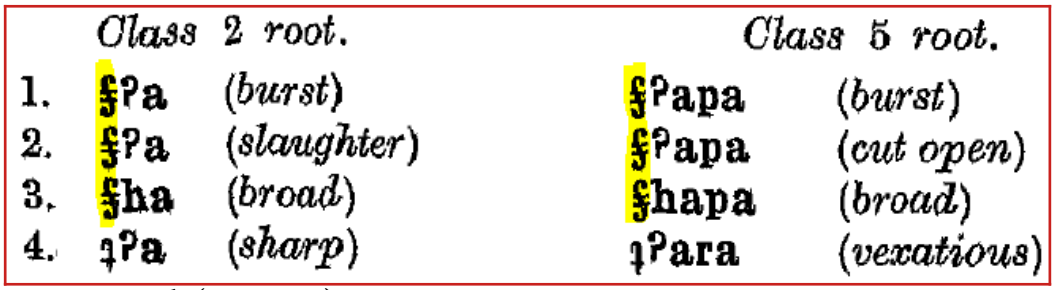

	Class 2 root.		Class 5 root.	
1.	ʂʔa	(*burst*)	ʂʔapa	(*burst*)
2.	ʂʔa	(*slaughter*)	ʂʔapa	(*cut open*)
3.	ʂha	(*broad*)	ʂhapa	(*broad*)
4.	ʇʔa	(*sharp*)	ʇʔara	(*vexatious*)

Figure 3. Beach (1938: 276)

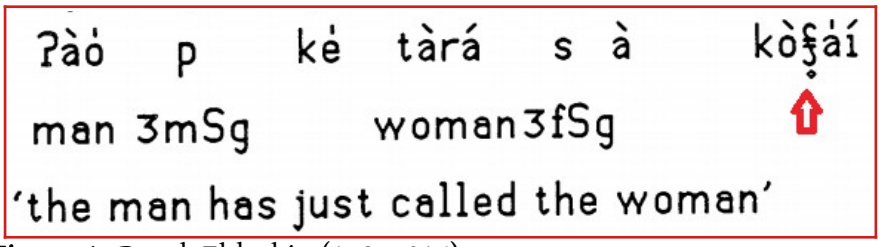


Figure 4. Derek Elderkin (1989: 216)

2.3.2 The fricated palatal laminal /ǂ/ click type

The /ǂ/ click type in Ekoka !Xun has a similar burst duration and intensity to /‖/, as shown in Figures 1.2-1.3. The /ǂ/ and /‖/ click types differ in the spectral characteristics of their bursts, with the former having a lower frequency emphasis and the latter having a higher frequency emphasis in the 0-4000 Hz range, as shown in Figure 1.4. The fricated palatal /ǂ/ has more energy below 2000 Hz, than does /‖/, particularly in the F1/F2 region. It also has a low F3 locus, as also seen in retracted rhotics. The center of gravity of this click burst, however, is high at 4527 Hz, like other palatal clicks (Fulop and Wright, this volume). The lateral click has a center of gravity at 2974 Hz.

The fricated ǂ-click in Yeyi, as shown in Fulop and Wright (this volume), has a diffuse spectrum with high frequency energy, suggesting that the frication takes place on the alveolar ridge while the tongue body is still high. This is quite different from the /ǂ/ click type of Ekoka !Xun.

Figure 5. Sands (forthcoming: 10), illustrating a contrast between ⟨ʄ⟩ and the IPA palatal click symbol ⟨ǂ⟩.

Figure 1.2: Ekoka !Xun fricated palatal click /ǂ/ and following breathy vowel, in the word /ǂa̤hà/ 'cut', recorded by Johanna Brugman in 2006.

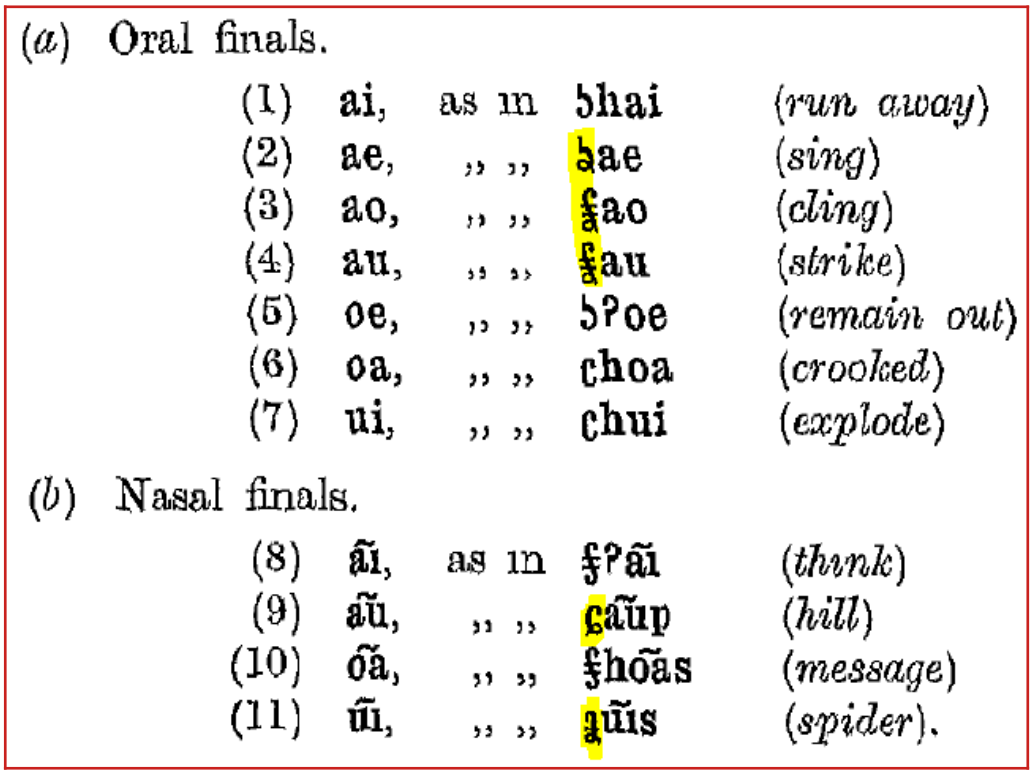
Figure 6. Sands (forthcoming: 11)

types all appear to have [ǀ ‖ !], plus palatal [ǂ] (e.g. Khoekhoe, Yeyi, Jul'hoan, Glui, Kxoe), or plus fricated palatal laminal [ʄ] rather than palatal [ǂ], in the

Figure 7. Bennet (forthcoming: 95), again contrasting ⟨ʄ⟩ with ⟨ǂ⟩.

Nasal-curl click letters (ɳ ɕ ɗ ʄ)

These complete the set of eight click letters created by Beach. Other linguists used them for at least half a century, both when citing Beach for Khoekhoe and when publishing original fieldwork of other languages.



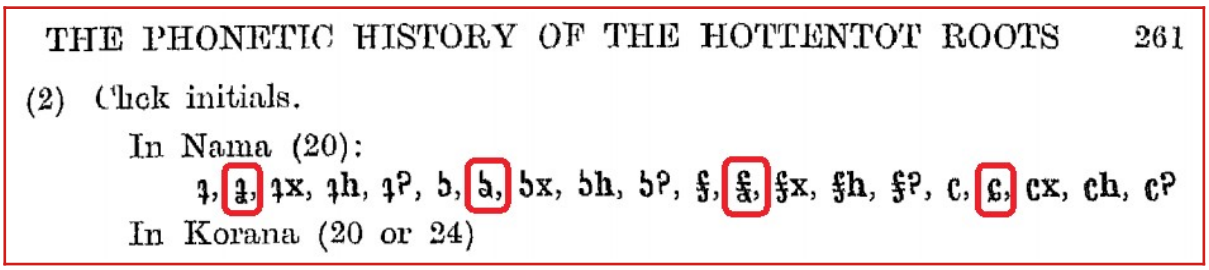
(*a*) Oral finals.

(1)	ai,	as in	ɓhai	(*run away*)
(2)	ae,	,, ,,	ɓae	(*sing*)
(3)	ao,	,, ,,	ʄao	(*cling*)
(4)	au,	,, ,,	ʄau	(*strike*)
(5)	oe,	,, ,,	ɓʔoe	(*remain out*)
(6)	oa,	,, ,,	ɕhoa	(*crooked*)
(7)	ui,	,, ,,	ɕhui	(*explode*)

(*b*) Nasal finals.

(8)	ãi,	as in	ʄʔãi	(*think*)
(9)	ãũ,	,, ,,	ɕãũp	(*hill*)
(10)	õã,	,, ,,	ʄhõãs	(*message*)
(11)	ũi,	,, ,,	ɳũis	(*spider*).

Figure 8. Beach (1938: 261), phonemic inventory. Also illustrates plain ⟨ʄ⟩. (The lack of serif at the top of the ⟨ɗ⟩ is just a detail of the font; the letter derives from ⟨ɔ⟩.)



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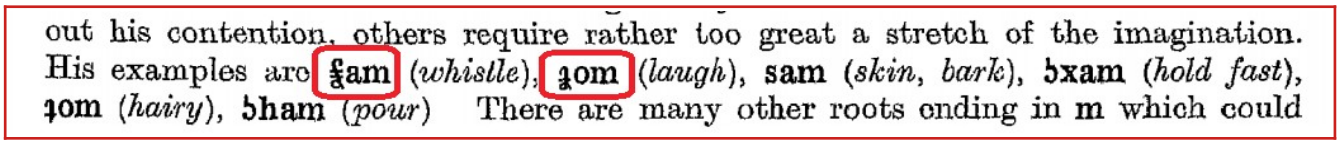
(2) Click initials.

In Nama (20):

ʇ, ɳ, ʇx, ʇh, ʇʔ, ɓ, ɗ, ɓx, ɓh, ɓʔ, ʄ, ʄ, ʄx, ʄh, ʄʔ, c, ɕ, cx, ch, cʔ

In Korana (20 or 24)

Figure 9. Beach (1938: 266), showing all four nasal click letters in transcription.



out his contention, others require rather too great a stretch of the imagination. His examples are ʄam (*whistle*), ɳom (*laugh*), sam (*skin, bark*), ɓxam (*hold fast*), ʇom (*hairy*), ɓham (*pour*) There are many other roots ending in m which could

Figure 10. Beach (1938: 255), with ⟨ʄ ɳ⟩.

Bushman Languages shows that the Tati Masarwa (Bushmen), whose language has many resemblances to Hottentot, use the form ǯe for Hottentot **ne**. It may be that in an older form of Hottentot, ǯe was used to mean *this* and ƅa to mean *that*, and that the influx of the ǯ in ǯe was subsequently omitted, leaving simply **ne**. In that case the present-day **ne** and ƅa are etymologically unconnected.

Figure 11. Beach (1938: 275), with ⟨ƅ ǯ⟩.

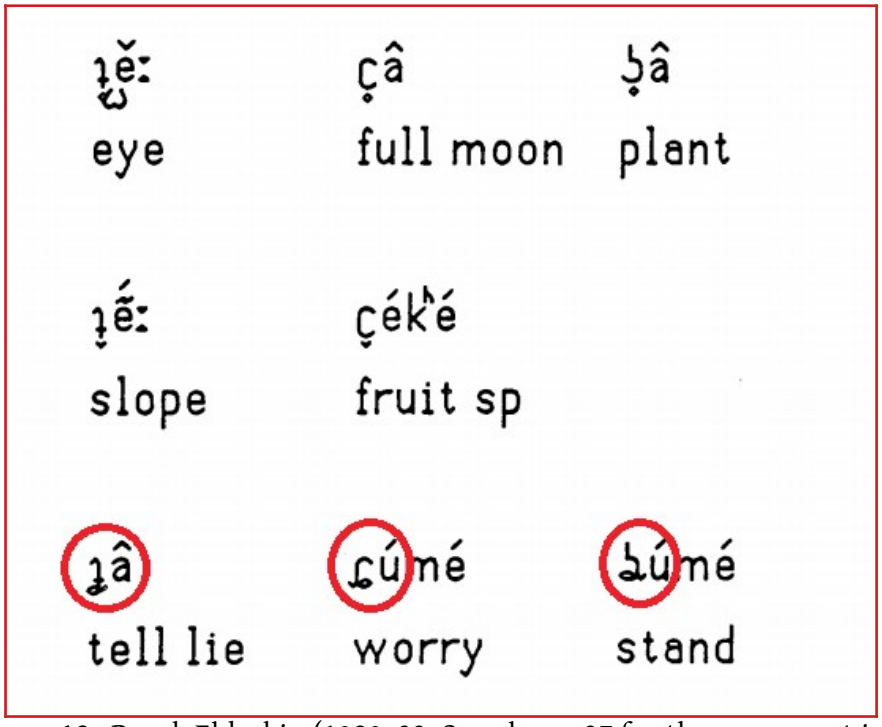


Figure 12. Derek Elderkin (1989: 33. See also p. 37 for the consonant inventory.) Elderkin used a typewriter substitution of a low overstruck tilde to mimic the curl of the nasal click letters, though later in the text he acknowledges that the curl is not actually a tilde. Sandawe does not have a palatal series of clicks, so ⟨ǂ⟩ is not present. The voiceless ring (top row) is simply accounting verification that another diacritic was not forgotten.

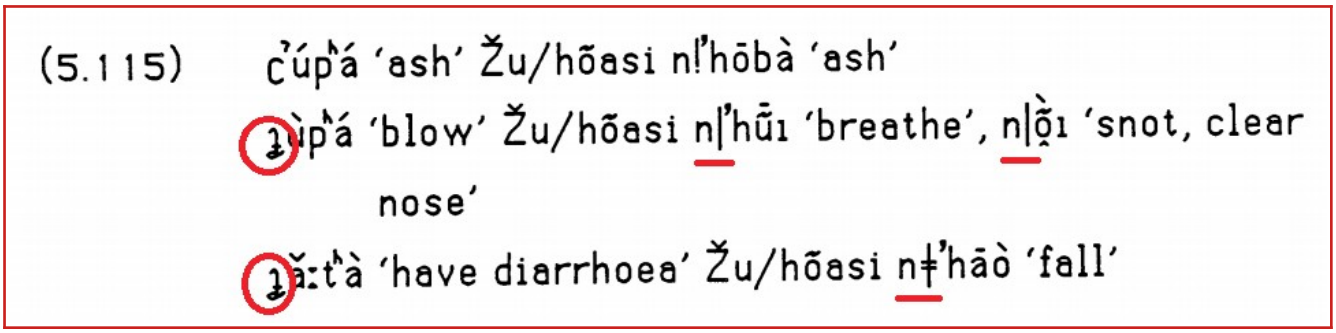


Figure 13. Elderkin (1989: 302), with ⟨ǯ⟩. Elderkin retains the Lepsius pipe letters (underlined) of his Ju|'hoansi source, but uses the Beach letters for data from his own fieldwork in Sandawe (circled).

There is one item which shows clearly how a diphthong functions as a vowel in that it can cooccur with nasalisation. It is ɕãjʔ̀ṭè 'the other side of'. ɕãj does not occur outside this context although ʔ̀ṭè is a common locative suffix, (to be precise, a sequence of two locative suffixes). Compare Nama ɕáː 'in' and Žu/'hõasi n‡àng 'within'. I also noted the Sandawe form as ɕãjʔ̀ṭè, but I do not know if I was accurate, or if indeed, the form was an attempt to adapt ɕãjʔ̀ṭè to the permitted phonetic syllable structure by reanalysing it as ɕãjjʔ̀ṭè, (from ɕăːj+ɛ̀ː+ʔ̀ṭè), which would be a possible sequence. This tonal pattern might also have been because of the following ʔ̀, (irregularly). ɕãjʔ̀ṭè is the only item I have found with a nasalised diphthong.

Figure 14. Elderkin (1989: 211), with <ɕ>.

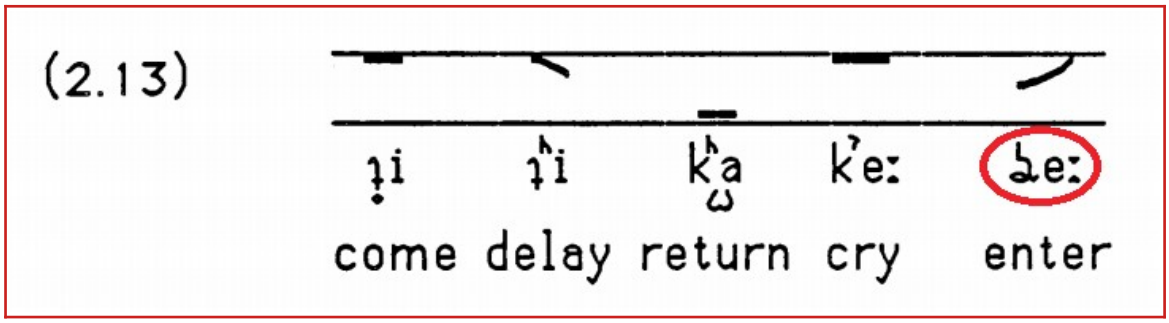


Figure 15. Elderkin (1989: 42), with <ɮ>.

! with retroflex tail (ǃ)

Attested from !Kung. Would be 'sanctioned IPA transcription' (Sands forthcoming, Figure 19).

A sixth click, which has not received an IPA symbol but is sometimes notated [!!] or [ǃ] is the true retroflex click. This is similar to [!], but the tongue tip is placed a little further back, and the contact may be apical or sublaminal. The impression is slightly softer and higher than [!], and in the Khoisan languages and dialects in which it appears, it corresponds to [ǂ] in the

Figure 16. Bradfield (2014: 3)

Table 36.1. Click symbols

	Bilabial	Dental	Alveolar	Retroflex	Palato-alveolar		
voiceless	ʘ	ǀ	ǃ	ǃ	ǂ		
voiced	g͡ʘ	g͡ǀ	g͡ǃ	g͡ǃ	g͡ǂ		
voiced	ŋ͡ʘ	ŋ͡ǀ	ŋ͡ǃ	ŋ͡ǃ	ŋ͡ǂ	nasal	
voiceless			ǁ			lateral	click

Figure 17. Bickford & Floyd (2006: 186).

Bilabial	Dental	Alveolar	Alveolar lateral	Retroflex	Palato-alveolar
ŋ͡ʘa	ŋ͡ǀa	ŋ͡ǃa	ŋ͡ǁa	ŋ͡ǃa	ŋ͡ǂa
aŋ͡ʘa	aŋ͡ǀa	aŋ͡ǃa	aŋ͡ǁa	aŋ͡ǃa	aŋ͡ǂa
g͡ʘa	g͡ǀa	g͡ǃa	g͡ǁa	g͡ǃa	g͡ǂa
ag͡ʘa	ag͡ǀa	ag͡ǃa	ag͡ǁa	ag͡ǃa	ag͡ǂa

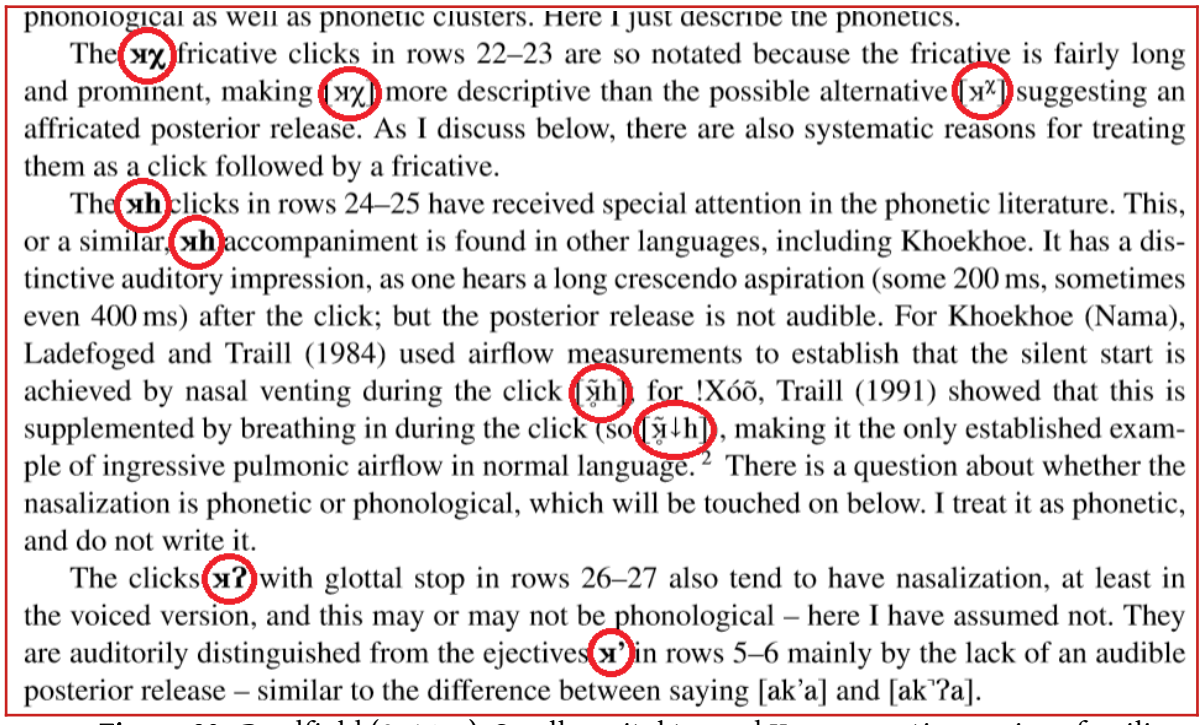
Figure 18. Bickford & Floyd (2006: 187)

and Heine 2008: 5). A retroflex hook on the dot on the symbol for a (post)alveolar click ǃ would be a sanctioned IPA transcription but it is not as distinctive looking as <!!>.

Figure 19. Sands (forthcoming)

Small capital turned K (ɮ)

As noted in Heselwood (2013: 122), turned ᴋ was mentioned in the 1949 IPA *Principles* (p. 19) as a suggestion for a generic consonant symbol, alongside ⟨ɲ⟩ for a generic vowel symbol, now usually C and V. More recently, ⟨ɮ⟩ has been used as a generic symbol for clicks that allows one to define an 'accompaniment' without specifying a place of articulation.



phonological as well as phonetic clusters. Here I just describe the phonetics.

The ɮχ fricative clicks in rows 22–23 are so notated because the fricative is fairly long and prominent, making [ɮχ] more descriptive than the possible alternative [ɮˣ] suggesting an affricated posterior release. As I discuss below, there are also systematic reasons for treating them as a click followed by a fricative.

The ɮh clicks in rows 24–25 have received special attention in the phonetic literature. This, or a similar, ɮh accompaniment is found in other languages, including Khoekhoe. It has a distinctive auditory impression, as one hears a long crescendo aspiration (some 200 ms, sometimes even 400 ms) after the click; but the posterior release is not audible. For Khoekhoe (Nama), Ladefoged and Traill (1984) used airflow measurements to establish that the silent start is achieved by nasal venting during the click [ʗ̃ʰ] for !Xóõ, Traill (1991) showed that this is supplemented by breathing in during the click (so [ʗ̃ˬʰ], making it the only established example of ingressive pulmonic airflow in normal language.[2] There is a question about whether the nasalization is phonetic or phonological, which will be touched on below. I treat it as phonetic, and do not write it.

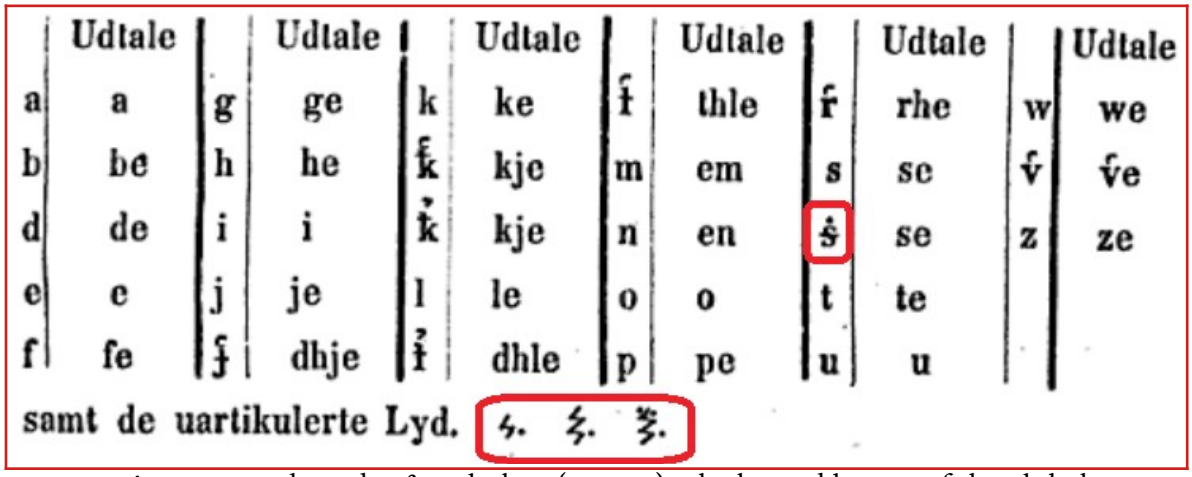
The clicks ɮʔ with glottal stop in rows 26–27 also tend to have nasalization, at least in the voiced version, and this may or may not be phonological – here I have assumed not. They are auditorily distinguished from the ejectives ɮʼ in rows 5–6 mainly by the lack of an audible posterior release – similar to the difference between saying [akʼa] and [akˀ̚ʔa].

Figure 20. Bradfield (2014: 9). Small-capital turned K representing various families of clicks.

For future reference

Old Zulu click letters (ǂ, ǂ̈)

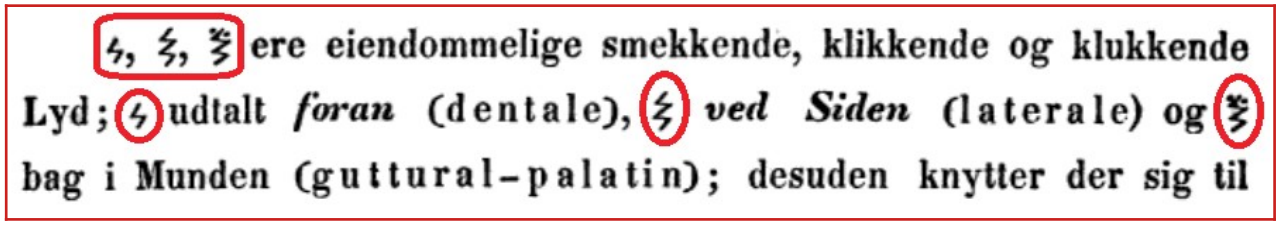
Used by the 19th-century Norwegian mission to the Zulu. No known interest in digitizing such material at present. The first letter resembles a Greek qoppa, ϟ, in some fonts, but qoppa has the wrong height and will not have the proper shape in all fonts.



	Udtale		Udtale		Udtale		Udtale		Udtale		Udtale
a	a	g	ge	k	ke	ƭ	thle	r̊	rhe	w	we
b	be	h	he	k̊	kje	m	em	s	se	v̊	ve
d	de	i	i	k̓	kje	n	en	ṡ	se	z	ze
e	e	j	je	l	le	o	o	t	te		
f	fe	ʄ	dhje	ƚ	dhle	p	pe	u	u		

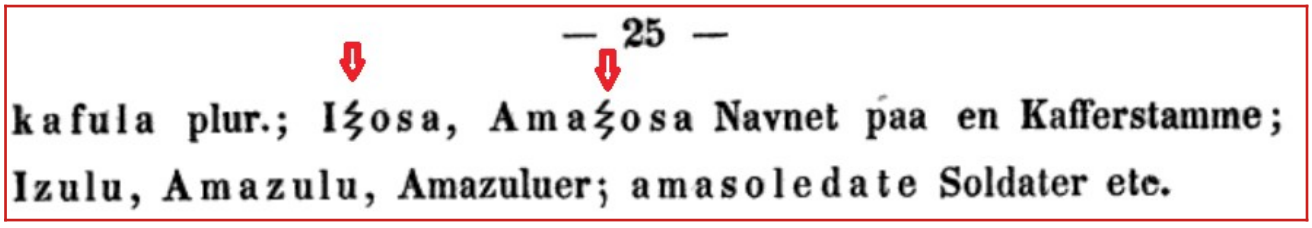
samt de uartikulerte Lyd. ǂ. ǂ̣. ǂ̈.

Figure 21. Schreuder & Holmboe (1850: 1). The barred letters of the alphabet are covered by Unicode *ɟ ƙ ƚ*, with U+A7CA planned for s-bar. The diacritics might be rendered as *k̓ k̓* etc., though the typesetter here apparently used overscript *k̊ k̊*.



ǂ, ǂ̣, ǂ̈ ere eiendommelige smekkende, klikkende og klukkende Lyd; ǂ udtalt *foran* (dentale), ǂ̣ *ved Siden* (laterale) og ǂ̈ bag i Munden (guttural-palatin); desuden knytter der sig til

Figure 22. Schreuder & Holmboe (1850: 5). Single ⟨ǂ⟩ is modern *c*; double ⟨ǂ̣⟩ (perhaps inspired by Greek *ξ*?) is modern *x*. ⟨ǂ̈⟩ for modern *q* is distinguished by a diacritic and so should not need separate Unicode encoding.



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kafula plur.; Iǂosa, Amaǂosa Navnet paa en Kafferstamme; Izulu, Amazulu, Amazuluer; amasoledate Soldater etc.

Figure 23. Schreuder & Holmboe (1850: 25). ⟨Iǂosa⟩ *Ixosa* and ⟨Amaǂosa⟩ *Amaxosa* ("Xhosa") in the Norwegian Zulu alphabet, identifying ⟨ǂ⟩ with modern *x*.

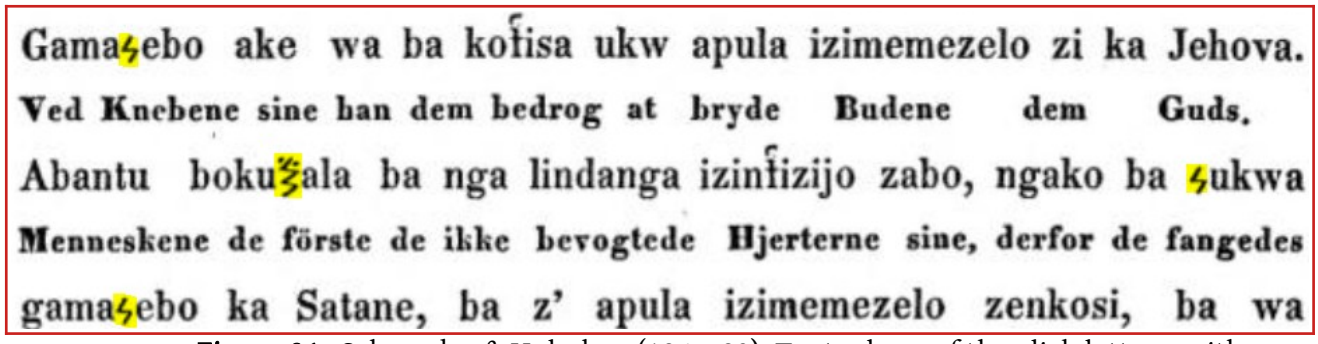
Gamaǂebo ake wa ba koĭisa ukw apula izimemezelo zi ka Jehova.
Ved Knebene sine han dem bedrog at bryde Budene dem Guds.
Abantu bokuǂ̈ala ba nga lindanga izinĭizijo zabo, ngako ba ǂukwa
Menneskene de første de ikke bevogtede Hjerterne sine, derfor de fangedes
gamaǂebo ka Satane, ba z' apula izimemezelo zenkosi, ba wa

Figure 24. Schreuder & Holmboe (1850: 83). Textual use of the click letters, with ⟨gamaǂebo⟩ and ⟨ǂukwa⟩ for modern *c* and ⟨bokuǂ̈ala⟩ for modern *q*.

ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646[1]
Please fill all the sections A, B and C below.
Please read Principles and Procedures Document (P & P) from http://std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html **for guidelines and details before filling this form.**
Please ensure you are using the latest Form from http://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html**.**
See also http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html **for latest *Roadmaps*.**

A. Administrative

1. **Title:** *Additional phonetic click letters*
2. Requester's name: *Kirk Miller, Bonny Sands*
3. Requester type (Member body/Liaison/Individual contribution): *individual*
4. Submission date: *2020 July 10*
5. Requester's reference (if applicable):
6. Choose one of the following:
   This is a complete proposal: *x*
   (or) More information will be provided later:

B. Technical – General

1. Choose one of the following:
   a. This proposal is for a new script (set of characters):
      Proposed name of script:
   b. The proposal is for addition of character(s) to an existing block: *x*
      Name of the existing block: *Latin Extended-D, Phonetic Extensions Supplement-A*
2. Number of characters in proposal: *7*
3. Proposed category (select one from below - see section 2.2 of P&P document):
   A-Contemporary x | B.1-Specialized (small collection) | B.2-Specialized (large collection)
   C-Major extinct | D-Attested extinct | E-Minor extinct
   F-Archaic Hieroglyphic or Ideographic | G-Obscure or questionable usage symbols
4. Is a repertoire including character names provided? *yes*
   a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document? yes
   b. Are the character shapes attached in a legible form suitable for review? *yes*
5. Fonts related:
   a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard? *Kirk Miller*
   b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.): *SIL (Gentium Release)*
6. References:
   a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided? *yes*
   b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached? *yes*
7. Special encoding issues:
   Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)? *yes*

8. Additional Information:

Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at http://www.unicode.org for such information on other scripts. Also see Unicode Character Database (http://www.unicode.org/reports/tr44/) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

[1] Form number: N4502-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11, 2011-03, 2012-01)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before? *no*
   If YES explain
2. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)? *yes*
   If YES, with whom? *The authors are a members of the user community.*
   If YES, available relevant documents:
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?
   Reference:
4. The context of use for the proposed characters (type of use; common or rare) *phonetic*
   Reference:
5. Are the proposed characters in current use by the user community? *yes*
   If YES, where? Reference: *see illustrations*
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP? *no*
   If YES, is a rationale provided?
   If YES, reference:
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)? *no*
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? *no*
   If YES, is a rationale for its inclusion provided?
   If YES, reference: *(annotations to support those that are)*
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? *yes*
   If YES, is a rationale for its inclusion provided?
   If YES, reference: *(Unicode disprefers use of combining retroflex tail)*
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character? *yes*
    If YES, is a rationale for its inclusion provided? *yes*
    If YES, reference: *(see comment by Script Ad Hoc Committee on integral sign)*
11. Does the proposal include use of combining characters and/or use of composite sequences? *no*
    If YES, is a rationale for such use provided?
    If YES, reference:
    Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided? *no*
    If YES, reference:
12. Does the proposal contain characters with any special properties such as control function or similar semantics? *no*
    If YES, describe in detail (include attachment if necessary)
13. Does the proposal contain any Ideographic compatibility characters? *no*
    If YES, are the equivalent corresponding unified ideographic characters identified?
    If YES, reference: