

Universal Multiple-Octet Coded Character Set  
International Organization for Standardization  
Organisation Internationale de Normalisation  
Международная организация по стандартизации

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**Title:** Request to change the names of three Teuthonista characters under ballot  
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Many characters used in Teuthonista phonetic transcription of dialectological material were accepted for encoding on the basis of the documentation provided in N4081 “Revised proposal to encode ‘Teuthonista’ phonetic characters in the UCS”. Three of these characters were misidentified, and should have their names and glyphs changed as the final technical ballot has not closed.

The characters in question are part of a set of x-like characters used to represent back fricatives of various kinds. Seven of these characters are under ballot from U+AB53..U+AB59, and it is the first three which we have identified as having been mis-identified and mis-named. The character names and glyphs of those three characters were based on the assumption that they were derived from LATIN LETTER SMALL X with modifications. In fact, this was an erroneous assumption.

Four other characters under ballot *are* correctly named. Giving x on its own for comparison, and showing the additions in plain and italic type:

0078	X	<i>X</i>	LATIN SMALL LETTER X
AB56	<b>X</b>	<i>ℵ</i>	LATIN SMALL LETTER X WITH LOW RIGHT RING
AB57	<b>X̄</b>	<i>X̄</i>	LATIN SMALL LETTER X WITH LONG LEFT LEG
AB58	<b>X̄</b>	<i>ℵ</i>	LATIN SMALL LETTER X WITH LONG LEFT LEG AND LOW RIGHT RING
AB59	<b>X̄</b>	<i>X̄</i>	LATIN SMALL LETTER X WITH LONG LEFT LEG WITH SERIF

Comparison with a number of publications, such as those from König 1997:167 which uses TeuTEX (see Figures 10 and 11), make it clear that the last three of these characters (*x*, *ℵ*, *X̄*) were derived by elongating one of the legs of an *x*. The three characters below, however, were not based on “stretching an x”, but rather on a 19th-century latinization of the Greek letter chi:

AB53	<b>X̄</b>	<i>X̄</i>	LATIN SMALL LETTER STRETCHED X → 03C7 χ greek small letter chi
AB54	<b>X̄</b>	<i>ℵ</i>	LATIN SMALL LETTER STRETCHED X WITH LOW RIGHT RING
AB55	<b>X̄</b>	<i>X̄</i>	LATIN SMALL LETTER STRETCHED X WITH LOW LEFT SERIF

Given the history of chi in phonetic transcriptions and the very history of the creation of these particular symbols, we believe that the correct thing to do is to change the character names (which are normative) and to modify the glyphs of these characters so that the following appear in the standard:

AB53	Χ	χ	LATIN SMALL LETTER CHI → 03C7 χ greek small letter chi
AB54	Χ̇	χ̇	LATIN SMALL LETTER CHI WITH LOW RIGHT RING
AB55	Χ̸	χ̸	LATIN SMALL LETTER CHI WITH LOW LEFT SERIF

Now no one disagrees that at certain historical points in German linguistic and dialectological science the ordinary Greek chi letter (χ) was used, because local printers had Greek sorts and they simply used them. What is significant is the use to which they put them, and the fact that some scholars chose not to use ordinary Greek letters, but rather Latin borrowings of Greek letters, harmonized with the Latin fonts. (This was done explicitly by the founders of the International Phonetic Alphabet many years later, but here we will concentrate on the Germanicist usage.)

**Pour le n.º XX, nous adoptons l'χ grec qui ne doit pas se prononcer *iks*; mais comme le jota espagnol et le *ch* allemand: lorsque la prononciation *ks* se trouvera en arabe, nous la pein-**

**Figure 1.** Constantin-François de Volney was one of the first Continental Europeans to use chi in phonetic transcription of [x] in *Simplification des langues orientales* (1795). It was taken from a typical Greek font of the time. (Edward Lhuyd had used chi for [x] in his 1707 *Archaeologia Britannica* but this may not have been known to de Volney and later students of linguistics.)

Karl Richard Lepsius borrowed some symbols from Volney, including chi, in *Das allgemeine linguistische Alphabet* (1855) and in the second edition *Standard Alphabet for Reducing Unwritten Languages and Foreign Graphic Systems to a Uniform Orthography in European Letters* (1863).

<b>Die Consonanten des Allgemeinen Alphabets.</b>							
	explosivæ oder dividuae			fricativæ oder continuae			liquidæ
	orales		nasal.	orales			
	fortis	lenis		fortis	lenis	semitvocal.	
<b>I. Faucales.</b>	ʔ	ʕ		ħ	h		
<b>II. Gutturales.</b>	k	q	g	ñ	χ(χ̇)	χ̇(γ)	r
<b>III. Palatales.</b>	k̄	ḡ	ñ̄	χ̇	χ̇̇(γ̇)	y	l
<b>IV. Cerebrales.</b>	t̄	d̄	n̄	š	ž		l̄
<b>V. Linguales.</b>	t̂	d̂	n̂	s	z		
<b>VI. Dentales.</b>	t	d	n	{ š s	{ ž z		r
<b>VII. Labiales.</b>	p	b	m	{ θ(θ̇)	{ θ̇(δ̇)	w	

**Figure 2.** Lepsius had special Latin glyphs made for the capital and small letters chi, indicative of the disunification. Lepsius uses χ for the velar fricative [x] and χ̇ for the palatal fricative [ç].

**wird das *m* von Χnum,  
in Χνοῦβι θεῶ̇ geweiht; ir**

**Figure 3.** Here is an example of Lepsius distinguishing GREEK CAPITAL CHI and LATIN CAPITAL CHI in roman and italic type. The shape of the italic LATIN CAPITAL CHI is not used in Greek.

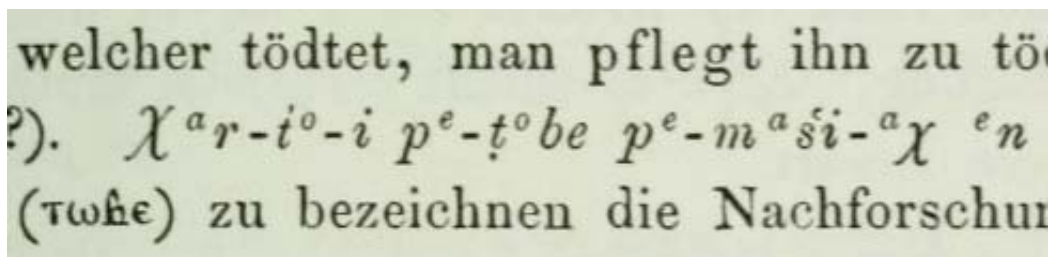
Unterschiede der hier zu beachten war zwischen solchen Compositionen, die wie *ε τ pf* durch Assibilirung der lokal entsprechenden Tenuis gebildet werden, und die man daher in einer gewissen Beziehung als consonantische Diphthonge auffassen kann, kehrt hier auch die häufige Verwechslung von Tenuis und Aspirata wieder, deren Unterschied meines Wissens noch nirgends richtig und genau angegeben worden ist und auf den ich daher hier etwas näher eingehen will. Die griechischen Buchstaben φ χ θ erhielten erst spät die jetzt gebräuchliche Aussprache *f χ θ*, und waren ursprünglich wirkliche aspiratae, d. h. tenues mit einem nachfolgenden πνεύμα δασύ verbunden, genau so wie wir jetzt in Norddeutschland *pa ka ta* in Palme, Kanne, Tafel aussprechen. Ich wüßte nicht, wie wir das *t* in *das Tau* oder *der Thau*, mit oder ohne *h* geschrieben, noch mehr aspiriren könnten, als wir thun. Daher schrieben die Römer *ph kh th*, und ebenso die Aegypter den Namen des Philipp Aridaeus in Hieroglyphen nicht mit ihrem *f*, das sie so gut hatten wie die Römer, sondern bald mit *ph*, bald mit *p* allein, und ebenso die Namen Philotera, Tryphaena u. a. mit *p*. Die Griechen konnten daher auch φ χ θ nicht verdoppeln, sondern mussten dafür πφ, κχ, τθ schreiben, weil die Aussprache dies nothwendig verlangte (\*). Die wahren Tenues werden voll-

**Figure 4.** Here is an example showing how Lepsius also distinguishes the three Latin letters *f χ θ* from the Greek letters φ χ θ:

32	Χaru, Reten, and Šasu by Daniel Hy Haigh.		[Januar u. Februar
Θμῶσις	9. 8.	1449. Jan.	Thothmes IV.
		1444. Jan.	„ and Amunhotep III.
Ἀμένωφις	30. 10.	1440. Sept.	Amunhotep III.
Ἔωρος	36. 5.	1409. July.	Amunmes } I believe that these reigns Amuntutanχ } are included in the 36. 5. Ai (?) } assigned to Horemheb. Horemheb.
Ἀκεγχρήσις	12. 1.	1373. Dec.	(no monuments).

**Figure 5.** The journals *Zeitschrift für ägyptische Sprache und Altertumskunde* and *Abhandlungen der Königlich Akademie der Wissenschaften* used glyphs made for Lepsius’ Standard alphabet, in both upper-case and lower-case. Again his GREEK CHI and LATIN CHI differ.

Egyptologists adopted Lepsius’ system for transcribing Egyptian hieroglyphs, which used his LATIN CHI from 1875 to 1889, but other journals which did not have Lepsius’ Latin sorts used Greek sorts instead. Lepsius’ transcription system is still used today by Egyptologists and although χ has been replaced by *h*; *Χaru* and *Amuntutanχ* above would now be written *Haru* and *Amuntutanh*.



**Figure 6.** Example of Lepsius’ LATIN CAPITAL LETTER CHI and LATIN SMALL LETTER CHI in transcription of ancient Egyptian.

tundirhum; lā yuḡminūna. 6. Ḥatama ʾllāhu ʾalā qulūbihim, wa ʾalā samʿihim, wa ʾalā absārihim yišāwatun, wa lahum ʾadābun ʾadīmun. 7. Wa minā ʾl-nāsi man yaqūlu: āmannā bi ʾllāhi wa bi ʾl yaumi ʾl āḡiri, wa mā hum bimūminīna, 8. yuḡādišūna ʾllāha wa ʾladīna āmanū, wa mā yaḡdašūna illā anfasahum, wa mā yaššurūna.

**Figure 7.** Example from Lepsius 1863:245 showing LATIN CAPITAL LETTER CHI and LATIN SMALL LETTER CHI in his Standard Orthography transcription of Arabic.

Juse ama eme-i saiin `eḡe babe kemuni soikolome yabumbi. Saḡaku bitḡe-be ḡulači saiin guču-be baḡa gese, ḡulaḡa bitḡe-be sabuči fe guču-be ačaḡa gese. ḡančikiḡe-be urḡuḡebu Kūḡe-i ḡenduḡeḡe. Sinagan-de dakilara aḡala gosiḡolo. Manḡu bitḡe-be urunaku urebu akuči Nikan bitḡe-be ḡaf<sup>4</sup>kijame ḡe-ḡukeleme mutembio.

**Figure 8.** Example from Lepsius 1863:245 showing LATIN CAPITAL LETTER CHI and LATIN SMALL LETTER CHI in his Standard Orthography transcription of Manchu.

w	frz. bilabio-velar <i>oui, fouet, roi.</i>	z	frz. <i>zéro, maison.</i>
	dtsch. nur bilabial <i>weiss.</i>	ž	frz. <i>jardin, langage.</i>
v	frz. <i>vivant.</i>	y	frz. <i>les yeux, bien,</i> dtsch. <i>jetzt.</i>
ð	stimmhaft engl. <i>father.</i>	ŷ	frz. <i>nuit.</i>
θ	stimmlos engl. <i>bath.</i>	χ	dtsch. <i>ich.</i>
s	frz. stimmlos <i>cesser.</i>	x	dtsch. <i>ach,</i> schwd. <i>šlùkxə.</i>
	dtsch. stimmlose Lenis <i>Eisen.</i>	ñ	frz. <i>gagner.</i>
ss	dtsch. stimmlose Fortis <i>heiss.</i>	η	dtsch. <i>singen.</i>
š	frz. <i>chat,</i> dtsch. <i>Asche.</i>	λ	mouilliertes l ital. <i>figlio.</i>

**Figure 9.** In 1912 Ernst Tappolet used GREEK CHI and LATIN X in *Die alemannischen Lehnwörter in den Mundarten der französischen Schweiz* (1913) Tappolet uses x for [x] and χ for [ç]. This is the typical Teuthonista usage, where the chi is used for the palatal consonant.

In the 1970s, Werner König devised additional symbols ( $\chi$ ,  $\chi$ ,  $x$ ,  $x$ ,  $x$ ,  $x$ ) derived from both LATIN CHI and LATIN X, based on the original usage of these for [ç] and [x] respectively in Teuthonista transcription. In the 1980s Bernhard Kelle added them to TeuTEX using what was available. Many linguistic atlas projects have been using TeuTEX since that time, including *Sprachatlas von Bayerisch-Schwaben* (SBS), *Sprachatlas von Oberbayern* (SOB), and *Sprachatlas von Niederbayern* (SNiB).

c) Zwischenwerte bei den palatalen/velaren Reibelauten

$\chi^2$	extrem palataler Reibelaut
$\chi''$	präpalataler (stimmloser) Reibelaut
$x^2$	Reibelaut, dessen Artikulationsort sich in Richtung Palatum verschiebt, Realisierung identisch mit $x$
$\mathcal{X}$	Reibelaut zwischen $\mathcal{X}$ und $x$
$\mathcal{x}$	Reibelaut zwischen $\chi$ und $x$

**Figure 10.** Example from König 1997:164 (SBS) showing LATIN CHI, LATIN X, LATIN X WITH LONG LEFT LEG AND SERIF, LATIN X WITH LONG LEFT LEG, and LATIN CHI WITH LONG LEFT LEG AND SERIF. The



description says that  $\chi'$  is used for an extremely palatal fricative,  $\chi''$  for a pre-palatal (voiceless) fricative,  $x'$  for a fricative whose place of articulation is shifted toward the palate (identical with  $\chi$ ),  $x$  for a fricative between  $\chi$  and  $x$ , and  $\chi$  for a fricative between  $\chi$  and  $x$ .

## 2. Reibelaute

### a) Grundwerte, stimmlos

Lenes	Fortes	Geminaten	
$v$	$f$	$ff$	Labiodentale
$s \check{s}$	$f \check{f}$	$ff \check{ff}$	Dentale/Alveolare
$\chi$	$\chi$	$\chi\chi$	Palatale („ich-Laute“)
$\mathfrak{X}$	$\mathfrak{X}$	$\mathfrak{X}\mathfrak{X}$	Zwischen palatal und velar
$x$	$x$	$xx$	Velare („ach-Laut“)

**Figure 11.** Example from König 1997:167 (SBS) showing LATIN CHI (weak palatal fricative), LATIN CHI WITH LOW RIGHT RING (strong palatal fricative), LATIN X WITH LONG LEFT LEG (weak palato-velar fricative), LATIN X WITH LONG LEFT LEG AND LOW RIGHT RING (strong palato-velar fricative), LATIN X, (weak velar fricative) and LATIN X WITH LOW RIGHT RING (strong velar fricative), that is,  $\chi$ ,  $\chi$ ,  $x$ ,  $\mathfrak{X}$ ,  $x$ , and  $x$ . Note that the distinctiveness of LATIN CHI as compared with LATIN X is shown clearly by the end-to-end distance of the upper arms: From tip to tip the distance is 2.5mm for  $\chi$ , but only 2mm for  $x$  (at this point size).

seit 1.5.1973: Lkr. Amberg-Sulzbach. 1987:  
D., 34 Einw., 11 Wgb., ma. leiχdņék<sup>h</sup> [S].  
Um 1300 hat der Truchseß von Sulzbach

**Figure 12.** In a Teuthonista context, here is a LATIN CHI similar to the one used by the International Phonetic Association. From Hans Frank, Cornelia Oelwein and Robert Schuh, 2002, *Sulzbach-Rosenberg: ehemaliger Landkreis Sulzbach-Rosenberg*.

International Phonetic Association uses  $x$  for [x], but  $\chi$  does not have the Teuthonista usage of the palatal fricative [ç], but rather that of the uvular fricative [χ].

$x$  end  $\chi$  əpɪə tə bɪ sɛprət founimz, bət  $x$  dɒz nɒt əkɜr ɪn ðɪs  
tɛkst. ɛn ɪgzɑmpl əv ðɪs saund ɪz **axxəxpɒq** (əproutf).  
ðɛər ɑ faɪv vauəl founimz, nɛɪmlɪ ɪ, e, a, o, u. ðɛɪ əl əkɜ lɔŋ  
ənd fɔt. wɛn fɔlud bɑɪ ə juvjulə kɒnsɒnt, sɛbsɪdjəri juvjuləraɪzd  
mɛmbɛz əv ðɪ e, a, o founimz ɑ juzd, nɛɪmlɪ ɜ, a, ə.  
nidlɛs tə sɛɪ, ɪt ɪz pɒsɪbl tə dɪstɪŋgwɪʃ mɛnɪ ʌðə nɒn-sɪgnɪfɪkənt  
vauəl-fɛɪdz; fɛr ə fulə dɪskrɪpsɪn əv ðɪz, sɪ *A Phonetical Study of  
the Eskimo Language*.<sup>1</sup>  
wɛn lɛŋθənd, ɪ ənd u bɪkɑm slɑɪtlɪ mɔr ɔupən, ənd əproutf e  
ənd o. e ənd o hæv ðə klɔus vɛljuz əv frɛnf e ənd o.  
ano'be sɛqɪ'nɛχɔ 'assɔb'to:pput ɑχɪɪɪt'tɪk kɪnɑ nɑ'ko:nɛ-  
'russɛsɔq 'pɪɪɪyɔ . 'taɑβɑ ,ɛŋjɛlɛ'sɔq 'qɑ:ti'yo:minɪk ulɪ,sɔbɪsɪ-

**Figure 13.** Text from a 1934 edition of *Le Maître Phonétique* distinguishing [χ] from [x]. Note the Latin shape of the former in this description of Greenlandic phonology.

Fricative . . . | ϕ β | f v | θ ð | s z | ʃ ʒ | ʂ ʐ | ɕ ɟ | | x γ | χ ɣ | ħ ʕ | h ɦ

**Figure 14.** From the 1949 IPA chart, showing LATIN CHI.

The original design of the IPA explicitly disunified Greek and Latin letters:

(c) The non-roman letters of the International Phonetic Alphabet have been designed as far as possible to harmonise well with the roman letters. The Association does not recognise makeshift letters ; it recognises only letters which have been carefully cut so as to be in harmony with the other letters. For instance, the Greek letters included in the International Alphabet are cut in roman adaptations. Thus, since the ordinary shape of the Greek letter β does not harmonise with roman type, in the International Phonetic Alphabet it is given the form β.

**Figure 15.** Text from the 1949 IPA Handbook describing the disunification of Greek and Latin type for IPA usage.

This intended disunification continued for decades before the digital age:

A good source from which letters can be borrowed is the Greek alphabet, and β γ ε θ ϕ χ, for example, have been made use of for centuries in roman-based phonetic notations. Borrowed Greek letters are sometimes redesigned so as to fit in with the general appearance of roman letters. The preceding six characters, for example, have for this reason been modified as follows: β γ ε θ ϕ χ. The Cyrillic alphabet can also offer possible new characters, such as ѣ, and the script form ъ.

**Figure 16.** Text from David Abercrombie’s 1967 *Elements of General Phonetics* describing the disunification of Greek and Latin type for IPA usage.

As can be seen in Figures 14, 15, and 16, LATIN LETTER CHI was explicitly disunified from Greek by the devisers of the IPA.

However, at present, the recommendations of the International Phonetic Association are to accept the long-standing unification and to use the Greek letter [χ] for the uvular fricative. It may be the case that the Association decides to affirm the use of the Greek letter in their recommendations for the future. Nevertheless, the character LATIN SMALL LETTER STRETCHED X has been accepted for encoding in the Universal Character Set for the Teuthonista usage, and since in Teuthonista usage LATIN SMALL LETTER CHI and its derivatives are distinct from LATIN SMALL LETTER X and its derivatives, the Irish National Body requests that the correct name of the characters be applied.

Even if the name were not changed, the identity of these three characters will still require a choice on the part of the International Phonetic Association. That will happen one way or another. Naming the three characters in question CHI will not force the Association to change their recommendation: that will be done (or not) on the basis of consideration of all the ramifications. But naming the characters CHI will correctly identify them *vis à vis* their history; the designation “STRETCHED X” is a misnomer.

Here is a comparison between LATIN X, GREEK CHI, and LATIN CHI:

X x ~ X χ ~ X X  
X x ~ X χ ~ X x

And finally, to summarize, the change requested is from:

AB53 X x LATIN SMALL LETTER STRETCHED X  
AB54 X x LATIN SMALL LETTER STRETCHED X WITH LOW RIGHT RING  
AB55 X x LATIN SMALL LETTER STRETCHED X WITH LOW LEFT SERIF

to:

AB53 X x LATIN SMALL LETTER CHI  
AB54 X x LATIN SMALL LETTER CHI WITH LOW RIGHT RING  
AB55 X x LATIN SMALL LETTER CHI WITH LOW LEFT SERIF

From this set of glyphs:

X X X - x x x

to this set of glyphs:

X X X - x x x

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