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 <u>http://www.dkuug.dk/JTC1/SC2/WG2/docs/principles.html</u> for guidelines and details before filling this form. Please ensure you are using the latest Form from <u>http://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html</u> . See also <u>http://www.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html</u> for latest <i>Roadmaps</i> . A. Administrative					
1. Title: Proposal to Encode Additional Latin Phonetic and Orthographic Characters					
2. Requester's name: Lorna A. Priest, Peter G. Constable					
3. Requester type (Member body/Liaison/Individual contribution): Individual contribution	_				
4. Submission date: <u>31 March 2005</u>					
5. Requester's reference (if applicable):	_				
6. Choose one of the following:	_				
This is a complete proposal: Yes	_				
or, More information will be provided later: <u>No</u>	_				
B. Technical – General					
1. Choose one of the following:					
a. This proposal is for a new script (set of characters): No	_				
Proposed name of script:	_				
b. The proposal is for addition of character(s) to an existing block: Yes	_				
Name of the existing block: Modifier letters, Latin Extended, Combining Diacritical Marks					
2. Number of characters in proposal: 13					
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. Proposed Level of Implementation (1, 2 or 3) (see Annex K in P&P document): 3					
Is a rationale provided for the choice?					
If Yes, reference:	_				
5. Is a repertoire including character names provided? Yes	_				
a. If YES, are the names in accordance with the "character naming guidelines" Yes	-				
in Annex L of P&P document?					
b. Are the character shapes attached in a legible form suitable for review? Yes	-				
6. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard? SIL International	—				
If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:	_				
7. 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					
8. 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, suggested character properties are included, as are lower case representations (see section D)					
9. 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 behavious 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 http://www.unicode.org for such information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.	our,)				

¹ Form number: N2652-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11)

Proposal to Encode Additional Latin Orthographic Characters Lorna A. Priest & Peter G. Constable April 20, 2005

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, Yes user groups of the script or characters, other experts, etc.)? If YES, with whom? linguists If YES, available relevant documents: Email correspondence. See also References. 3. Information on the user community for the proposed characters (for example: Yes size, demographics, information technology use, or publishing use) is included? See comments in Section E Reference: 4. The context of use for the proposed characters (type of use; common or rare) Common Orthographic characters are used in literacy materials, liturgical books and general Reference: literature. Upstep and downstep characters are used in linguistic writing. 5. Are the proposed characters in current use by the user community? Yes If YES, where? Reference: See comments in Section E 6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP? Preferably If YES, is a rationale provided? If YES, reference: If possible, should be kept with other related blocks in the BMP. 7. Should the proposed characters be kept together in a contiguous Preferably together with other related blocks range (rather than being scattered)? 8. Can any of the proposed characters be considered a presentation form of an existing No character or character sequence? If YES, is a rationale for its inclusion provided? If YES, reference: 9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? No If YES, is a rationale for its inclusion provided? If YES, reference: 10. Can any of the proposed character(s) be considered to be similar (in appearance or function) No to an existing character? If YES, is a rationale for its inclusion provided? If YES, reference: 11. Does the proposal include use of combining characters and/or use of composite sequences? Yes 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? If YES, reference: 12. Does the proposal contain characters with any special properties such as No control function or similar semantics? If YES, describe in detail (include attachment if necessary) 13. Does the proposal contain any Ideographic compatibility character(s)? No If YES, is the equivalent corresponding unified ideographic character(s) identified? If YES, reference:

D. Proposed Characters

C. Technical - Justification

A code chart and list of character names are shown on a new page.

D.1	. Propo	osed Characters
	xx00	
0	!	
1	i	
2	t	
3	t	
4	•	
5	=	
6		
7	D	
8	ŋ	
9	3	
A	4	
в	W	
с	W	
D		
Е	ं	
F		

xx00	MODIFIER LETTER AFRICANIST DOWNSTEP
xx01	MODIFIER LETTER AFRICANIST UPSTEP
xx02	MODIFIER LETTER RAISED UP ARROW
xx03	MODIFIER LETTER RAISED DOWN ARROW
xx04	MODIFIER LETTER COLON
xx05	MODIFIER LETTER SHORT EQUAL
xx07	LATIN CAPITAL LETTER ALPHA
XXU7	lowercase is U+0251 a LATIN SMALL LETTER ALPHA
xx08	LATIN CAPITAL LETTER M WITH HOOK
xx09	LATIN LETTER TRESILLO
xx0A	LATIN LETTER CUATRILLO
xx0B	LATIN CAPITAL LETTER W WITH HOOK
xx0C	LATIN SMALL LETTER W WITH HOOK
xx0F	COMBINING DOUBLE DIAERESIS

D.3. Unicode Character Properties

xx00..xx05 should have a general category of Lm. Other properties should match those of similar characters, such as U+02BC MODIFIER LETTER APOSTROPHE.

xx07, xx08, and xx0B should have a general category of Lu. Other properties should match those of similar characters, such as U+0041 LATIN CAPITAL LETTER A.

xx0C should have a general category of LI. Other properties for this character should match those of similar characters, such as U+0061 LATIN SMALL LETTER A.

xx09 and xx0A should have a general category of Lo. Other properties for this character should match those of similar characters, such as U+01C0 LATIN LETTER DENTAL CLICK.

xx0E should have a general category of Mn. Other properties for this character should match those of similar characters, such as U+035D COMBINING DOUBLE BREVE.

E. Other Information

E.1 Modifier Letters

IPA includes two symbols to indicate tonal downstep (see Figure 1, Figure 3 and Figure 4) and tonal upstep (see Figure 1 and Figure 5). These are IPA symbols 517 and 518 respectively.

The IPA Handbook cites these, and indicates that they can be represented in Unicode using the characters U+2193 DOWNWARDS ARROW and U+2191 UPWARDS ARROW:

() (†	accent (over) Down arrow Up arrow	Downstep Upstep		517 518	2193 2191	EEAF EEAD	
٦	Extra-high tone	Extra high level	ma٦	519	02E5	E28D	
Figure 1	. MODIFIER LETTER F	RAISED UP ARROW / I	MODIFIER LE	TTER RAISED D	OWN AR	ROW (IPA 19	99, p. 184)

However, the UCS characters U+2193 and U+2191 are full-height arrows, whereas the IPA symbols for downstep and upstep are raised, half-height arrows. IPA has full-height arrows as distinct symbols, used to represent ingressive versus egressive airflow in disordered speech; these are IPA symbols 661 and 662. These are also cited in the IPA Handbook, as shown in Figure 2. Note that in the IPA set these full

arrows for indicating airflow have distinct names and numeric identifiers from the raised, half-height

Down full arrow	[1]	Ingressive air flow	661
Up full arrow	[↑]	Egressive air flow	662

Figure 2. IPA full-height arrows for ingressive / egressive airflow (IPA 1999, p. 189)

Accordingly, we consider it necessary that separate characters for the two pairs of arrow be encoded in the UCS. The existing characters, U+2193 and U+2191, are appropriate characters for representing IPA symbols 661 and 662. (Note that Unicode includes annotations for these characters indicating their use in IPA to indicate egressive and ingressive airflow.) Thus, we propose the addition of two new characters to represent the raised, half-height arrows used in IPA for tonal downstep and upstep: MODIFIER LETTER RAISED UP ARROW and MODIFIER LETTER RAISED DOWN ARROW.

arrows used for downstep and upstep.

The following addition samples illustrate these modifier letters in attested usage:

Transcription of recorded passage

ikuku úgụrụ na á⁴ŋwú naarúrítá 4⁴kà ópé 4⁴ká íbe já íké mgbe há hụrụ ótu ópé íd3e ka ó ji uwé úgụrụ já náabíá. há kwekoritara na ópé ⁴buru úzo méé ka ópé íd3e áhų jípụ uwé ⁴ja ka á ga éwe dí ka opé ka íbe já íké. ikuku úgụrụ wéé malíté féé, féé, otu íké ⁴já ha; ma ka ó na efé ka ópé íd3e áhų na ed3idési ⁴úwé ⁴já ⁴iké na ahú ⁴já. já fékatá hápụ. mgbe áhų a⁴ŋwú wéé t∫áputá, t∫ási⁴ké méé ka ebe níi⁴lé kporó ó⁴kų ná⁴átufuyi óge opé íd3e áhų jipµrų uwé ⁴já ŋké a mere ikuku ųgµrų kwere na a⁴ŋwų ka já íké.

Figure 3. MODIFIER LETTER RAISED DOWN ARROW (IPA, 1999, p. 110)

Grammatical contrast

Progressive aspect

àákòn á dêp òf ðŋ.	'Akon is buying (a) dress.'
àákòn á wêt ŋ̀wèt.	'Akon is writing (a) book/letter.'
Completive aspect àákòn a ¹á dép òfòŋ. àákòn a ¹á wêt ỳwèt.	'Akon has bought (a) dress.' 'Akon has written (a) book/letter.'

Basic tones on the verbs used to illustrate grammatical tone in Ibibio are H and L, thus: dép 'buy' and wet 'write'.

Verbs have two tone classes H and L. Disyllabic verbs have predictable high tone on the final syllable in isolation and in simple declarative sentences. Tone patterns in nouns are more variable. High ($^{\prime}$), Low ($^{\circ}$) and the downstep feature (4) are marked. Where long vowels have identical tones, only the first vowel is marked with a tone.

Figure 4. MODIFIER LETTER RAISED DOWN ARROW (Urua, 2004, p. 108)

[dyāčī yá <mark>]t</mark>á] MM H U 'the dust will blow away'

The derivation for this example parallels that of the preceding example except that in this case, the application of Hi-Spread brings two *hs* into adjacency on the TBU tier, and upstep occurs.

One possible alternative to this analysis is that the floating Hi tone simply upsteps everything to its right, i.e., the surface tone of yarka in (125) is simply the sequence Lo-Hi upstepped. However, if what Pike and Wistrand

Figure 5. MODIFIER LETTER RAISED UP ARROW (Snider, 1999, p. 111)

Africanist linguists have their own preferred conventions for indicating upstep and downstep, which are different from the IPA-recommended symbols. Tonal downstep is indicated by Africanists using a superscript exclamation mark, as illustrated in Figure 6 to Figure 11. For upstep, an inverted exclamation mark is used, though in some publications this is superscripted (see Figure 8), while in others it is

subscripted (see Figures 6–7 and Figures 9–11). Because of these glyph variants, we have propsed character names that avoid reference to the visual position of the inverted excalamation. An alternative would be to encode *three* characters: MODIFIER LETTER RAISED EXCLAMATION MARK, MODIFIER LETTER RAISED INVERTED EXCLAMATION MARK, and MODIFIER LETTER LOW INVERTED EXCLAMATION MARK.

occurs. In (17), the underlying tones are placed below each utterance, and the surface realizations are indicated above. The symbols ¹ and ¹ indicate downstep and upstep, respectively.

Figure 6. MODIFIER LETTER AFRICANIST DOWNSTEP and MODIFIER LETTER AFRICANIST UPSTEP (Snider, 1993, p. 13)

I go on to explore the applicability of my total downstep treatment to two tonally well-documented languages which resemble Akan in having (at least) the three-way contrast [0 down]/[1 down]/[2 down] after a high tone, but which differ from Akan in also having a three-way contrast [-2 down]/[-1 down]/[0 down] after a low tone; Akan, of course, while it has the three-way contrast [HH][0 down]/[H¹H]]1 down]/[H¹L]]2 down] after [H], has only the two-way contrast [LH][-1 down]/[LL][0 down] after [L]. The first of these two languages is Dschang, which, like Akan, is a downstep language by any definition, and the second Ebrié, which, although it has many of the characteristics of a downstep language, appears on the surface to be a discrete level tone language with three tone levels.

I suggest that the tone systems of these languages differ from that of Akan basically in that they do not have the tonal segment structure condition which in Akan disallows the [+high, +stepping] segment h, and that their [-2 down] is analysable as LhH $[[L_iH]]$ (i = upstep) just

Figure 7. MODIFIER LETTER AFRICANIST DOWNSTEP and MODIFIER LETTER AFRICANIST UPSTEP (Snider, 1993, p. 187)

Pitch lowering can be contrastive (and is then termed downstep), as in Kenyang (Mamfe Bantu: Cameroon), where the site of pitch lowering is notated with .

(28) [é^{*}béy [']mé[']mwét] "it hurts me" – _ _

Upstep (pitch raising) also exists. In Kimatuumbi (Bantu: Tanzania), adjacent H tones are separated by upstep (notated with i).

(29) baatíilyá kíndyé "they ate the birds"

Figure 8. MODIFIER LETTER AFRICANIST DOWNSTEP and MODIFIER LETTER AFRICANIST UPSTEP (Odden, 1995, p. 452)

									'in-law's word'
									'in-law's thing'
9.	[á	+	m-myei]	+	'bì	+	m'mye pi'	HMHÎL	'girls' drum'
Figure 1993,				ER	AFRICA	VIST	DOWNSTEP and	MODIFIE	R LETTER AFRICANIST UPSTEP (Steward,

17.	/àpà	á + ndzwi/	\rightarrow	[àpà ǹ [!] dzwì]	bag of leopard
18.	/àpà	á + ýkuð? (/	\rightarrow	[àpà ŷ [!] kʉò?°]	bag of rooster
19.	/àpà	á + m̀bhú`/	\rightarrow	[àpà!á ḿbh ú]	bag of dog
20.	/àpà	á + ntsón/	\rightarrow	[àpà!a ńtsóŋ]	bag of thief
21.	/làsòŋ´	é + ndzwi/	\rightarrow	[làsòŋ n [!] dzwì]	tooth of leopard
22.	/làsờŋ´	é + ŋ̀kʉò?´/	\rightarrow	[làsòŋ (ŋˈl͡/ʉòʔ°]	tooth of rooster
23.	/làsờŋ´	é + m̀bhú`/	\rightarrow	[làsòŋ [!] ń ḿbhʉ́]	tooth of dog
24.	/làsờŋ´	é + ntsóŋ/	\rightarrow	[làsòŋ [!] ń ńtsóŋ]	tooth of thief
25.	/àpú`	á + ndzwi/	\rightarrow	[à [!] pú ńdzwì]	arm of leopard
26.	/àpú`	á + ŋkuð? /	\rightarrow	[à [!] pú ýkuò?"]	arm of rooster
27.	/àpú`	á + m̀bh ú `/	\rightarrow	[à [!] pú ḿ [!] bh ú]	arm of dog
28.	/àpú`	á + htsóŋ/	\rightarrow	[à [!] pú ń [!] tsóŋ]	arm of thief
29.	/làtáŋ	é + hdzwi/	→	[làtáŋ ńdzwì]	feather of leopard

Figure 10. MODIFIER LETTER AFRICANIST DOWNSTEP (Pulleyblank, 1986, p. 43)

bálâ 'the balaphone'	bálá dôn 'it's a balaphone'	bálá té 'it's not a
		balaphone'
	bálá dòn 'it's the balaphone'	ball it's not the
한 한 휴 값 가 한 것 같	말 이번 물 물 것이 한 것 물 것이 ?	balaphone'
bàlâ 'the porcupine'	bàlà dôn 'it's a porcupine'	bàlà té 'it's not a porcupine' bàlà 'té it's not the
•	bàlá dòn 'it's the porcupine'	bàlà de it's not the porcupine

Figure 11. MODIFIER LETTER AFRICANIST DOWNSTEP (Heine, 2000, p. 154)

MODIFIER LETTER COLON and MODIFIER LETTER SHORT EQUAL are orthographic characters used for writing tone. Both are used in one or more languages of Congo (Budu); MODIFIER LETTER COLON is also used in at least one language in Kenya (Sabaot) and at least one language in Papua New Guinea (Kunzi-Boazi).

These characters are used in the orthographies of these languages to write *grammatical* tones. For instance, in the Budu language, MODIFIER LETTER COLON indicates past tense, whereas MODIFIER LETTER SHORT EQUAL indicates future tense; in the Sabaot language, the MODIFIER LETTER COLON functions as a subject marker.

These characters are distinct from the similar punctuation colon and equal sign characters. They are used as word-forming characters; so, for instance, they should never indicate a word boundary. Also, their graphic appearance is specifically distinct from the colon and equal sign:

- Compared with a typical colon glyph, the dots of the MODIFIER LETTER COLON should be closer together, and the side bearings should be narrower. (Note that the sample in Figure 15 is not as good an examplar in this regard as the other samples.)
- Compared with a typical glyph for the equal sign, the MODIFIER LETTER SHORT EQUAL is rather shorter.

The following figures demonstrate attested usage of these characters:

Ezoqa TiBi enqoni tømbogoat, yaq ndego kap neka melek neka sipuni vini bembogó. Teqa kap neka melek neka sipuni ezoqa nøme betelògē. Ndego TiBi enqoni-us ezoqam ekhapús segé:logát. Soqaín ndøgo, ezoqa nøme TiBi enqoni tendap.

Figure 12. MODIFIER LETTER COLON (Fumey, 2001, p. 14) [Kuni-Boazi language].

gezøfakhanumam, khøuwa foti-te, neka Mbumbukiam-qa megeat matev-qa yaq-te võezømas. Áv ge:matanam ndægo, zapa ndǿgo, ndigu tiabetezøtéz av nqægo, ndego unimanqatín møndøkhandí:v.⁴ Khøuwa nøme, Yesu ti namba gegoam, ndego áv gezømbeeín nqægo, "Zelusalem taon naqaneká ndøivòvēm. Geté bazafagakh ndøgo, no qæzømbemanqatam, taqá tozombøekhækewagát, ta

Figure 13. MODIFIER LETTER COLON (Fumey, 2004, p. 1) [Kuni-Boazi language]

The Sabaot Language Committee has agreed to use the markets a 'subject mark' to be added to the noun, when it functions as subject in the sentence. Therefore, when we write the and it means that 'his father' did something, but when we write just kwaan, it means that something was done to 'his father'. The two sentences above can now be written clearly and exactly as follows: 1. Kämwoochi kwaan. 2. Kāmwoochi :kwaan. Now try the following exercise: Exercise 11: Translate the following sentences into English. 1. Kikas bëëlvoontëët wiikiit koonyc. 2. Yu kakas :beelyoonteet, kulabatyi keey :boonteet. 3. Kobakach breng'uut lang'at. 4. Keekööten :beelyoonteet mureneet. Keekööten beelyoonteet :mureneet. 6. Murënëët nyëë kibakaakta koorkëët. 7. Murënëët nyëë kibakaakta :koorkëët. Figure 14. MODIFIER LETTER COLON (BTL, 1990, p. 15) [Sabaot language]

Kapelenaumu, aju wayo-sa bo ba-naditiso kubuya ekoo u bisi bie? Chukoo, ba-nijiso kubuya tu ku aku upia ngua wa esi nadhindi.»

¹⁶Yeso a:sigio tiga bakpataka bango bo: «Mombi ngia a ninu kuko inu, a neme ku kuko eme. Mombi ngia a ninu kutata inu a neme ku kutata eme. Nu mombi ngia a neme kutata eme, a ku kutata mombi ngia a:natuma eme.»

Tua ngia yi bakpataka makumi umalianika

17 Bakpataka ngibunani makumi umalianika ba:tua buhueni nu Figure 15. MODIFIER LETTER COLON and MODIFIER LETTER SHORT EQUAL (WBT, 2000, p. 47) [Budu language].

¹⁹Kija malaika wa:mutisio bo: «Eme ma Gabhilieli. Eme ku maakyia bumai apee u Asubii. Iyo unatuma nuwe kubia isau yee ido ngia. ²⁰Una, moni ngika kuseme ka-kyiania aku wati wongo. Ndu wubhaya komu moni ngika kuseme, wa-bio tu ku ijangi; wambukubio tii bata kuyaka kubuya bisi ongo tu ku isiya moni ngikunani ka-kyiania-oo.»

Figure 16. MODIFIER LETTER SHORT EQUAL (WBT, 2000, p. 2) [Budu language].

E.2 Latin Extended

LATIN CAPITAL LETTER ALPHA is a phonetic symbol in the Americanist tradition for a voiceless, low central vowel (see Figure 16).

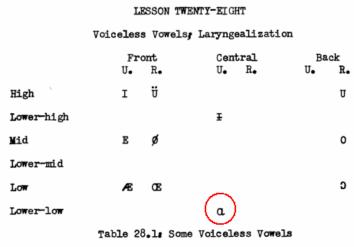


Figure 17. LATIN CAPITAL LETTER ALPHA (Smalley, 1989 p. 392).

Although Pike (1947) and Floyd (1981) do not illustrate the use of this symbol, both make general

reference to the use of capital letters for transcribing voiceless vocoids:

"Voiceless vocoids may be written with capital letters, or letters extra-large in size, such as 'A' and 'O'." (Pike 1947, p. 5)

"Symbolization: VI. vocoids are symbolized by capital letters: [A I O E ...] or by large letters: [1 \times D ...]." (Floyd 1981, p. 37).

This character is also used orthographically in the Fe'efe'e language of Cameroon. Note that LATIN CAPITAL LETTER A is also used in this orthography, so it cannot be considered a glyph variant of LATIN CAPITAL LETTER A.

3- Wen -- là mã ndàh mbaa náh mfhu ko. 4-(1)låh mbaa mfhë ko ze'e ndå' mfhë ---5- Ő láh kwe'le' ndá' no' --- tā náh ndəə mbaa mbă le 17 Are a com Siesi 20 Mfa ' a)nkwe yoh wa' lo nten thu Nhā nku'nī ná zén mfa'; Yãa bá nhā' ngwe' nhā thu. Ná nkwe zu' wä' ntâm lā'. a punok bā ma zhwesi Mfå' nkwe wu ma ca'si

Figure 18. LATIN CAPITAL LETTER ALPHA (Tcheulahie, 1984 p. 50) [Fe'eFe'e language]

LATIN CAPITAL LETTER M WITH HOOK is used in phonetic transcription by some in the Americanist tradition for transcribing a voiceless labiodental nasal stop.



Figure 19. LATIN CAPITAL LETTER M WITH HOOK (Pike, 1976, p.70)

Definition: a sound in which the air passes through the nose but not the mouth.

	Bilabial	Labiodental	Alveolar	Alveo- palatal	Velar	
vl.	М	M	N	Ñ	Ŋ	Nasal wela
vd.	m	ŋ	n	ñ	ŋ	
art:	lips	l. lip	t.tip	t.blade	t.back	

Figure 20. LATIN CAPITAL LETTER M WITH HOOK (Floyd, 1981, p.31)

LATIN LETTER TRESILLO and LATIN LETTER CUATRILLO were used by Jesuit missionaries in the XVIth century to transcribe certain sounds in Mayan languages of Guatemala that do not occur in Spanish. (It is unclear whether the Jesuit missionaries were the inventors of these characters or if they had prior use elsewhere.) In addition to older linguistic descriptions by the Jesuits, these character are also found in recent Mayanist publications when citing data from Jesuit sources (see also: http://scripts.sil.org/RecentCuatrilloUse).

Besides the above, there are five sounds occurring in the Cakchiquel, Quiche and Tzutuhil, for which five special characters were invented, or rather adopted, by the early missionary Francisco de la Parra, who died in Guatemala, in 1560. They are the following :---



Figure 21. LATIN LETTER TRESILLO and LATIN LETTER CUATRILLO (Brinton, 1885).

missionary priests of the era. They were the following: (2) tresillo, an old form of the number three reversed; it represented /q'/, a glottalized pest-velar or uvular stop. (4) cuatrillo, an old form of the number four; it was for /k'/, a glottalized velar stop. (4) cuatrillo con coma, was for / ϕ' /, a glottalized alveolar affricate. (4) combination of cuatrillo and \underline{h} , was for / δ' /, a glottalized alveopalatal affricate.

In actual practice scribes varied widely in their use of these symbols. For example, Figure 22. LATIN LETTER TRESILLO and LATIN LETTER CUATRILLO (Campbell, 1977, p. 121).

As can be seen in Figure 21, there may be additional characters that were used by the Jesuit linguists that will need to be added to the UCS. The need for the two proposed here is clear, however.

LATIN CAPITAL LETTER W WITH HOOK and LATIN SMALL LETTER W WITH HOOK are used in the orthographies of certain languages spoken in Burkina Faso: they are in current use in the orthography of the Puguli language, and the language committee for the Lobiri language also has plans to use this character in their orthography. The orthography guide for Lobiri is in the process of being finalized. These languages have a rare contrast between egressive and ingressive labial semivowels ("w"); hence, these characters are used in these orthographies contrastively with "W" and "w".

Wilo si î buero hũ binu-binure

Figure 23. LATIN CAPITAL LETTER W WITH HOOK (SIL, 2000, cover) [Puguli language]

¹¹Hà wêemà naà tre, 6à lùle ta dùo lacolió re a

Davidii thepàmu jì ire. We hũ wề nuuthié, a

Kirisìi. Càltá hàlaá nt nằ à nt ta ztmì v ha

Figure 24. LATIN SMALL LETTER W WITH HOOK (ANTBA, 2004, p. 2) [Puguli language]

E.3 Combining Diacritical Marks

COMBINING DOUBLE DIAERESIS is used in the Teribe/Naso language of Panama, which uses it centered over a double "el." This orthography was established in November, 2000. A description of the process for decision-making follows [SBP, translation of p. 5]:

Introduction to the Naso alphabet

In the past, many people tried to create an alphabet for the Naso people, but none of these was sanctioned by the internal government of the Naso people as the official alphabet. For this reason, there were several different alphabets.

With the goal of coming up with a single official alphabet that would meet the needs of all of the Naso people, a meeting was held in November of 2000. This meeting was sanctioned by King Tito Santana V. and the leadership of the Naso counsel. Participants were invited from a variety of communities including Dluy, Kûy, Loma Bandera, Santa Rosa, Siey Kjing, Siey Llik, Solong and Changuinola.

During three days, this group studied, discussed and defined the official Naso alphabet. Afterwards, they decided to elect The Naso Language Committee, which continued to work on the Naso dictionary.

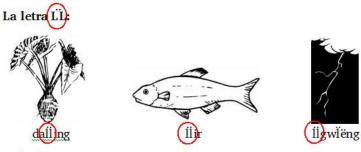
The Naso alphabet that we have today is the result of the work done at this meeting and at several meetings of this committee. This committee also approved the spelling of each Naso word that is used in this book.

COMBINING DOUBLE DIAERESIS can be seen above the double-el in Figures 24 and 25. It is also interesting to note in Figure 25 that COMBINING DIAERESIS is used over a single "el".

Lección 8: La letra

Indicaciones de la lección:

En esta lección estudiamos la letta ll. Se llama "elle naso" o "doble ele naso".



Práctica 1:

Lean estas palabras tres veces. Primero lean individualmente en voz baja. La segunda vez lean juntos en grupo en voz alta. Luego voluntarios pueden leer uno por uno en voz alta.

> dibilgwo patoca doiling bejuco real liebo algo ligwek enderezar

Figure 25. COMBINING DOUBLE DIAERESIS (SBP, 2003, 2005, p. 31) [Naso/Teribe language of Panama]

Kjok wen sorë, e lanyo

1 Kjok ëre dämär lidye jiem obishko ga kjok uun ii shäryara Sbörë. ² Klung ëre igöy liem obi, dlung rong, kjing yët eröe. Eshko ga Sbö Sëyara wir pjang dlung kjing erä, pjiluk wleni.

Dbar kjwara

³ Eni ga Sbö tjl̃ē ga "Kjok, pja ber shjiye" le Üra sorë ga shäryono eni. ⁴⁻⁵ Ĩya ga kjok shjiy beno pjl̃úe. Kjok shjiy kowara "dba", ga kjok sĩ kowara "shkë", ga iara beno dboy dboye. Eshko ga öötong dbar kjwara.

Figure 26. COMBINING DOUBLE DIAERESIS (SBP, 2004, p. 1) [Naso/Teribe language of Panama]

F. References

- Association Nationale pour la Traduction de la Bible et pour l'Alphabétisation. 2004. *A Zèèzi lòla* (La naissance de Jésus (Luc 2:1-20) en langue Pougouli). Ouagadougou 01, Burkina Faso: Association Nationale pour la Traduction de la Bible et pour l'Alphabétisation.
- Bible Translation and Literacy. 1990. *Korooryo ku taay* (Reading and writing Sabaot). Nairobi, Kenya: Bible Translation and Literacy (E.A.)
- Brinton, Daniel G. 1885. *The annals of the Cakchiqueles*. New York: Brinton's Library of Aboriginal American Literature.
- Campbell, Lyle. 1977. *Quichean Linguistic Prehistory*. University of California Publications in Linguistics. Volume 81. University of California Press, Berkeley and Los Angeles, California.
- Floyd, Rick, comp. 1981. *A Manual for Articulatory Phonetics*. Dallas, TX: Summer Institute of Linguistics.
- Fumey, Roland (coordinated by). 2004. *Keliso-gi u upøgim ezoqam-qa emanqat.* The Acts of the Apostles written in the Kuni Dialect of the Kuni-Boazi Language of Lake Murray, Western Province, Papua New Guinea.
- Fumey, Roland and Irene (coordinated by). 2001. Agig enqoni, Tubekulosis o TiBi ndimboakhayam. Kuni Health Book. Ukarumpa, EHP, Papua New Guinea: Kuni Language, Lake Murray, Western Province, Papua New Guinea.
- Heine, Bernd and Derek Nurse. 2000. *African Languages: An Introduction*. United Kingdom: Cambridge University Press.
- International Phonetic Association. 1999. *Handbook of the International Phonetic Association.* Cambridge University Press.
- Odden, David. 1995. "Tone: African languages." *The handbook of phonological theory* (*Blackwell handbooks in linguistics*, 1), ed. by John A. Goldsmith, 444 75. Oxford: Blackwell Publishers.
- Pike, Kenneth L. 1947. *Phonemics: A technique for Reducing Languages to Writing.* Ann Arbor, MI: The University of Michigan Press.
- Pulleyblank, Douglas. 1986. Tone in Lexical Phonology. Dordrecht: D. Reidel Publishing Company.

SIL. 2000. Bina FEERE. (Calendrier Pougouli).

- Smalley, William A. 1989. Manual of Articulatory Phonetics, Revised edn. University Press of America.
- Snider, Keith. 1999. The Geometry and Features of Tone. Dallas, TX: Summer Institute of Linguistics.
- Snider, Keith and Harry van der Hulst, eds. 1993. The phonology of Tone. Berlin: Mouton de Gruyter.

____. 2004. Sbö Tjlõkwo (El Libro de Génesis en Naso Teribe Primera Edición).

- Sociedad Bíblica de Panamá (SBP). 2003, 2005. *Shji opping kjibokwo lë naso* (Vamos a aprender leer naso). Proyecto de Misión a Nuevas Tribus (MNT).
- Stewart, John M. 1993. "Dschang and Ebrié as Akan-type tonal downstep languages." *The phonology of tone: the representation of tonal register (Linguistic models*, 17), ed. by Harry van der Hulst and Keith Smith, 185 244.
- Tcheulahie, Jean-Baptiste, Etienne Sadembouo and Philippe Njenkam. Collection Propelca, No. 24, 1984. *Tie, nceh, ngəə pepe'* (Postsyllabaire fe'efe'e). Departement des Langues Africaines et Linguistique F.L.S.H., Universite de Yaounde.
- Urua, Eno-Abasi E. 2004. "Ibibio." *Journal of the International Phonetic Association*, 34:1. Cambridge University Press.
- Wycliffe Bible Translators. 2000. *Isatt yee Ido ngia yi LUKA, Evangile selon Luc.* Orlando, FL:
 Wycliffe Bible Translators. Distribution: Projet de Traduction de la Bible et d'Alphabétisation en Langue Budu, CECCA/16, B.P. Isiro. République Démocratique du Congo.