Committee X3L2 Codes and Character Sets
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X3 Secretariat c/o CBEMA, 311 First Street N.W. Suite 500, Wash. DC 20001-2178

Reply to Lloyd B. Anderson
Ecological Linguistics
P.O. Box 15156
Washington, D.C., 20003, USA
(202) 546-5862

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On the Extended Ethiopic Alphabet

Accompanying pages illustrate portions of the extended Ethiopic alphabet.
Comments which follow are based on information received most recently from Prof. Gene Gragg, Oriental Institute of the University of Chicago, who is a specialist in dictionaries, “expressive” vocabulary, and the various languages of Ethiopia, especially the Omotic languages.
The information is currently being sent out to a number of Ethiopians for checking, and feedback will be made available to the relevant code standards committees.

There are three points of special importance to coding Ethiopic, and one more general point.
A. The independently functioning units of the Ethiopic script are consonant letters and vowel marks. Any phonetically reasonable combination of these can in fact be used, even if many are rare and some are irregularly rendered. Many rare but actually occurring forms are omitted from listings, in part because they are formed at will from independent consonants and independent vowels. No one thinks to list the combinations as if they were primary units.

B. An Ethiopic syllabary ordering is dependent on the alphabetic values of the consonants and vowels taken separately. The collating order of one newer added consonant /v/ (column B) is not certain from dictionary materials at my disposal, but Tigrinya /q/ is ordered as identical to /q/, and Oromo retroflex /q/ (columns 1A and 1B) follows ordinary /d/. The order of the fourteen vowels is not in question. None of the vowels are new additions for foreign vocabulary.

C. Even in the most basic, artificially limited Amharic-only form of the alphabet, the forms for the following syllables containing /w/ are included in the normal ordering immediately following the seven vowel series without the /w/ built on each consonant, not all at the end.

\[
\begin{array}{cccc}
qä & quu & qii & qaa \\
kä & kuu & kii & kaa \\
xä & xuu & xii & xaa \\
gä & guu & gii & gaa \\
\end{array}
\]

D. The alternate forms of the /waa/ series are simply that, graphic variants. The problem of graphic variants which are equivalent in terms of information value is one which demands general discussion. It arises also in the case of the Indic alphabets where the lack of a vowel after a given consonant can be indicated in at least four different ways, by a special mark, by the “half” form of a consonant letter, by a subscript consonant form, or by a special “conjunct” combination of two or more consonant letters. Excluding these from basic codings is good. But to pose the problem:

a) There is no question that most rendering forms should be handled automatically inside a computer, as the human users do not want to be burdened with non-distinctive non-information-bearing choices.

b) But occasionally the human user does want to make the choice of surface form.

c) These choices can sometimes be made by choosing different fonts for the same alphabet. In such cases they are not choices of different codes, but of different formats in a sense. The two different forms of retroflex /q/ (columns 1A and 1B) are probably just a font difference.

d) But very rarely, the different surface renderings are distinctive.

e) Special rendering-control codes can effect such distinctions (“non-interacting”, “force-conjunct”, etc.). Their status in the coding and in the software should be that of format effectors?
In the full charts in Ethiopic syllabary order (= alphabetical order), forms shown in rows 7-8-9 and C-D-E are not often given for most consonants. They are however used in some contexts.

1) They appear on the amulets written by Dabtarsas (the traditional market scribes) etc.

2) They are used primarily in “expressive” words (a category much larger than so-called sound symbolism), which are not usually listed in dictionaries. More on this below.

3) Columns which are relatively more frequent include the / f' z' m' / as well as the better-known / q' k' x' g' /.

4) Rows which are rarest include those with /'uu/ and /'oo/ vowels, labeled rows 8 and E in the charts, for the same reasons that these combinations do not normally occur in English. The labial / w / sound often disappears before / u / or / o / but is kept before other vowels / a e i /, as in English

<table>
<thead>
<tr>
<th>who</th>
<th>but</th>
<th>what</th>
<th>which</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ huu/</td>
<td>/ h'at/</td>
<td>/ h'wen/</td>
<td>/ h'wiz/</td>
</tr>
</tbody>
</table>

But in “expressive” vocabulary, the disfavored sequence can in fact occur, as in English

whew! (expression of relief after great effort completed or after tension relaxed)

/ h'uu /

5) They appear as very elegant alternatives, where writers are proving what very great skill they have with the writing system. Even the generally recognized “wa” forms can have this flavor, since

\[
\begin{align*}
\text{h} & \text{p} \\
\text{kwa'aa} & = \text{kow'aa}
\end{align*}
\]

The usual context for finding the sounds [ *o ] in Ethiopic vocabulary (other than expressives) is in Ge'ez verbs with a third-person polite form / -o / added to a form ending in / -u /, as in näggär-ku-wo meaning ‘I spoke to him’. This is however normally written in the first not the second way.

\[
\begin{align*}
\text{gūn} & \text{h} \\
\text{kwoo} & = \text{kowoo}
\end{align*}
\]

6) The “expressive” vocabulary refers to sounds, movements (flip-flop), and the like, and is common in phrases like

f'ii'f'i'ii ala literally “to say f'ii'f'i'ii ”

usually conveyed in English as “to go f'ii'f'i'ii ”
or “to make the sound f'ii'f'i'ii ”
Boxed columns are used for special languages, shaded rows are more suitable for symbolic words, as 2, 0, etc.

Ethiopic alphabet letters as a symbol in proper alphabetical order. Blank cells in rows 7, 9, B, C, D are sometimes used for special words.
<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
<th>Column C</th>
</tr>
</thead>
<tbody>
<tr>
<td>γ</td>
<td>η</td>
<td>θ</td>
</tr>
<tr>
<td>θ</td>
<td>ι</td>
<td>ι</td>
</tr>
<tr>
<td>ι</td>
<td>ι</td>
<td>ι</td>
</tr>
<tr>
<td>ι</td>
<td>ι</td>
<td>ι</td>
</tr>
</tbody>
</table>

Some modern dictionaries include alphabetic letters as their modern equivalents (column 0 and 2). If 0 and 1 space can be used, see the two following sheets. Otherwise, spread out in three rows.

Euharic can also be coded as a syllabary, with all forms in proper alphabetical order.

Occur only in rare or specialized vocabulary (here shown as blank cells).

Note that all consonants can have all 12 of 14 vowels. Even through some are consonant plus (multiplier x consonant code minus consonant) plus (vowel code minus consonant).

The larger letters can be placed anywhere in code space, and the consonant vowel form position in both.

Using only those columns which have letters in the top row, reading along for omitted vowels.

Columns on this page containing also two vowels, and insert into the larger table which follows.

If 0 and 1 space are to be avoided, the more restricted base letter set can be used as in the first four.

Using all columns (column labels in the second row from the top).

The basic codes then serve as an index into the larger tables of renditions which follow.

Irregular forms are then handled by display devices as rendering glyphs or basic character codes.

If coded as an alphabet, the four columns just preceding this text are sufficient.

Note users prefer to think of it as an alphabet with numerous ligatures and irregular forms.

Euharic can be coded either as a syllabary or as an alphabet. Here we show the traditional alphabetic and

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Reply to Lloyd Anderson, Educational Linguistics, P.O. Box 15165, Washington, D.C. 20004

Some alternatives in coding the C.G. (Euharic) alphabet for computers.
Specializing in intuitive designs to fit the patterns of human language and thought, whether typed on a keyboard, presented as visual diagrams, or signed on the hands.

27 February, 1991

Dear friends:

We are participating in international committees which are developing computer code standards to include all alphabets of the world.

We would like to be certain that all of the needs are satisfied for users of Ethioptic script like yourselves. We believe that some of the more rare and "expressive" forms of the Ethioptic alphabets are not yet accommodated.

We have been told that these forms occur especially in words with an expressive flavor, Ethioptic words which are similar to English "flip-flop", "zig-zag", "zoom-zoom", "whoosh", "whew", referring to movements or sounds, and in Amharic used often with the verb ala "to say". There would be similar expressions in other languages of Ethiopia.

Can you give us examples of words using these rarer letter forms?

The letters which we are most interested in are the ones on the next two pages.

Please type them out if you can on your computer, or draw carefully those letters which you cannot type, and send them to us, with some indication of the meaning if that is possible and if possible also the pronunciation written in Roman letters (English letters with diacritics etc.).

The fuller display of the Ethioptic alphabet is on the last three pages, as part of a paper which we are sending to the appropriate code standard committees. We have included all forms which specialists in the various Ethioptic languages tell us do exist or are usable.

If you wish to also read that paper and comment to us, we would of course be happy to send your comments on to the committees.

We do have some questions about proper alphabetical order. We know that the different old letters for /h/ are now ordered together, and the letters for /s/ together. What about the letter for /v/? Where would you expect to find it in dictionaries including foreign loan words? Do you have any other comments on alphabetical order for dictionaries? Have we ordered the letters correctly?

We will do our best to insure that all forms of your Ethioptic script are included in the international standards. You can obviously help us to do this much better than we could do it without you.

Sincerely yours,

Lloyd B. Anderson

P.S. Your speedy reply will be much appreciated.
The image contains a table with rows and columns, and symbols or characters in each cell. The table appears to be related to phonetic symbols or a similar script. The text is mostly in a non-Latin script, which suggests it might be a language other than English. The table columns and rows are labeled with characters and numbers, indicating a structured format for learning or teaching purposes. The exact content or meaning of the symbols would require a clearer view or understanding of the script used.