

On the glyph changes for Kannada Vowels Vocalic L/LL

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L2/17-041 requests to change the glyphs of the Kannada characters for vocalic L/LL. One notes that the Kannada characters are currently shaped almost identical to the Telugu ones:

Kannada	ಉ ಳ್ಱ ಊ ಳ್ಱ
Telugu	ు ు ూ ృ

The clear difference is only in the vowel sign for LL where the Telugu character is a smaller version of its independent letter placed below (just like that of L) but the Kannada sign is not so and seems a copy of the Devanagari glyph for the same.

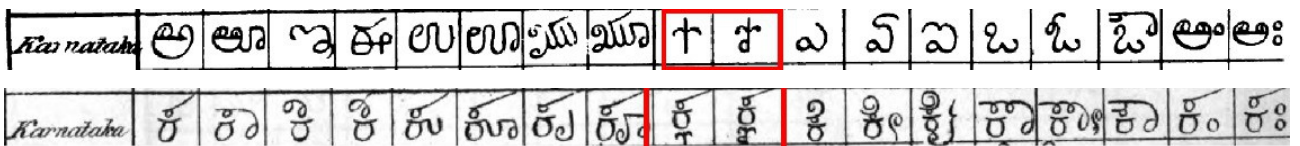
One notes here that the general practice in Indic scripts for vocalic L/LL is in fact to use smaller versions of the full glyph placed below:

Devanagari	ल्ल ॡ ॢ ॣ
Bengali	৳ ৴ ৵ ৶
Gujarati	૳ ૴ ૵ ૶
Oriya	୳ ୴ ୵ ୶
Malayalam	ണ ె ే ై
Telugu	ు ు ూ ృ

The current Kannada glyphs deviate from the above pattern in the case of the long vowels. The glyphs proposed for Kannada are in line with the pattern though:


Proposed	ು ు ూ ృ
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However, the shapes seen in the attestations need some careful examination and standardization.



This is because the sample reproduced above is the only source provided by the proposal that clearly shows the dependent vowels but the shape it shows for the independent vowels is different from the other sources in that it:

1. shows a longer central stem and shorter “tendrils” in the short vowel forms (dep./indep.)
2. does not show the “tail” below the loop in the long vowel forms (dep./indep.)
3. does not show the stroke above the “tendrils” in the dependent vowel forms (short/long)

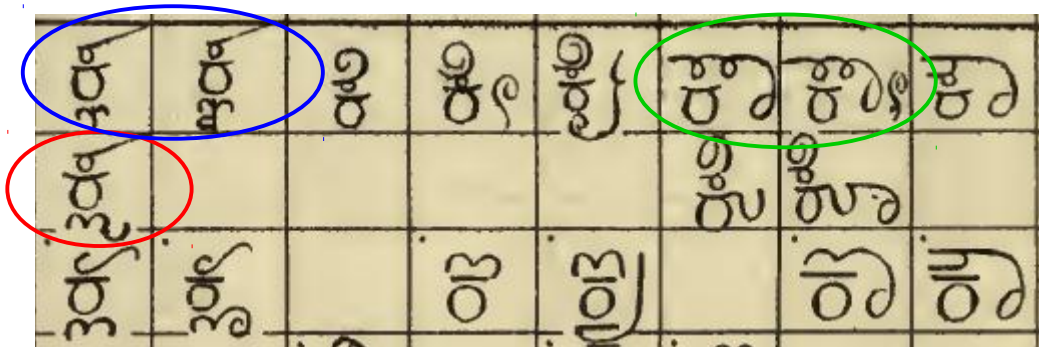
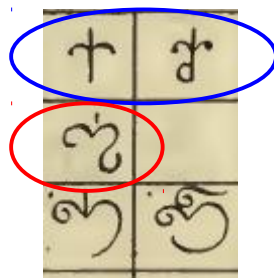
The third point especially is quite understandable considering the orthographical need of economy to occupy only the minimum essential space below the base. (Note also the similar Bengali case for LL where a slight rearrangement occurs: )

Based on the attestation above which covers both independent and dependent vowel forms, but adapting the “tendrils” size based on the other attestations, one could arrive at:

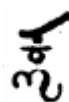


... for an appropriate set of standardized glyphs. However, **the existing glyphs are also attested!**

It is somewhat disconcerting to note that the proposal has selectively provided only the single lines from Henry Harkness’ *Ancient and Modern Alphabets of the Popular Hindu Alphabets of the Southern Peninsula of India*, 1837 (<http://www.archive.org/details/ancientmodernalp00harkrich>, see pp 11 and 13 of 86 in PDF) which show the desired new glyphs (blue circles below), and has not revealed that this source actually shows other forms in the immediately next lines, **including the existing Devanagari-like forms for the short vowels** (red circles below):



A similar attestation is available from p 6 of another source the proposal itself quotes:

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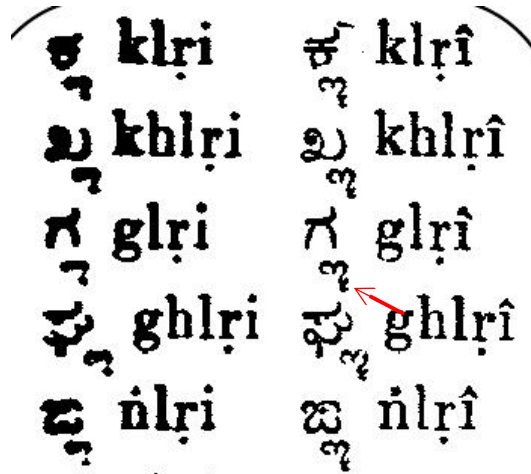
A grammar of the Carnataca language, John MacKerrel, College Press, Madras, 1820

<http://books.google.co.in/books?id=Rr4JXT430CUC>

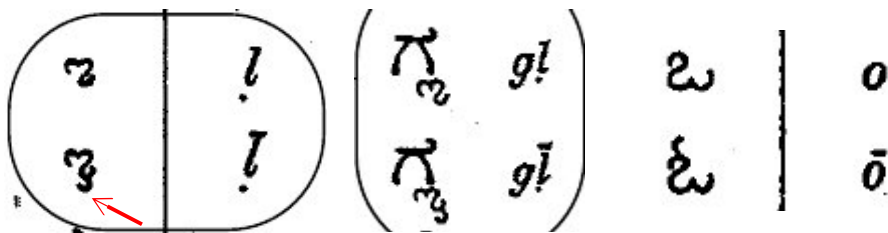
This source (on p 3) gives the requested form for the independent vowels as shown by the current proposal (again on p 3), but it shows the dependent form for the short vowel as existing, just three pages away.

The proposal says (p 1) that the current Kannada glyphs are invalid as they are merely the glyphs for O ಓ and OO ಓ in inverted form and pronounces that “these cannot be considered as correct glyph [sic] for these characters”. I reproduce the evidence provided in L2/04-364 p 2:

Kittel (1903)

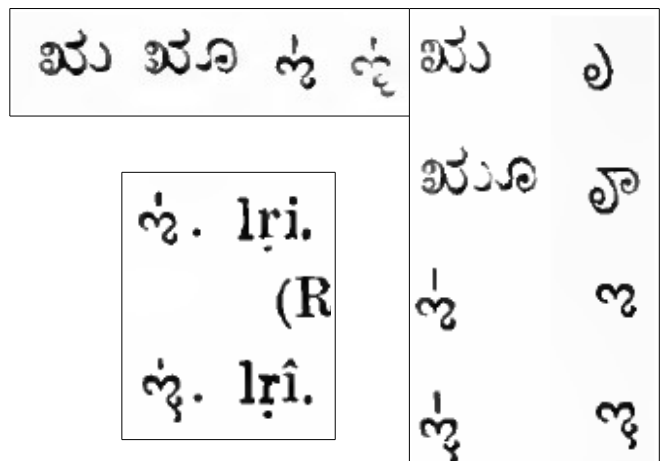


Reichsdruckerei (1951)



While indeed the Reichsdruckerei printing seems to have used inverted O/OO, it itself refers to Kittel as its source (see the full page in the original L2/04-364 p 2) and even the single Kittel sample produced above does not use inverted O/OO but in fact shows the Devanagari-like vowel signs for both L/LL, the difference being in the orientation of the lower-most hook in the long vowel sign which is clockwise in inverted OO and anticlockwise in Devanagari (see arrows above). As such, the assumption that the existing glyphs for L/LL are merely inverted O/OO is hasty, to say the least.

In fact, Kittel’s original publication seems to also occasionally use the inverted O/OO as a substitute (and even provides a vertical stem for the independent vowel, right: pp 17, 18,



24). However, though it is a substitution, one should consider *what* it is a substitution *for*, and certainly it can be a substitution for the Devanagari-like ಓ rather than the more dissimilar ಓ.

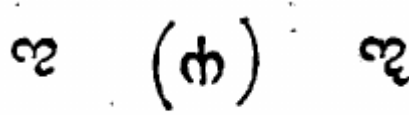
Yet another publication of Kittel clearly shows the Devanagari-style letters for the independent letters but without the vertical stroke:



A Kannada-English school-dictionary, Ferdinand Kittel, Basel Mission Press, Mangalore, 1899

<https://archive.org/details/kannadaenglishsc00buchrich>

And there is this source which actually shows both forms of the short vowel as equivalents:



Canarese School Grammar

G Plebst, German Mission Press, Mangalore, 1859

<http://books.google.co.in/books?id=RaJFAAAAcAAJ>

In fact most of these are sources which a co-author of the current proposal provided me earlier! I am quite surprised that these were not considered before calling the current glyphs invalid.

Examining all this available evidence indicates that both the Devanagari-style and the currently proposed unique glyphs were in vogue and that the Devanagari-style glyphs for the independent vowels would sometimes have a vertical stem and sometimes not.

The evident solution in this situation is to use a font appropriate to the desired style.

Further, one notes that in the line from Harkness which attests the proposed glyphs, the shapes of the vowel signs O/OO (green circle) are the archaic forms which are also seen in the other 18th/19th century Kannada grammars cited above, and to encode which I submitted L2/14-004.

It is my understanding that my proposal was rejected to avoid complications in the Kannada encoding model which uses canonical decompositions for the vowel signs. Whatever the reason, the upshot on that score was that those who desire to display the archaic vowel signs for O/OO should use an appropriate font, in which case the same solution can also be used for the shapes of vocalic L/LL, since the proposed glyphs are attested as part of that same archaic style.

Thus **the only glyph change which is required based on the available evidence is for the independent letters 0C8C and 0CE1 to be shown as 0C8C (change in length of “tail”) and 0CE1 (remove rightward feature and add second anti-clockwise hook on bottom right) respectively which will also make the set 0C8C 0CE1 0CE2 fitting the pattern of all Indic scripts.**

The Unicode chapter on Kannada can document the archaic forms of vocalic L/LL as well as vowel signs O/OO (as per L2/14-004) for the benefit of OCR and similar applications.