Unicode request for a ligature, expected IPA retroflex letters and similar hooks & tails.

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Ligatures

\( \ddag \) LATIN SMALL LETTER L WITH FISHHOOK. Figures 1–7.

Expected IPA retroflex letters

\( \ddot{\iota} \) LATIN SMALL LETTER TURNED R WITH LONG LEG AND RETROFLEX HOOK. Figures 8–11.

\( \ddot{\jmath} \) LATIN SMALL LETTER T WITH TOP HOOK AND RETROFLEX HOOK. Figures 12–13 + note.

Other retroflex tails

\( \ddot{\omicron} \) LATIN SMALL LETTER O WITH RETROFLEX HOOK. Figure 15.

\( \ddot{\imath} \) LATIN SMALL LETTER I WITH STROKE AND RETROFLEX HOOK. Figure 16.

\( \ddot{\jmath} \) LATIN SMALL LETTER TESH DIGRAPH WITH RETROFLEX HOOK. Figure 14.

(currently have vowels \( \ddot{a}, \ddot{a}, \ddot{e}, \ddot{e}, \ddot{a}, \ddot{a}, \ddot{u}, \ddot{u} + \) alveolar \( \ddot{d}, \ddot{t}, \ddot{n}, \ddot{t}, \ddot{s}, \ddot{t}, \ddot{z} \) \( \ddot{(t-\ddot{z})}, \ddot{f} \) \( \ddot{z} \) \( \ddot{(d-\ddot{z})} \) \( \ddot{z} \) \( \ddot{3} \)

Palatal hooks

\( \ddot{\ddagger} \) LATIN SMALL LETTER L WITH BELT AND PALATAL HOOK. Figure 23.

\( \ddot{\eta} \) LATIN SMALL LETTER ENG WITH PALATAL HOOK. Figure 24.

\( \ddot{\zeta} \) LATIN SMALL LETTER TURNED R WITH PALATAL HOOK. Figures 17–19.

\( \dddot{\zeta} \) LATIN SMALL LETTER R WITH FISHHOOK AND PALATAL HOOK. Figure 19.

\( \dddot{\omicron} \) LATIN SMALL LETTER EZH WITH PALATAL HOOK. Figures 20–21.

\( \dddot{\delta} \) LATIN SMALL LETTER DEZH DIGRAPH WITH PALATAL HOOK. Figure 22.

\( \dddot{\jmath} \) LATIN SMALL LETTER TESH DIGRAPH WITH PALATAL HOOK. Figure 22.

(currently support consonants (except j, y, w) + \( \dddot{\jmath} \) )
**Figures**

**l–ɾ ligature (r with ascender, ɾ)**

An old letter for a lateral flap, used in IPA transcription before the official adoption of ɺ. Also used by Dolgopolsky (2013) for a liquid that is historically ambiguous between [ɾ] and [l]. Considered for similar use (as a ‘rhotic lateral’) by the extIPA in 2015, but the eventual decision was to not adopt it.

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**Figure 1.** Fukui (2004: 29)

The flapped lateral occurs before all vowels and in conjunction with the semi-vowels. The phonetic symbol for the flapped lateral is ɾ; but in current Lamba orthography no distinction is made between it and l, as the

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**Figure 2.** Doke (1938: 29). The apparent descender is simply a misalignment with the baseline, as seen in the next illustration.

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**Figure 3.** Doke (1938: 38), showing that the letter has no descender. (This is also apparent from the consonant table on p. 11, where the ligature appears in italic hand.)

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**Figure 4.** Doke (1936: 74). A typeset ligature in italic typeface.

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**Figure 5.** Doke (1936: 68). An example of the l-ɾ ligature in the context of a word.
Alveolar IPA letters with retroflex tail

Like the implosive ⟨Ʌ⟩ mentioned in the Handbook as an obvious, if unofficial, extension of the IPA, the lateral flap ⟨Ɉ⟩ and old-style implosive ⟨ɉ⟩ fill out the retroflex series. (For ⟨Ɉ⟩ and ⟨ɉ/Ɋ⟩, see the separate requests for click and extIPA letters.)

Erik Zobel wrote, 2020 feb 04: I'm am working on two chapters ("Chamorro" / "Palauan") for the OUP Guide to the Malayo-Polynesian languages of Southeast Asia and Madagascar, and there will also be a chapter about the languages of Sulawesi. I'm lobbying to have the authors use the SIL PUA symbol for the retroflex lateral flap in the phonetic overview, and mention the attestation in Buol, Totoli, Tonsawang, Sangir etc. Can't guarantee if they will listen to me, but do you think that may help?

Retroflex lateral flap (Ɉ)

A retroflex lateral flap occurs throughout South Asia, in languages spoken by half a billion people, from Pashtun to Oriya (Masica 1991The Indo-Aryan Languages), in Sulawesi, and in various languages of Australia, Africa and the Americas.
Table 1: Ku Waru phonemic inventory: Consonants

<table>
<thead>
<tr>
<th></th>
<th>Labial</th>
<th>Apico-Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain stop</td>
<td>p</td>
<td>t</td>
<td></td>
<td>k</td>
</tr>
<tr>
<td>Fricative</td>
<td>s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prenasalized stop</td>
<td>mb (b)</td>
<td>nd (d)</td>
<td>jdʒ (j)</td>
<td>ηg (g)</td>
</tr>
<tr>
<td>Nasal</td>
<td>m</td>
<td>n</td>
<td>η (ny, yn)</td>
<td>η (ng)</td>
</tr>
<tr>
<td>Continuant</td>
<td>w</td>
<td>r</td>
<td>j (y)</td>
<td></td>
</tr>
<tr>
<td>Retroflex flap</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retroflex approximant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lateral</td>
<td>ɬ (rlt)</td>
<td>l (l)</td>
<td>Λ (ly, yl)</td>
<td>ɬ (l)</td>
</tr>
</tbody>
</table>

Figure 8. Rumsey (2017: Table 1)

\textbf{Retroflex lateral flap /ɬ/}.

\begin{enumerate}
\item /lim/ \rightarrow [ɬim] a woman’s name
\item /keːra koːlə/ \rightarrow [(keːɾə) koːl] ‘(bird) chicken’
\item /kum piniːl/ \rightarrow [(kum)piniːl] ‘(ear) eardrum’
\end{enumerate}

Figure 9. Rumsey (2017: 98)

Figure 10. Bekker (2003: 439). The letter is grey rather than black because it’s not an official IPA symbol.

suffice). Other unofficial symbols are [ɬ] for a retroflex lateral flap and [ʃ] for an epiglottal

Figure 11. Ball et al., section 4.1.

Mark Harvey (p.c.), who wrote a grammar of Gaagudju where the sound occurs allophonically, said of the letter ɬ that he “can foresee that it will need to be used in descriptions of Australian languages, so [he] would be happy to support its inclusion.”
Robert Mailhammer (p.c.) said of the proposal for that “the symbol \( \text{[l]} \) used has been an \( \text{l} \) with either a tap or a retroflex tap superscript [...]. But having a proper symbol would, of course be good. [...] for the lateral flaps there is definitely a need.”

Lakhan Gusain at John Hopkins (p.c.) says he would like to have this letter for Pashto.

Eric Zobel (p.c.) said “For us Sulawesianists, it’s quite a pity that the retroflex lateral flap doesn’t get a Unicode symbol. Sneddon has described it for the Sangiric languages, Himmelmann for Totoli and Dondo,”

**Small \( \text{t} \) with hook and tail (\( \text{f} \))**

A voiceless retroflex implosive. It occurs in Oromo. It is the single missing voiceless implosive letter.

In addition to the above sounds, Oromo is also uniquely distinguished from many world languages in that it has a voiceless implosive retroflex stop. The IPA symbol for this sound is \( \text{ʕ} \) but the symbol /\( \text{T} \)/ will be used here. The choice of /\( \text{T} \)/ over the conventional \( \text{ʕ} \) is purely a matter of practicality in this paper.

Table 1 lists the implosives that have been found in languages. Unlike ejectives, implosives can be either voiced or voiceless. The voiced series of implosives is more common than the voiceless series. There appear to be no implosive fricatives used in any language, although a voiced implosive affricate [\( \text{ʣ} \)] is reported to occur in Roglai of Vietnam (Norris McKinney, personal communication) and Komo of the Democratic Republic of Congo.

<table>
<thead>
<tr>
<th></th>
<th>Bilabial</th>
<th>Alveolar</th>
<th>Palato-alveolar</th>
<th>Retroflex (alveolar)</th>
<th>Palatal</th>
<th>Velar</th>
<th>Uvular</th>
</tr>
</thead>
<tbody>
<tr>
<td>vl.</td>
<td>( \text{ɓ} )</td>
<td>( \text{ɗ} )</td>
<td>( \text{ɓ} )</td>
<td>( \text{ɓ} )</td>
<td>( \text{ɓ} )</td>
<td>( \text{ɓ} )</td>
<td>( \text{ɓ} )</td>
</tr>
<tr>
<td>vd.</td>
<td>( \text{ɓ} )</td>
<td>( \text{ɗ} )</td>
<td>( \text{ɗ} )</td>
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<tr>
<td>vd.</td>
<td>( \text{ɗ} )</td>
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<td>( \text{ɗ} )</td>
<td>( \text{ɗ} )</td>
<td>( \text{ɗ} )</td>
</tr>
</tbody>
</table>

The implosive glottalic airstream mechanism is symbolized by adding a hook to the top of the basic symbol of the corresponding pulmonic sound.

Laver (1994: 582, Table 19.2h) lists a voiceless retroflex implosive in a table like that of Bickford &
Floyd, for the frequency of sounds in the UPSID, but the printed symbol is a typographic error: $\langle \text{ʃ} \rangle$. The other UPSID tables all have a retroflex-tailed letter in the retroflex column. For example, the voiced implosive series is $\langle \text{ɓ} \text{ɗ} \text{ɗ} \rangle$, with a non-IPA retroflex $\text{ɗ}$. Other typos occur in these UPSID tables, such as $\langle \text{N̥a} \rangle$ for $\langle \text{ɴ̥a} \rangle$ in Table 19.2j and $\langle \text{B} \rangle$ for $\langle \text{b} \rangle$ in 19.2p, so it appears that this would have been a retroflex $\text{f}$ but for the lack of proper font support. I have asked John Laver about this, but I’ve been warned he is not well and may not respond.

**Other retroflex tail**

**ʧ with retroflex tail (t-\$ ligatures: ʧ)**

![Figure 14. Laver (1994: 560)](image-url)
Small o with retroflex tail (ォ)

The only basic-Latin vowel without a tailed variant. Used for prosodic/allophonic retroflexion in descriptions of Iwaidja. In the figure below it slightly resembles an o-ogonek, but is analogous to other retroflex/rhotic vowels (cf. the a-with-tail ⟨аш⟩ rather than a-ogonek ⟨аш⟩ in the transcription following each example).

Firstly, although retroflexion can be realised phonetically on a syllable-initial segment (e.g. /gorndaw/ (i) ‘long-necked turtle’), a final segment (e.g. /gunbad/ ‘knee’), a vowel (e.g. /be’g/ ‘deaf adder’), or various combinations of the above (e.g. /qod/ ‘house’, /galki/ ‘salmon-tailed catfish’ (E:D)), it only needs to be marked once on any syllable and once a syllable is marked as retroflex the loci of retroflexion will be predictable: any apical segment in the syllable and the vowel. Retroflexion is more clearly audible on the vowel in monosyllables, which are phonetically lengthened, as discussed in §2.1.2.

Within a syllable, all apical stops and nasals agree in retroflexion. Thus there are words like /tiː/ ‘moon’, /tʃo/ ‘louse’ and /tʃiʔ/ ‘near’ on the one hand and /nin/ ‘small bird’, /naŋ/ ‘I saw you’ and /nakmen/ ‘long-legged’ on the other, but no syllables like */tiː/, */tʃo/ *,/naŋ/ or */naŋ/. The only exceptions to such ‘retroflexion agreement’ occur when two apical consonants are linked across a morpheme and syllable boundary (see below). Note also that the retroflex continuant /ɾ/ does not participate in these effects and hence we find words like /naɾin/ ‘snake’.

Figure 15. Evans (2003: 86). Syllable-level retroflexion of consonants and vowels.

i-bar with retroflex tail (ィ)

Used for Tarascan in the UPSID.

Retroflexed high central unrounded vowel.

/ᵻ/ 1 Tarascan.

Figure 16. UPSID (1981: 229)

Palatal hook

Turned small r and tap r with palatal hook (ã add r, )

Used for palatalization of English r.
effect, transcribing *rara* as [ˈraːɾə]. In all positions it is slightly palatalized before *i*. Between low vowels some speakers, e.g. Dugal Goongarra, pronounce it as a retroflex flap, neutralizing the distinction between *r* and *rd*.

| ‘south’  | *rama* | /rara/ | [ˈɾaɾə] |
| ‘egg’    | *kuru*  | /kuru/  | [ˈkʊɾʊ] |
| ‘east’   | *riya*  | /riya/  | [ɾiə] |
| ‘young girl’ | *nguriwa* | /ŋuriwa/  | [ŋʊɾiwa] |
| ‘red ant’ | *barakurra* | /barakura/ | [ˈbaɾəkʊɾə] |

Figure 17. Evans (1995: 56)

**Figure 18.** Kretzschmar (1994: 124). The palatal * saw is repeated several times on the page. The symbol highlit in yellow goes with the next entry.

The symbol highlighted in yellow goes with the next entry.

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Figure 19. Kretzschmar (1994: 116). [is this the correct source?]
**Ezh with palatal hook (ʒ); d-ezh and t-esh with hook (ʣ, ʧ)**

Used for palatalization of [ʒ] since the dedicated IPA letter ⟨ʒ⟩ was abandoned.

Figure 20. Kretzschmar (1993: 123). ⟨ʒ⟩ is also visible (yellow) in the previous figure. On p. 115 they note that in Kurath et al. (1943) LANE, ʃ and ʒ, have the hook coming off the bottoms of the letters, but those are clearly allographs.

Figure 21. McDavid & O’Cain (1980: 130)

Figure 22. Grunwell (1981: 73). The ⟨ʧ⟩ here (yellow) may not look like a ligature, but context suggests that is just a matter of font support.

**ʧ with palatal hook (ʧ)**

A palatalized lateral fricative. Found for Coastal Chontal.

Figure 23. Laver (1994: 310)
eng with palatal hook (ŋ)

A fronted velar, as in Vietnamese; analogous to fronted velars ʞ ʢ in Russian.

As yet unattested

dʒ with retroflex tail (dʒ ligature: dʒ)

The obvious choice for people who use j and ʒ together with the old IPA ligatures for affricates. The example above, for Polish, only shows the voiceless affricate, but Polish also has a voiced affricate that would need to be transcribed the same way.

References

Doke (1938) Text Book of Lamba Grammar.
University of Chicago Press. [LAMSAS is a project of the University of Georgia]
Pulleyblank (1970) “Late Middle Chinese” (part 1), Asia Major 15.