

# TOLKIENIAN SCRIPTS WITH VIRTUAL FONTS

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## 1. INTRODUCTION

This package consists of virtual fonts (and a few macros) designed to do what  $\text{\TeX}$  is meant to do: convert legible, easy-to-type ASCII text files into attractive, properly formatted documents. It’s just that “properly formatted” in this case means written correctly in one of the writing systems invented by J.R.R. Tolkien.

This package supports the tengwar and cirth as described in [Appendix E], and Anglo-Saxon runes as used in [Thror]. Some support is also provided for writing Quenya (but no other language) with sarati and the valmaric script.<sup>1</sup>

This package uses several freely available TrueType fonts for the Tolkienian scripts. It is designed to be used with pdf $\text{\TeX}$ .

This package uses virtual fonts to convert normal text to tengwar. This is a radically different approach from Ivan Derzhanski’s `tengtex` package, which instead uses sophisticated  $\text{\TeX}$  macros. Virtual fonts compile faster and there are more books and articles on the subject, which is why I used them; however, they do mean that I have to make several new supporting files for even the most trivial changes in mode, which Derzhanski does not.

If you only want to write Elvish, you can stop reading this document after Section 5.4. The remaining sections are for writing English (much more complicated), for tengwar experts who want to know exactly how my transcription works, or for anyone who wants extra fonts or color effects.

## 2. LICENSE

This work is copyright Ariel Barton, 2009. It may be distributed and/or modified under the conditions of the  $\text{\LaTeX}$  Project Public License, either version 1.3 of this license or (at your option) any later version.

The latest version of the license is in

<http://www.latex-project.org/lppl.txt>

and version 1.3 or later is part of all distributions of  $\text{\LaTeX}$  version 2003/06/01 or later.

This work has the LPPL maintenance status “maintained”. I am the current maintainer; I may be reached at `origamist@gmail.com`.

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<sup>1</sup>Sarati is the first of these four scripts that Tolkien invented. It has a place in the Middle-earth cosmology as the alphabet invented by Rúmil of Tirion. Fëanor thus did not invent the tengwar out of whole cloth; they’re an improvement of an earlier system.

The valmaric script was invented by Tolkien after sarati but before tengwar, and looks quite a bit like both of them. I don’t know if Tolkien still thought of it as the alphabet of Valinor after inventing the tengwar.

This work is a package designed to make it easier to *use* fonts such as Tengwar Annatar. Those fonts **are not** considered a part of this work. The font family Tengwar Annatar is copyright Johan Winge; the fonts Sarati Eldamar, Valmaric Eldamar, Tengwar Parmaite, and Tengwar Eldamar are copyright Måns Björkman; the fonts Cirth Erebor, Tengwar Quenya, Tengwar Sindarin, and Tengwar Noldor are copyright Daniel Smith. It is your responsibility to make sure that your use of these fonts does not violate the creators' copyrights.

Similarly, the tengwar, cirth, sarati and valmaric scripts were created by J.R.R. Tolkien; it is your responsibility to ensure that your use of this package does not violate the rights of the person, persons, or entity who owns this intellectual property.

As of May 1, 2009, these fonts are all available for free download, and I can use them in pdf $\TeX$  documents. No other claims are made by the author regarding these fonts. In particular, I cannot guarantee and take no responsibility to ensure that they will remain available or will work with your distribution of  $\TeX$ . Furthermore, any attempts to download, install, or use these fonts are taken at your own risk; I am not liable for any bad consequences of downloading, installing, using, attempting to download, install, or use, or being unable to download, install, or use these fonts.

### 3. INSTALLING THE PACKAGE

This package involves over a hundred supporting files. They should be put in appropriate places. Your distribution of  $\TeX$  may be able to do this for you, but if it can't, you should probably find a folder named `texmf`<sup>2</sup>, and move the `.tfm`, `.vf`, `.map`, and `.fd/.sty` files into (subfolders of) `texmf/fonts/tfm`, `texmf/fonts/vf`, `texmf/fonts/map`, and `texmf/tex/latex`.

If you really can't figure out where to put these files, your documents will probably compile if you put everything in the same folder.

You'll also need the actual fonts. `tolkienfonts` is written to use Dan Smith's Cirth Erebor, Johan Winge's Tengwar Annatar, and Måns Björkman's Sarati and Valmaric Eldamar. (With a little extra work, you can make it support Tengwar Parmaite, Eldamar, Noldor, Quenya and Sindarin, as well as the other three versions of Tengwar Annatar; see Section C.)

As of this writing, you can get these fonts from

<http://www.acondia.com/fonts/cirth/index.html>  
<http://home.student.uu.se/jowi4905/fonts/annatar.html>  
<http://at.mansbjorkman.net/downloads.htm>

The `.ttf` files go in `texmf/fonts/truetype`. You may also need the encoding file `ansinew.enc` (it can be found at <http://ctan.org/>); it goes in `texmf/fonts/enc`.

If for some reason you decide you'd rather use the Type 1 version of the fonts, the `.pfb` files go in `texmf/fonts/type1`. The `.afm/.pfm/.inf` files don't seem to be necessary. You'll also want to edit `tolkien.map` appropriately.

pdf $\TeX$  is happy to deal with TrueType (`.ttf`) fonts. `dvips`, however, won't. I've had trouble getting even the Type 1 (`.pfb`) versions of these fonts to work with `dvips`; consequently, I've only designed this package for pdf $\TeX$ .

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
<sup>2</sup>If you're using Mac  $\TeX$ , `texmf` should be in `Users/your-user-name/Library`. If it isn't there, create it.








TABLE 1. Modes, sorted by script and language


	Quenya	Sindarin	English	Dwarvish
Tengwar	quenya quenyaa quenyagen quenyared	gondor arnor beleriand	orthmode mazarbul tehtamode phonemic	
Cirth	eregion <b>fancyeregion</b>	daeron <b>fancydaeron</b>	erebor <b>fancyerebor</b>	moria <b>fancymoria</b>
Runic			hobbit <b>fancyhobbit</b>	
Sarati	sarati saratia <b>barsarati</b> <b>barsaratia</b>			
Valmaric	valmaric valmarica			




Modes which are only available as environments are listed in red in Table 1; these environments all involve active space characters, which can lead to odd behavior.

**barsarati** (or **barsaratia**) is normal sarati drawn with a bar:  instead of . Many cirth texts put dots in the interword spaces: . In the normal cirth modes, you get these dotted spaces with `\_` (backslash-space); **fancyerebor** and so forth put the dots in the spaces automatically.

Sarati and valmaric quenya modes normally do not bother writing the letter *a* unless absolutely necessary; instead they have a special tehta for a consonant followed by no vowel. **sarati** and **valmaric** follow this convention (*calma* is spelled , but **saratia** and **valmarica** do not ().

[Appendix E] says that you can also do this with the Quenya mode of tengwar; since the extant Quenya tengwar texts do not do this, **quenya** defaults to writing as with tehtar  and **quenyaa** omits them . (If you really want , type `\Quenya{c1m}`. I recommend against doing this unless you've found some native Quenya speakers to read your document.)

**quenyared** is a mode identical to **quenya** except that (in pdfL<sup>A</sup>T<sub>E</sub>X) the tehtar and punctuation are red (and the tengwar are black): . For instructions on how to set up a font with this kind of interesting color effects, see Section C.2.

The other environments have more than cosmetic significance. In the normal Quenya mode, *mb* is written simply , since in Quenya, *b* never occurs except after *m*. However, this causes problems when writing mostly-Quenya texts which mention Sindar or mortals, since this means you literally cannot write *Celeborn* or *Bilbo*.<sup>4</sup> **quenyagen** fixes this problem by writing *mb* as , leaving  free to represent *b*. This makes for a more “generic” mode.

<sup>4</sup>If you try, `tolkienfonts` will quietly transcribe *Celeborn* and *Mbilmb*o.

We have long samples of three different modes for writing Sindarin: the mode of Beleriand (from the Doors of Durin), and the modes used by nobles of Arnor and Gondor. They're subtly different: *Arwen*, for example, is transcribed variously as  $\text{c}\mathring{\text{y}}\text{u}\text{a}\text{w}$ ,  $\text{c}\text{w}\text{w}\text{a}\text{w}$ , and  $\mathring{\text{y}}\text{w}\acute{\text{a}}$ .

Unlike the Elvish languages, there are two fundamentally different ways to write English with Tolkien's scripts: *orthographic*, in which case *there* and *their* are spelled differently, and *phonemic*, in which they are not. (Tolkien's earlier long tengwar texts are mostly phonemic; his later ones are mostly orthographic.) Just to complicate things, Tolkien wrote more long English tengwar texts than any other language, and different samples are often inconsistent.<sup>5</sup>

See Section 7 and Section 8 for more discussion of English with tengwar.

## 5. WHAT TO PUT INSIDE THE MODE COMMANDS

**5.1. Text.** For Hobbit runes, nothing special need be done; just say `\Hobbit{The record of a year's journey made by Bilbo Baggins of Hobbiton.}`

In the English tengwar and cirth modes, you have to change the spelling a great deal to get it to work properly. See Sections 7 and 8.

For a Tolkienian language, you can generally get the right results by typing the Quenya, Sindarin or Dwarvish phrase in lowercase letters. (The `\lowercase` or `\MakeLowercase` commands can be useful here.)

In the Mode of Gondor, you have to do one other thing. A *w* after a *d*, *g*, or *ch* is transcribed in a special way, which occasionally interferes with preceding vowel tehtar. The simplest way to get the correct result is to replace all *dws*, *gws* and *chws* with *Dws*, *Gws*, and *Chws* or *'dws*, *'gws*, and *'chws*.

Experts might need a few other uppercase letters.

In the Mode of Arnor, you might want to mix *rs* and *Rs*; I haven't been able to figure out a rule for when this mode uses  $\mathring{\text{r}}\text{R}$  and when it uses  $\text{r}\text{R}$ .

In the Quenya modes, *N/ng*, *S/th* and *V/w* may be used in words that are pronounced with *n*, *s* or *v* but are spelled as if they used *ŋ*, *th* or *w*. There are three different *hs* in Quenya; you get *h* with *H* or just before *r/l*, you get *ch* with *ch* or just before *t*, and you get *λ* with *h* otherwise. (See Section B.1.1.)

To the extent that it is possible, I have tried to ensure that text which is spelled correctly in a given mode will produce appropriate results in other modes configured for the same language. For example, *D*, *G*, *C*, and *R* may be used instead of *d*, *g*, *c*, and *r* in the mode of Beleriand, even though there's no reason to.

Otherwise, uppercase letters will often produce odd results; don't use them unless they're listed in the tables in Section D.

**5.2. Accented letters.** Tolkien used three diacritical marks with the Latin alphabet: *é*, *ê* and *ë*. You can get appropriate transcriptions of all these accented letters by using the appropriate TeX accent commands `\'` or `\^`. In any mode designed for a Tolkienian language, you can also get appropriate (if sometimes different) transcriptions by doubling the vowel: *uu* instead of `\'u`. Dieresis marks aren't actually necessary when writing Elvish; they can be ignored. (Nothing bad will happen if a `\"(vowel)` winds up in a Quenya text by accident.)

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<sup>5</sup>My theory is that he did this on purpose. In a society with no printing press, regional variants in spelling are only to be expected.

TABLE 2. Tengwar Punctuation

		Meaning		
þ	?	Question mark (from [Namárië])	‘	“ or ‘
ʃ	!	Exclamation point (from [Namárië])	’	” or ’
·	,	Short pause	(	[ or (‘
:	. or ;	Medium pause	)	] or )‘
:	:	Long pause	;	;‘
::	,.		.	.‘
:::	,,		,	,‘
:::	,.,	Very long pause/paragraph break	?	?‘
:::	..		!	!‘
ſ	( or )	Parenthesis (from [Letter], [Thorin])		
~	--	Decoration or end of inscription		
~	---			
=	=			

**5.3. Punctuation.** In transcribing Elvish to the Latin alphabet, a dash indicates compound words; an apostrophe indicates a letter that is pronounced but not written. Neither of these are written in the tengwar text: *lumenn'* becomes  $\mathcal{L}\acute{w}\mathfrak{m}$ , not  $\mathcal{L}\acute{w}\mathfrak{m}'$ . However, occasionally these marks make a difference to tengwar spelling: *Pant-hael* is not pronounced *panth-ael*, and so should be spelled  $\mathfrak{p}\acute{\mathfrak{h}}\acute{\lambda}\acute{\mathcal{T}}$ , not  $\mathfrak{p}\acute{\mathfrak{h}}\acute{\lambda}\mathcal{T}$ .

In all fonts, we can force  $\mathfrak{p}\acute{\mathfrak{h}}\acute{\lambda}\acute{\mathcal{T}}$  by putting -, ', {}, or \- between the t and h. - and ' behave slightly differently.

Most of the modes have special rules at the start or end of words. For example, in the mode of Gondor, if a word starts with *i* followed by another vowel, the *i* is pronounced as a *y* and transcribed with a  $\mathfrak{x}$ ; so *iarwain* is transcribed  $\mathfrak{x}\acute{\mathfrak{y}}\mathfrak{w}\acute{\mathfrak{a}}\mathfrak{i}\mathfrak{n}$ , but *Imladris* is transcribed as  $\mathfrak{w}\acute{\mathcal{T}}\mathfrak{p}\acute{\mathfrak{h}}\mathfrak{y}\acute{\mathfrak{r}}\mathfrak{h}$ .

A hyphen (but not an apostrophe) restores start-of-word and end-of-word behavior on either side; so `\Gondor{ben-iuith}` produces  $\mathfrak{p}\mathfrak{w}\acute{\mathfrak{a}}\mathfrak{l}\acute{\mathfrak{a}}\mathfrak{h}$ , but `\Gondor{ben'iuith}` produces  $\mathfrak{p}\mathfrak{w}\acute{\mathfrak{a}}\mathfrak{l}\acute{\mathfrak{a}}\mathfrak{h}$ .











Visible punctuation is also available. In general, the Elves used (varying numbers of) dots to indicate pauses in speech. So in all fonts, the punctuation characters ., :, ; produce some number of dots; for decorative effects, or at the end of inscriptions, you can repeat symbols to get clusters of more dots.

In the tengwar fonts, special symbols for ? and ! are used (they come from [Namárië]). In the other fonts, these symbols are again dots, since I didn't know what else to make them.

Again in the tengwar fonts only, there are available symbols for “Elvish parentheses”; furthermore, you can get Latin punctuation, including quote marks. See Table 2.

I've done some virtual-font tricks so that the elvish punctuation (but not the Latin punctuation) has small spaces on the left and right, not just on the right. When written ragged right, the spaces on both sides are the same size; however, for technical reasons all of the stretch and shrink has to go on the right-hand side

TABLE 3. s-curls

Curl	Code	Curl	Code
	<code>\char0</code> or <code>\s</code>		<code>\char5</code>
	<code>\char1</code>		<code>\char6</code>
	<code>\char2</code>		<code>\char7</code>
	<code>\char3</code>		<code>\char8</code>
	<code>\char4</code>		<code>\char9</code>

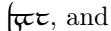
of the punctuation signs. (Except in the active space modes.) If you don't like this effect, see Section C.3.

**5.4. Numbers.** In Middle-Earth, numbers are written with the least significant digit first (this is backwards relative to the way we write). Also, Elves and Dwarves often wrote numbers in base 12 instead of base 10. (See [Numbers].)

We don't know how to write numbers in Valmaric or Cirth. (We do have some digit tables for Sarati.) The numbers 3, 4, 5, 6 show up in [Mazarbul], but it's hard to extrapolate upwards (or down to 0).

You can get numbers in Sarati or Tengwar in two ways:


- Type them in directly: Bilbo invited `\Orthmode{441}` guests to his special party, and Thorin set out for the Lonely Mountain with one hobbit, one wizard, and `\Orthmode{01}` dwarves, or a total of `\Orthmode{21}` companions. (The commands `\ten` and `\eleven` produce the appropriate digits.)
- Use the `\reversedigits` macro. This macro does the work of converting a base-10 number written with most significant digit first to a base-whatever number written with the least significant digit first. (The default default base is 10. You can get other bases up to 12 by either using an optional first argument or by renewing the command `\defaultbase`.)

For example, `\Orthmode{\reversedigits{16}}` produces , and



```
\Orthmode{\reversedigits[12]{16}}
```





```
\renewcommand{\defaultbase}{12}
```

```
\Orthmode{\reversedigits{16}}
```

both produce .

## 6. EXTRA SYMBOLS

Long tengwar look like . These are used on the One Ring, and also in English mode as abbreviations for “the” and “of”. Occasionally they are used elsewhere as variants. They can be accessed by placing a | after the code for the corresponding tengwa from Grade 1, 2, 3, or 4. So, for example, `\Gondor{p| dh|}` produces .

Tolkien often used curls and flourishes as an abbreviation for s: , , , , and so on. To get these in a tengwar, sarati or valmaric font, you can use the commands `\s` or `\char0`.

With sarati and valmaric, flourishes may be used on either side of a letter. `\s` by default produces the flourish that attaches to the left side of the following symbol; at the end of a word, the flourish which attaches to the right side of the preceding symbol is substituted automatically.



In a Sindarin mode, or English phonemic mode, that’s all you have to do. (The fonts will switch to a good *s*-curl automatically. If you don’t like the curl the font picked out, see Table 3.)

In Quenya mode, sometimes you want to get things like  $\text{ᚲ}$ . From [Appendix E], it is clear that  $\text{ᚲ}$  means *tsa* and not *tas*; that is, the *s*-curl should happen only if *s* occurs directly after another consonant. In [Quenyanna], this happens only in the combinations *ts*, *ps*, *ls*, *ms*, *ns*, *rs*, and *x*.

Since those letters are all (except  $\text{ᚲ}$ ) from Series I or II, we can use the same *s*-curl for all of them. So the commands `\sa`, `\se`, `\su` after `t`, `p`, `m`, `n`, `r` produce this curl and a tehta. (After `l`, or any other letter, they produce a silme nuquerna plus the appropriate tehta. If you really want  $\text{ᚲ}$ , you have to use `la\char4`.)

In English orthographic modes, similarly, if a word ends with a *silent E*, and you want to attach a *s*-curl, use the command `\es` instead of `\s`.

There are some other symbols present in the base fonts which are not accessible in the normal fonts; to get them, you need to use `\tengfont`. (See Section 10.)

## 7. ENGLISH ORTHOGRAPHIC MODES

When writing Elvish, spelling always dictates pronunciation; aside from a few leftover Quenya spelling rules, pronunciation dictates spelling.

In English, this is not the case. There are two ways to make an English mode in a non-Latin alphabet: by basing it on English spelling, and by basing it on English pronunciation. The first kind are referred to as *orthographic* modes, and the second kind are referred to as *phonemic* modes.

In an “orthographic” mode, you can determine the Latin spelling from the tengwar spelling,<sup>6</sup> but you can’t determine the tengwar spelling from the Latin spelling. Extra information is present: for example, Tolkien used separate letters for silent and normal *es*. While this would be very nice for any hypothetical Elves who might come here and try to decipher our writing, it does mean that the input has to be a bit more complicated than just normal English text.

To the extent that it is possible, I have attempted to arrange things so that the argument of `orthmode`, `mazarbul`, `tehtamode` and `erebor` can be a case change away from normal English spelling—that is, you get  $\text{ᚲᚱᚰᚰᚰ}$ , the correct transliteration of *dance*, with `\Orthmode{danCE}` and not `\Orthmode{dans}`.

I have also tried to make sure that you can use the same input for all four modes. Not all of the following rules actually *do* things in all the modes.

You will need to use the following special spelling rules:

- (1) A diphthong is two vowels in a row which are run together into one syllable. These are often, but not always, written in a special way. For example, in the mode of Beleriand, *taur* (one syllable) is spelled  $\text{ᚲᚰᚰ}$ , but *Tuor* (two syllables) is spelled  $\text{ᚲᚱᚰ}$ .

In the English modes, you can prevent two vowels from forming a diphthong by putting something between them (`'`, `-`, `{}`). You can also prevent a diphthong by using `\`: `ro\ac` produces  $\text{ᚱᚰᚰ}$ , not  $\text{ᚲᚰᚰ}$ .

<sup>6</sup>Except for *c/k* and, rarely, *i/y* and *u/w*.

If a diphthong is available, you can force it to appear by replacing the second vowel with its capital.<sup>7</sup> (*w* is considered to be a vowel; *beware* should be transcribed as  $\text{ɸ}\lambda\text{ɔ}\text{w}\text{ɪ}\text{r}$ , but *dewy* should be transcribed as  $\text{ɸ}\lambda\tilde{\text{y}}$ . To get the second one, use  $\text{W}$ .)

If you do not do any of these things, what happens depends on the pair of vowels and the mode; experiment if you're curious.

- (2) Apostrophes should usually be skipped: if there's a short form of *nt*, you want to use it in *can't*.
- (3) Vocalic *y* should be written with  $\text{y}$ ; consonantal *y*, or *y* as the second letter of a diphthong, should be written with  $\text{Y}$ .
- (4) Silent *es* should be input as  $\text{E}$ , not  $\text{e}$ . (Note that the *es* in *dale*, *water*, *walked* are considered to be silent.)
- (5) A soft *c* (as in *princess*) should be input as  $\text{C}$ , not  $\text{c}$ . (A hard *c* in *cat* should be left as  $\text{c}$ .)
- (6) There are two different *ngs* in English: the *ng* in *sing* and the *ng* in *finger*. Since the first one is more common, you get it with  $\text{ng}$ ; to get the *ng* in *finger*, you should type  $\text{Ng}$ .

- (7) English has two kinds of *ch*: the soft *ch* in *church*, and the *ch* pronounced as *c* which is so common in Greek loan words like *echo*. German and Sindarin loan words contain a third kind of *ch*. The first should be spelled with  $\text{ch}$ . The other two should be spelled with  $\text{ĉ}/\text{Ĉ}$   $\text{CH}/\text{cH}/\text{kH}/\text{KH}$  or  $\text{ċ}/\text{Ċ}$   $\text{Ch}/\text{Kh}$ .

Which one is which is up to you; Tolkien uses  $\text{ĉ}$  in *Christmas* in [Brogan], but uses  $\text{ċ}$  in *Michael* in [Endorion].

I prefer to use  $\text{ċ}/\text{Ċ}$   $\text{Ch}$  for the Sindarin *ch*, so that you use the same symbol in the Sindarin and English modes. This leaves  $\text{ĉ}/\text{Ĉ}$   $\text{CH}$  for *Christmas*.

Since words like *backhand* are so common in English,  $\text{kh}$  just produces *k+h*.

- (8) There are two different *th* sounds in English, which Tolkien describes as “the voiceless *th* of English in *thin cloth*” and “the voiced (soft) *th* of English *these clothes*”. You get the first one with  $\text{th}$ ; you get the second one with  $\text{dh}$  or  $\text{tH}$ .

This means that a normal *dh* (in, say, *childhood*) needs to be spelled as  $\text{d}^{\text{h}}$  or  $\text{d}\{\text{h}$ . *dhs* in Elvish names (such as *Maedhros*, *Caradhras*) are intended to be pronounced as this voiced *th* (it's not *Carad-hras*), so do not separate them.

The following rules only apply to tengwar (not cirth):

- (9) A *w* which is silent or pronounced in combination with another consonant (*two*, *twenty*) or (probably) a silent *u* after a consonant (*build*, *guest*, *queen*) should be written with a twist tehta. This should not be done in compounds such as *westward*, so you have to tell *tolkienfonts* that you want the *u* or *w* to become a twist by using the capital version.<sup>8</sup> I'm pretty sure twists are used only in the combinations *gu*, *bu*, *tw*, *dw*, *sw*, *thw*, *gw*, and *schw*, plus *Chw* if you include Sindarin names. These are the only combinations where  $\text{W}$ ,  $\text{U}$  produce twists.

<sup>7</sup>This rule may or may not take precedence over  $\backslash$ . Being consistent on this particular point was not worth the effort.

<sup>8</sup>Except after  $\text{q}$ . In *all* modes (English or Elvish), all *us* after a  $\text{q}$  are ignored.

In the tehta mode, you have to worry about vowel and twist tehtar interfering.

As in the mode of Gondor, T, B, D, S, and G behave exactly as their lowercase counterparts, except that they do not take vowel tehtar. Since C is too busy representing soft *c* to represent  $\text{č}$  with no tehtar, if you want a  $\text{č}$  or  $\text{č̣}$  just after a vowel, I'm afraid you'll just have to put a ' or {} before it.

- (10) Tolkien abbreviated the common words *and*, *of*, *the*, and *of the* as  $\text{ā}/\text{ā}$ ,  $\text{ā}$ ,  $\text{ā}$ , and  $\text{ā}$ , instead of using the longer spellings  $\text{āā}/\text{āā}$ ,  $\text{āā}/\text{ā}$ ,  $\text{āā}/\text{āā}$ , and  $\text{āā}/\text{ā}$ . You can get the abbreviations with `ndE`, `v|`, `tH|/d|`, and `vv|`, as well as with the commands `\&`, `\of`, `\The/\THE`, and `\ofthe`.<sup>9</sup>
- (11) No English text uses  $\text{ṛ}$ . It's anyone's guess what Tolkien would have used it for. But a reasonable guess is *rh* in *rhyme*, *rhythm*, (or *Rhovanion*),<sup>10</sup> and so you get it with `Rh`. (Words like *neighborhood*, which shouldn't be spelled this way, are too common for me to let `rh` produce  $\text{ṛ}$ .)
- (12) In tehta mode, never use N unless the next letter is `g` or `G`. For technical reasons,  $\langle \text{vowel} \rangle + \text{Ng}$  and  $\langle \text{vowel} \rangle + \text{mg}$  produce the same thing in tehta mode; in the unlikely event that you actually want a word with *mg* in it,<sup>11</sup> you'll want to separate them `m{g}`.
- (13) In tehta mode, you probably want to get  $\text{ḍ}$  with `Wh` after vowels because it will place the tehtar better. You usually want to get  $\text{č}$  with `CH` for the same reason; however, the only way to get  $\text{č̣}$  is with `nCH`. (`nCH` won't work, since we don't want just `nC` to produce  $\text{č̣}$ .)

If you want to go further and spell *age* and *his* as they are pronounced (as *aje*, *hiz*), you will need to spell them in the input as `ajE`, `hiz`. (Tolkien used *az* for *as* in [LOTR], but spelled *his* and *bridge* as *his* and *bridge* (not *hiz* and *bridje*) in [Letter].)

## 8. ENGLISH PHONEMIC MODE

Tolkien originally wrote English with Tengwar phonemically. His orthographic modes were a later development. While many people find them easier to read, it's still the case that we have more examples in the original phonemic mode.

This mode is intended for tengwar experts. I don't think I can explain it (in part because I don't entirely understand it); you have to just read the examples to see what's going on. The orthographic mode is usually easier both to write and to read (at least for people who can already read English). If you must use this mode, here are some notes:

Andaiths (accents) to indicate long vowels are (usually) not used in this mode; in [Leithien], *Lúthien* is spelled  $\text{Lúthien}$ .

The abbreviations  $\text{ā}$  and  $\text{ā}$  are not used in this mode; *of* is spelled  $\text{ā}$ , *of the* is spelled  $\text{āā}$   $\text{ā}$ .  $\text{ā}$  is still used for *the*.  $\text{ā}$  is not an abbreviation; that's the correct spelling of *and* in this mode.

<sup>9</sup>`\the` and `\and` are predefined T<sub>E</sub>X macros, so I did not want to redefine them.

<sup>10</sup>The other obvious possibilities are *rr*, *rd* and that it simply isn't used. *rd* and *rr* are spelled  $\text{rd}$  and  $\text{rr}$  in all three drafts of [Letter], and *rh* has to be spelled with *something*.

<sup>11</sup>[Ispell] knows two such words: *broomgrove* and *slumgullion*.

TABLE 4. English full phonemic mode

The table shows the appropriate tengwa, the letters to type in, the IPA pronunciation symbol, and an example word or two. Red symbols are not attested; green symbols are probably not used; blue symbols are used as variants, or in [Thorin], which uses a subtly different mode from the main example texts [Errantry], [Leithien], and [Bombadil].

Many people speculate that **ca** should be used for *n̄* (as in *canyon*); however, the only attested *ny*-sound in the reference texts is the word *news*, which is spelled **n̄w̄** instead of **ca**.

Note that **u** is not available in all fonts; **α** will be substituted if necessary. **ʒ/cd** also occurs in *measure*, *beige*.

<b>p</b>	t	t	tote	<b>p</b>	p	p	pipe
<b>p̄</b>	d	d	did	<b>p̄</b>	b	b	bob
<b>h</b>	th	θ	think	<b>h</b>	f	f	five
<b>h̄</b>	dh, tH	ð	there	<b>h̄</b>	v	v	eve
<b>m</b>	n	n	nine	<b>m</b>	m	m	mime
<b>n</b>	r	r	are	<b>n</b>	u	ʊ or u	pull or fume
<b>ç</b>	ch	tʃ	church	<b>ç</b>	k	c, k	cat
<b>ç̄</b>	j	tʃ	age	<b>ç̄</b>	g	g	gold
<b>d</b>	sh	ʃ	shade	<b>d</b>	kh	x	loch
<b>cd</b>	zh	ʒ	azure	<b>cd</b>	gh		
<b>ca</b>	nY, \~n			<b>ca</b>	ng	ŋ	sing
<b>α</b>	U	Λ	under	<b>α</b>	a	a	are
<b>ʁ</b>	R	R	real	<b>ʁ</b>	l	l	lull
<b>ʒ</b>	s	s	this	<b>ʒ</b>	z	z	was
<b>λ</b>	h	h	hat	<b>o</b>	o	ɐ	gone
<b>j</b>	y	j	you	<b>λ</b>	wh	Λ	whale
<b>ʒ</b>	w	w	water	<b>ʒ</b>	W	w	water
<b>ı</b>	A, E, I, O	ə	about, taken, pencil, eloquent, circus, sibyl.				
<b>α</b>	U	Λ	under	<b>ı̇</b>	ee	i	teen
<b>i</b>	i	ɪ or i	in or he	<b>n</b>	u	ʊ or u	pull or fume
<b>ç, ç̄, ç̇</b>	e	ɛ	bell	<b>n̄</b>	uu	u	blue
<b>ç̇̄</b>	ei	eɪ	grey	<b>o</b>	o	ɐ	gone
<b>α</b>	a	a	are	<b>ó</b>	oa	ɔ	water
<b>ᾱ</b>	aa	æ	hat	<b>ö</b>	oi	ɔɪ	joy
<b>α̇</b>	ai, ii	aɪ	light	<b>õ</b>	ou, oo	oʊ	yellow
<b>α̇̄</b>	au	aʊ	brown				
<b>α̇̄</b>	\'a	\'e		<b>ı̇</b>	\'i	<b>ó</b>	\'o
<b>ı̇</b>	\'u	\'r		<b>u</b>	V		
<b>ı̇̄</b>	ui	eu		<b>ı̇̄</b>	uo	<b>ı̇̄</b>	ao
<b>ç̇̄</b>	Rh	L		<b>ç̇̄</b>	S	<b>ç̇̄</b>	Z
<b>d</b>	hw	Y					

You can get a schwa using any of the letters A, E, I, or O. A schwa can be indicated either with an undotted carrier, or an underdot under the *following* tengwa. I haven't been able to figure out a systematic rule for when a dot is used and when a carrier is used; therefore, E and A turn into underdots if they are followed by a reasonable letter and I and O do not.

A y after most consonants turns into double overdots (as in *ṗṛṛḥṛṛṛṛ perfume*); a W after some consonants or consonant groups (t, d, g, s, th, and sh) becomes an overtwist.

Everything else should be based on the table. Note that some pronunciation symbols show up twice; for example, both *i* and *ī* have IPA symbol *i*. This is not a coincidence; Tolkien sometimes used one, sometimes the other. (He used *each of them* in the word *beard*. This might be a mistake; or it might be because both spellings are "correct". Usually, *i* is used at the ends of words and *ī* is used inside words. The difference between *ṛ* and *ṝ* seems to be mostly a matter of stress.)

Finally, note that all this analysis is based on Tolkien's examples, which are based on the way English was pronounced by educated Englishmen in the early twentieth century. If you want to spell things differently because you pronounce things differently because you are a twenty-first-century American, that's probably all right.

## 9. WRITING DIRECTION

According to [Sarati], *sarati* was often written right-to-left, boustrophedon (alternating left-to-right), or vertically.

A small package called `boustr.sty` should have come with `tolkienfonts`. It contains some environments for writing direction:

<code>\begin{rtl}</code>	Right to left	
<code>\end{rtl}</code>		Right to left
<code>\begin{boustrophedon}</code>	Boustrophedon...	Boustrophedon, starting on the
<code>\end{boustrophedon}</code>		right and switching to the left.
<code>\bousttrightfalse</code>		Boustrophedon, starting on the
<code>\begin{boustrophedon}</code>	Boustrophedon...	left and switching to the right.
<code>\end{boustrophedon}</code>		
<code>\begin{sidewaysflip}{1in}</code>	Flipped vertical text	Flipped vertical text
<code>\end{sidewaysflip}</code>		

(I didn't see the need to make a plain sideways environment; the `rotating` package already has one.)

Be warned that `rtl` and `boustrophedon` do bad things to displayed math, and stop working if you put any of a number of odd things (such as `\clearpage`) inside; don't do anything too weird inside these environments. In particular, don't make any zero-point vertical skips inside the environment; if for some reason you really want to say `\setlength{\parskip}{0pt}`, make it `\setlength{\parskip}{1sp}` instead.

`rtl` could perhaps have avoided this, but I wanted it to be capable of breaking across pages.

## 10. RAW FONTS

If you examine the documentation that came with your tengwar fonts, you'll see that the keymapping is, frankly, bizarre. To get  $\text{ñ}\text{m}\text{j}\text{p}'$  out of these fonts, you have to type `5#t~C7T'V`; being able to get it by typing `nam\`arie` instead is the entire point of this package.

Nonetheless, fonts in their raw form have their uses. Occasionally, you may find that you want to use, say,  $\text{f}$ . But Tolkien only used this symbol when writing Old English, so it's not available in any standard mode. Alternatively, you may have already determined that in the raw font, `7D~Vj% j%k$w#3G w6E15~` produces your name, and want to copy and paste. You can get the raw encoding with the commands `\tengfont` and `\tengalt`.

In the raw font, many important glyphs are placed over special characters. The easiest way to get `-`, `j` and  $\text{p}'$  is with `\tengfont{\char'\}`, `\tengfont{\char'\~}` and `\tengfont{2\char'\~}`. Several of the other characters (`#`, `$`, `%`, `&`, `_`, `{`, and `}`) must be preceded by a backslash `\` to come out properly.

The unusual characters can be referenced with the `\char` command. For example, the Tengwar Annatar keyboard map says that  $\text{z}$  is character 190; to get it in  $\text{\TeX}$ , use `\tengfont{\char190}`.

The commands `\cirthfont`, `\saratifont`, and `\valmarfont` are defined similarly.

### APPENDIX A. DOING WITHOUT `tolkienfonts.sty`

Most of the work of `tolkienfonts` is done by the virtual fonts; the file `tolkienfonts.sty` provides macros, environments, package options, etc., but can be dispensed with if necessary.

The (real and virtual) fonts used by `tolkienfonts` do not follow the Berry naming scheme. Instead, the font names are constructed by starting with the script name (usually `Tengwar`) and appending three capital letters to indicate font, language, and mode, plus (for Tengwar Annatar) a few lowercase letters to indicate font shape.

So the virtual font for `beleriand` is `TengwarASB`. See Table 5 for the complete font/mode list.

The names of the  $\text{\LaTeX}$  font families are constructed by taking the names of the (normal-shaped) fonts and translating them to lowercase.

In  $\text{\LaTeX}$ , you can use these fonts without `tolkienfonts` in a few ways:

- You can create a text-mode command
 

```
\DeclareTextFontCommand{\Beleriand}
  {\fontencoding{T1}\fontfamily{tengwarasb}\selectfont}
```

 which you can use like `\textbf{\Beleriand{tin}\`uviel}`
- Alternatively, you can change fonts directly inside the document:
 

```
\usefont{T1}{tengwarasb}{m}{n} tin\`uviel
```
- Or if you want the entire document in `tengwar`, you can use
 

```
\renewcommand{\rmdefault}{tengwarasb}
```

TABLE 5. Font family names and modes

Scripts and fonts	
<b>TengwarA</b>	Tengwar Annatar
<b>RuneE</b>	Cirth Erebor
<b>SaratiE</b>	Sarati Eldamar
<b>SaratiB</b>	Sarati Eldamar with bar
<b>Valmaric</b>	Valmaric Eldamar

Languages and modes	
<b>A</b>	Raw font Raw alt font
Tengwar	
<b>QQ</b>	Quenya default mode
<b>QR</b>	Quenya red mode
<b>QG</b>	Quenya generic mode
<b>QA</b>	Quenya mode without as
<b>SA</b>	Sindarin mode of Arnor
<b>SG</b>	Sindarin mode of Gondor
<b>SB</b>	Sindarin mode of Beleriand
<b>EO</b>	English full orthographic mode
<b>EM</b>	English mode of Mazarbul
<b>ET</b>	English tehta orthographic mode
<b>EP</b>	English full phonemic mode
Runes	
<b>QE</b>	Angerthas Daeron/Eregion, arranged for Quenya
<b>SD</b>	Angerthas Daeron/Eregion, arranged for Sindarin
<b>DM</b>	Angerthas Moria, arranged for Dwarvish
<b>EE</b>	Angerthas Erebor, arranged for English
<b>EH</b>	Runes from <i>The Hobbit</i> , arranged for English
Sarati/Valmaric	
<b>QQ</b>	Quenya default mode
<b>QA</b>	Quenya mode with as

```
\begin{document}
tin\'uviel
```

All of these produce  $\rho\mu\acute{o}\beta\eta\lambda\alpha\tau$ .

In plain T<sub>E</sub>X, you use direct font definitions

```
\font \beleriand = TengwarASB
```

as usual.

In either case, you should be aware of a few things. First, to adjust the spacing, you need to adjust some spacefactor codes:

```
\sfcode{,}=2000 \sfcode{;}=2000
```

for all fonts, and

```
\sfcode{')}=1000 \sfcode{']}=1000 \sfcode{'?}=1999
\sfcodes{!=1999
```

for tengwar.

If you're likely to use a capital letter just before a punctuation mark, you might want to say `\sfcode'R=1000` to fix the spacing.

Also, the commands

```
\^ \" \ten \eleven \twelve \ldots \of \ofthe \The \THE
& \r \R \s \es \sa \se \si \so \su
```

and `\` (non-English modes) and `\_` (runic modes) are redefined by `tolkien-fonts.sty`; don't use them with tengwar without it. You can get ten and eleven with `<` and `>`.

You can do without `\` (by using quote marks or dashes); you can get long vowels with a left quote `‘`. Alternatively, if you want `\'` (and `\"`, in English modes) to work properly, in L<sup>A</sup>T<sub>E</sub>X, you can use the `fontenc` package:

```
\usepackage[T1]{fontenc}
```

In plain T<sub>E</sub>X, you can use `plainenc`:

```
\input plainenc
\fontencoding{T1}
```

If you do this, you might want to say `\let \^ \'` to redefine `\^`.

## APPENDIX B. TENGWAR DISCUSSION: WHY DID I MAKE THE MODE CHOICES I DID?

Given the paucity of examples, there are a lot of decisions I had to make regarding the fine points of mode operation. They are discussed below.

Note: *kh* refers to the Scottish, German or Sindarin hard *ch*, not the English soft *ch*; it sounds more like a cat hissing than anything in English. It is usually transliterated *ch*; in this appendix, I am going to call it *kh* to distinguish the two. If you don't speak German, Westron speakers often substituted *sh* for *kh*.

**B.1. Quenya modes.** The Quenya tengwar mode is based on descriptions in [Appendix E], the example [Namárië], and also on the analysis in [Textbook] and [Quenya]. (If you don't know anything about the Quenya mode and you would like to, [Quenya] is a good place to start.)

To construct `\Eregion` and the sarati and valmaric fonts, I used [Appendix E], [Sarati] and [Valmaric] to determine which glyph meant which sound. Additional rules were then taken from the tengwar mode.

There was one decision I had to make: what to do with **h**.

**B.1.1. The *h* question.** So: does *aha* have an *aha* in it?

It would not be unprecedented for the answer to be no. If we follow the usual *r*-rule, *óre* is spelled  $\acute{r}\acute{o}$ , with a *rómen*—no *óre* is present.

Here's what we know.

Originally, Quenya had a *kh* sound. It was written with **cl**; the Noldor named this letter *kharma*. Quenya also had an *h* sound (as in English *house*); it was written with **l**. Finally, it had a *hy* sound, written with **λ**.

At some point, the Noldor decided that words which *began* with *kh* should begin with *h* instead. Somewhat unusually (possibly because they were keeping *khs* that



occurred inside words), they decided to alter the spellings of these words. At or around this time, they started to use  $\lambda$  for the *h* sound, and  $\lambda$  for *hy*.<sup>12</sup>

So now *harma* did not have a  $\mathfrak{c}$  in it. The Noldor began to call  $\mathfrak{c}$  *aha*; presumably, at that time, *aha* was spelled  $\mathfrak{c}$ . However, according to [Appendix E], *any h* standing on its own with no nearby consonants is pronounced as in *house*. (*ht* is for some strange reason pronounced as *kht*.)

There are two possible explanations for this situation.

- When they started calling  $\mathfrak{c}$  *aha*, it was pronounced *aha*, not *akha*. This doesn't make sense to me.
- When they started calling  $\mathfrak{c}$  *aha*, it was pronounced *akha*, not *aha*. Quenya *later* lost all of its remaining *khs* except those just before *ts*. For whatever reason, the Noldor didn't change the name of  $\mathfrak{c}$  again.

It should be noted that Tolkien mentions *kh* as “remaining medially”, but that [Quenyanna] has no *chs* or *khs* in it; as far as we know, in Third Age Quenya, *kh* only happens just before *t*. It is possible that *kh* originally only happened at the start of words or before *t*, but it seems unlikely.

It should also be noted that the Sindarin words *acharn* and *achas* mean *vengeance* and *dread*; it seems likely that they and *aha* come from a common proto-Eldarin root with a *kh* in it.

In the first case, all medial *hs* should be spelled with  $\mathfrak{c}$ . In the second case, *hs* before *ts* should probably be spelled with  $\mathfrak{c}$ . Medial *hs* that used to be *khs* might *also* still be spelled with  $\mathfrak{c}$  (which would explain why *tehta* is not spelled *techta*); unfortunately, we don't actually know which *hs* used to be *khs*. You can guess based on Sindarin cognates; you can assume that it is all of them; or you can just write them with  $\lambda$ s instead.

This is what `tolkienfonts` does: it uses  $\mathfrak{c}$  before a *t*,  $\mathfrak{f}$  before a *r* or *l*, and  $\lambda$  for all other *hs* which are not part of combinations. If you want a medial *h* to be written with  $\mathfrak{c}$ , you have to use `ch` or `kh` instead.

**B.2. Sindarin modes.** The mode of Beleriand is based on [Elbereth] and [Durin], as well as on the analysis in [Appendix E], [Sindarin] and [Textbook]. The Third Age Sindarin modes (`\Arnor` and `\Gondor`) are based mainly on [Letter], but also on [LOTR] and [Appendix E].

`\Daeron`, like `\Eregion`, is based on the Angerthas Daeron in [Appendix E], with some special rules that parallel rules in the tengwar mode.

Aside from the minor point of *mh* ( $\mathfrak{m}$  in the mode of Gondor, and so presumably  $\mathfrak{m}$  in the mode of Beleriand), most of the uncertainty in the Sindarin tengwar modes lies in how to deal with *u* after a vowel or *w* in any situation.

In the *tehta* mode, we use  $\mathfrak{o}$  for *au*, because Quenya spells *au* as  $\mathfrak{o}$ , and the full modes use  $\mathfrak{o}$  for *u*.

[Letter] uses overtwists in Sindarin for *w* after a consonant (labialization). It also uses overtwists for English *u*-glide diphthongs. Therefore, I use overtwists for labialization and *u*-glide diphthongs in both of the Third Age modes.

It seems reasonable to assume that the mode of Beleriand is meant to be easy for native Quenya readers to deal with, and that the Sindarin modes of Gondor and

<sup>12</sup>They kept *l* around to help them indicate voiceless *r* and *l*:  $\mathfrak{r}$ ,  $\mathfrak{l}$ . These are probably the same sounds which Sindarin writes with  $\mathfrak{r}$  and  $\mathfrak{l}$ ; in Quenya, they are usually transcribed as *hr* and *hl* instead of *rh* and *lh*.

Arnor are meant to be easy for native Westron readers to deal with. The modes of Beleriand and Gondor were used thousands of years apart, by people of different races; while they are both Sindarin modes, there’s no real reason to expect them to be similar.

Analogy with Quenya<sup>13</sup> leads me to conclude that in the mode of Beleriand, Series IV probably represents labialization of Series III. So *gw* and *chw* are  $\text{ḡ}$  and  $\text{č}$ , not  $\text{ḡ}$  and  $\text{č}$ . (*dw* is written with  $\text{ḡ}$  plus a tehta, since  $\text{ḡ}$ ,  $\text{č}$  or  $\text{ḡ}$  would be confusing.)

[Appendix E] says that “the sign for following *w* (required for the expression of *au*, *aw*) was in this mode the *u*-curl or a modification of it”. This could be interpreted to mean an overtwist  $\text{č}$ , as in the Third Age modes; however, the overtwist does not seem to be used in writing Quenya, and so the mode of Beleriand, as used in Beleriand, probably used simply the *u*-curl  $\text{č}$ . (Maybe the mode of Eregion used the overtwist.) *dw* is written with the same tehta.

Quenya and the mode of Beleriand both use  $\text{ḡ}$  for *w*. However, [Appendix E] says that  $\text{ḡ}$  was “often used for *w*”, and  $\text{ḡ}$  is used in *war* and *Westmarch* in the title-page inscription for *The Lord of the Rings*, which is English written “as a man of Gondor might write it”. Therefore, Westron tehta mode<sup>14</sup> probably used  $\text{ḡ}$ , and so the modes of Gondor and Arnor are assumed to do the same.

**B.3. English and Dwarvish.** The full orthographic English mode supplied by `orthmode` is based on [Letter]; the `mazarbul` variant is based on [Mazarbul]. The cirth mode `erebor` is based on [Mazarbul] as well (it has some pages written with cirth and some pages written with tengwar).

The mode `moriam` is based almost entirely on [Appendix E]. The only extant text written in this mode (in fact, the only extant text in Dwarvish at all) is [Balin]. If Dwarvish has any special rules, I don’t know what they are.

We have very few tehta mode examples. (There is [LOTR], [TTT], [Brogan], and [Endorion]. That’s about it.) What’s more, the examples we do have are inconsistent. [TTT] uses  $\text{ḡ}$  for *o*; [Brogan] uses  $\text{ḡ}$  for *e* and  $\text{ḡ}$  for *i*; etc.

Therefore, the English tehta mode supported by `tolkienfonts` derives many of its rules from the English orthographic mode and the mode of Gondor.

These two modes agree on everything, except:

- *ch*, *j*, *sh*, *x*, *z*, silent *e*, and the *c+h* in *echo* occur in English. Thus,  $\text{č}$  cannot be *ss*, and the tengwar for the others are actually used.
- The letter  $\text{ḡ}$  is used for soft *c* in the orthographic full mode examples. Soft *c* does not come up in any of the tehta mode examples; Tolkien never uses  $\text{ḡ}$  for *s*, even when there are tehtar present and using a  $\text{ḡ}$  would be convenient.
- In the mode of Gondor,  $\text{ḡ}$  is used for *e* only when it is the second letter of a diphthong (that is, only for “*e*-glide”); in English orthographic mode, it is used for all non-silent *es*. (The Gondorians also use it for an *i* followed by a vowel at the start of a word, which is pronounced as a consonantal *y*.)

<sup>13</sup>Also see [Appendix E]: “*hwesta sindarinwa* [ $\text{č}$ ] or ‘Grey-elven *hw*’ was so called because in Quenya [ $\text{č}$ ] had the sound of *hw*, and distinct signs for *chw* and *hw* were not required.”

<sup>14</sup>[History] presents charts for a Westron tehta mode (which does use  $\text{ḡ}$  for *w*) and Westron full mode which are virtually identical to the charts for English tehta and orthographic modes. The full Westron mode there, like English orthographic mode, uses  $\text{ḡ}$  for *w*,  $\text{ḡ}$  for *u* and  $\text{ḡ}$  for *a*. We know that the mode of Arnor uses  $\text{ḡ}$  for *u*. It could theoretically use either  $\text{ḡ}$  or  $\text{ḡ}$  for *w*; it would, however, be less confusing to Westron writers if *u* and *w* just switched.

- English full modes use  $\imath$  and  $\jmath$  for  $i$  and  $y$ . Obviously, these symbols are not available in any tehta mode. In English tehta mode, tehtar are available to represent  $i$  and vocalic  $y$ ; some letter needs to be chosen for consonantal  $y$ .
- The letters  $\mathfrak{w}$  and  $\mathfrak{c}$  mean  $u$  and  $o$  in full English orthographic mode, but mean  $w$  and  $i$ -glide in the Mode of Gondor.
- The letters  $\mathfrak{a}$  and  $\mathfrak{o}$  mean  $a$  and  $w$  in full English orthographic mode. One of these probably means  $u$ -glide in the Mode of Gondor, and the other is probably not used. Everyone seems to guess that  $\mathfrak{o}$  is used for  $u$ -glide, but I don't believe that we have any attested examples.

So to construct a tehta mode, we need to decide the following:

- What tehta do we use for vocalic  $y$ ? (I use  $\check{\imath}$ , since both [LOTR] and [Brogan] do. The mode of Gondor uses  $\check{\imath}$ .)
- What tengwa do we use for consonantal  $y$ ? ([Brogan] uses  $\mathfrak{c}$ , so that's what I use.)
- Which tengwa do we want to use for  $w$ ? (I follow [Brogan] and [LOTR] and use  $\mathfrak{w}$ .)
- Do we use  $\acute{e}$  for  $e$  and  $\acute{i}$  for  $i$ , or vice versa? The first one is consistent with both Quenya mode and the mode of Gondor; the second one uses some form of dots for both kinds of  $e$ . This is particularly useful if we want to imitate Christopher Tolkien and use other undertehtar. ([Brogan] uses  $\acute{i}$  for  $e$ ; [LOTR] and [Endorion] use  $\acute{e}$  for  $e$ . I don't like undertehtar, and I find that I can remember that underdot and overaccent mean the same letter fairly easily, whereas if I use  $\acute{i}$  for  $e$ , I get confused whenever I try to read an inscription in Quenya mode or the mode of Gondor.)
- How do we write diphthongs? This is really the big one. We have three standard tengwar left:  $\mathfrak{a}$ ,  $\mathfrak{x}$ , and  $\mathfrak{o}$ . (We also have  $\mathfrak{c}$  and  $\mathfrak{y}$ ,  $\mathfrak{z}$ .) We could just write out the two tehtar, with a carrier or two. Tolkien does this for  $ea$  and  $io$  in [Brogan], but had switched from  $\mathfrak{i}\mathfrak{t}$  to  $\acute{e}$  by the time he wrote [Endorion]; I prefer to write as he did in [Endorion].
  - [Endorion] uses  $\mathfrak{c}$  for its  $a$ -glide diphthong.<sup>15</sup>
  - [Endorion] uses  $\mathfrak{x}$  for its  $e$ -glide diphthong. So does the mode of Gondor.
  - Since we're using  $\mathfrak{c}$  for the consonantal  $y$  in *you*, it makes sense to use it for  $y$ -glide diphthongs as well. And given the relationship between  $i$  and  $y$  (e.g. *they/their*, *liar/lying*), it makes sense to use the same character for  $i$ -glide and  $y$ -glide, if we have to have any overlaps.
  - [Brogan] makes  $\mathfrak{w}$  do double duty as  $w$  and  $u$ -glide. [LOTR] and [Endorion] have no  $u$ -glides, so they cannot contradict this. On the other hand, this is ambiguous, and it makes no sense to use  $\mathfrak{o}$  or  $\mathfrak{a}$  as  $y$ ; they are available to be  $u$ -glide and  $o$ -glide. Which is which, however, is a matter of personal choice: I like to use  $\mathfrak{o}$  for  $u$ -glide, since it means that if you happen to find yourself mentioning *Aulë* or *Sauron* in your tengwar texts, you will spell those names more or less as they were spelled in Middle-Earth.
  - $o$ -glide diphthongs (as in *people*) are rare, unless you include words ending in *tion*, *cion*, *sion*, which I don't like to since the  $i$  in those words goes to modifying the preceding consonant—it's not part of the

<sup>15</sup>Technically, there are no  $a$ -glide diphthongs in English speech; however, in English writing,  $ea$  and  $oa$  show up quite often, so for the sake of brevity I refer to them as  $a$ -glide diphthongs.

vowel. Unfortunately, we have no attested examples of *people*, and only one example of *tion*, which is in [Brogan]. There are no *o*-glide diphthongs in any Elvish language, and the full Elvish and English orthographic modes all use *ɔ* for *o*, which is taken. English phonemic inscriptions use *o* for *o*, which I want to use for *u*. I use *ɔ* for *o*-glide just because it’s the only thing left.<sup>16</sup>

#### APPENDIX C. VIRTUAL FONTS AND THE FONTINST PACKAGE

The way `tolkienfonts` is constructed, I need a separate virtual font for each mode/base font/color combination. For full color effects as seen in [Namárië], you’d want both a red-tehtar-black-tengwar and a black-tehtar-red-tengwar font (plus a plain font for normal use). I’ve got this package set up to allow for nine different tengwar fonts (counting the four flavors of Tengwar Annatar).

Rather than having this package come with hundreds of supporting files, I’ve decided to include one font (Tengwar Annatar normal) and one colored mode as examples, and give what you need to make the supporting files for colored tehtar and other fonts yourself.

The correct Quenya spelling of “Arda” is *ṛḡ*. In most modern tengwar fonts, you get *ṛḡ* by typing ‘CuF. The purpose of this package is to let you get *ṛḡ* by typing `\Quenyared{\textbf{arda}}`. Here’s how L<sup>A</sup>T<sub>E</sub>X does it:

- The `.sty` file defines the command `\Quenyared`, which says, “L<sup>A</sup>T<sub>E</sub>X! Switch to the font encoding T1 and the font family `tengwaragr`!”
- L<sup>A</sup>T<sub>E</sub>X finds the file `t1tengwaragr.fd`. It has a bunch of font-family commands, one of which says, “L<sup>A</sup>T<sub>E</sub>X! If you’re using this family, then tell T<sub>E</sub>X to use the font `TengwarAQRb` for bold-width, normal-shaped text!”
- T<sub>E</sub>X looks for the files `TengwarAQRb.tfm` and `TengwarAQRb.vf`. The `.tfm` file says, “T<sub>E</sub>X! You should allocate 3.04pt for that first `a`, you should turn all `rds` into the character in Slot 14, and you should turn all `as` that come after that character into the character in Slot 130!”
- The `.vf` file says, “T<sub>E</sub>X, you’re not done yet! I need you to replace all the `as` with the characters ‘C from the font `tnganb` and replace the character in Slot 14 with the character `u` from `tngan`. Oh, and while you’re at it, make the `C` red.”
- T<sub>E</sub>X goes and looks up the width of the ‘ in the file `TengwarAb.tfm`, so that it knows where to put the `C`.
- T<sub>E</sub>X checks to make sure there’s no file `TengwarAb.vf`, and, satisfied, finishes its job. We now know that we want the sequence of glyphs ‘CuF from the font `TengwarAb`.
- Now, it’s some other program’s job to figure out whether `TengwarAb` means `tnganb.ttf` or `tnganb.pfb` or `TengwarAb.mf` or what, actually grab the appropriate glyphs, and place them into the PDF or PostScript file (or display them on the screen). pdfT<sub>E</sub>X combines this step with the previous steps; `dvips` and so on keep them separated.

So, if you want to use Tengwar Parmaite (for example) instead of Tengwar Annatar, you need to make all those files.

<sup>16</sup>You could also make `ɔ` do double duty, as in [Brogan], which would free up `o` to be *o*-glide. Or you could just write *eo* as *é* no matter how it’s pronounced.

C.1. **Adding new fonts.** I've included the files you'll need to set up for the following fonts:

- The other three Tengwar Annatar fonts
- Tengwar Parmaite
- Tengwar Eldamar
- Tengwar Noldor
- Tengwar Quenya
- Tengwar Sindarin

You can switch between fonts with the commands `\annatar`, `\eldamar`, `\noldor`, `\parmaite`, `\fontquenya`, and `\fonsindarin`. Note that these commands need to be given outside the font commands they are to affect. `\Beleriand{1\'uthien \eldamar tin\'uviel}` produces  $\mathcal{T}\acute{o}\mathcal{h}\mathcal{i}\mathcal{a}\mathcal{n}\mathcal{p}\mathcal{i}\mathcal{n}\acute{o}\mathcal{h}\mathcal{i}\mathcal{a}\mathcal{T}$ ; to get  $\mathcal{T}\acute{o}\mathcal{h}\mathcal{i}\mathcal{a}\mathcal{n}\mathcal{p}\mathcal{i}\mathcal{n}\acute{o}\mathcal{h}\mathcal{i}\mathcal{a}\mathcal{T}$ , use `\Beleriand{1\'uthien} \eldamar \Beleriand{tin\'uviel}`.

To set up these fonts, start by going to the `tolkieninst` folder. Find the file `tolkieninst.tex` and open it.

Find the lines

```

%%%% Tengwar Parmaite %%%

%\installfonts
%\installfontas{TengwarP}{T1}{tengwarp}{m}{n}{}

: : :

%\endinstallfonts

```

Uncomment every line in that block, starting with the `\installfonts` and ending with the `\endinstallfonts`. If for some reason you only want a few modes, uncomment the `\installfonts` and `\endinstallfonts` lines and the lines for whatever mode it is you want. (The `\installfontas` lines make the `.fd` files for `\tengfont` and `\tengalt`.)

All the `\installfont` and `\installfontas` lines for Tengwar Annatar, Cirth Erebor, Sarati and Valmaric are uncommented, since this is the file I used to make the files that came with this package; you probably want to comment them out.

Now, run `tolkieninst.tex` through plain  $\text{T}_{\text{E}}\text{X}$  (not  $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ ). This will generate a bunch of `.vpl` files. Open up a command line and type

```
for file in *.vpl; do vptovf $file; done
```

If this doesn't work, you'll have to type something like `vptovf TengwarPQQ` for every generated `.vpl`.

This should give you a bunch of `.fd` files, a bunch of `.vf` files, and a bunch of `.tfm` files, which should be dealt with as usual. The `.vpl` files may be deleted.

Quenya, Noldor, and Sindarin can be dealt with in the same way. If you want to include multiple shapes of Tengwar Annatar, it's strongly recommended that you do all four shapes at once. This will automatically write all four shapes to the `.fds`, which in turn will let you pick them out with the  $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$  commands `\emph` and `\textbf`.

C.2. **Adding color.** The easiest way to get odd color effects is to build them into the virtual font.

Open the file `tolkieninst.tex`. Figure out which font you want to edit.

Suppose that you decide you want `\Beleriand` after `\noldor` to produce green tehtar and punctuation. You want the line `\installfont{TengwarNSB}`: N for the Noldor font, S because `\Beleriand` is a Sindarin mode, and B for Beleriand. (See Table 5.) Uncomment that line, the preceding `\installfonts`, and the next `\endinstallfonts`.

The important line starts with:

```
\installfont{TengwarNSB} {fontNoldor,effectPunctspace,...
```

Add `effectColor` just before `effectPunctspace`:

```
\installfont{TengwarNSB} {fontNoldor,effectColor,effectPunctspace,...
```

Now, open the file `effectColor.mtx`. Find the lines

```
\setcommand\tehta#1{%   Red
  \ifisglyph{#1}\then
    \setglyph{#1black}\glyph{#1}{1000}\endsetglyph
    \setleftrighthkerning{#1black}{#1}{1000}
    \resetglyph{#1}
    \glyphspecial{pdf: 0.8 0 0 rg} %pdfTeX
    %\glyphspecial{color push rgb 0.8 0 0} % dvips
    \glyph{#1}{1000}
    %\glyphspecial{color pop} % dvips
    \glyphspecial{pdf: 0 g 0 G} %pdfTeX
  \endresetglyph
\fi
}
```

It's the `\glyphspecial` lines that change color. Next we have to fix the color code to be green instead of red.

If I say

```
\definecolor{mygreen}{rgb}{0,0.6,0} {\color{mygreen} test}
```

I get a nice green; so I change the `0.8 0 0 rg` to `0 0.6 0 rg`. (It's a lot faster to fiddle with colors in  $\text{\LaTeX}$  before you start changing them in `color.mtx`.)

Now, we're ready. Run the file `tolkieninst.tex` through plain  $\text{\TeX}$  (not  $\text{\LaTeX}$ ). The result should be a few generated files. Go to a command line and run `vptovf TengwarNSB`; among your newly generated files should be the file `TengwarNSB.vf`. Replace the old `TengwarNSB.vf` with this one, and you're done.

If you want to make entirely new fonts rather than replacing old ones, then you should copy the line

```
\installfont{TengwarNSB} {fontNoldor,effectPunctspace,scripttengwar}
  {modeBeleriand} {T1}{tengwarnsb} {m}{n}{}
```

and change it to

```
\installfont{TengwarNSBG} {fontNoldor,effectColor,effectPunctspace,
  scripttengwar} {modeBeleriand} {T1}{tengwarnsb} {m}{n}{}
```

This will generate a new font `TengwarNSBG` and a new font family `tengwarnsb`. See Section A to see how to use them.

**C.3. Adjusting the spacing.** Getting rid of the special tengwar spacing rules is even easier. Just delete the `effectPunctspace` in the `\installfont` lines:

```
\installfont{TengwarNSB}{fontNoldor,effectPunctspace,scripttengwar...
```

becomes

```
\installfont{TengwarNSB}{fontNoldor,scripttengwar...
```

Then you run `tex tolkieninst` and compile your `.vpls` as usual.

## APPENDIX D. FONT TABLES

Asterisks indicate letters or letter combinations whose behavior depends on neighboring characters.

Single \*s indicate word boundaries:  $\text{ɛ ng}^*$  means that  $\text{ng}$  produces  $\text{ɛ}$  *only* when they are the last two letters in the word. If for some reason you really want  $\text{ɛ̄}$  at the end of a word, use an apostrophe.

Double \*\*s indicate that the characters that trigger the special behavior are all vowels:  $\text{ɣ}^{**}\text{s}$  means that  $\text{s}$  produces  $\text{ɣ}$  to accomodate tethtar,  $\lambda^{**}\text{i}$  means that  $\text{i}$  produces  $\lambda$  when used in appropriate diphthongs, and  $\text{ɣ r}^{**}$  means that  $\text{r}$  produces  $\text{ɣ}$  whenever the next letter is a vowel.

TABLE 6. Quenya mode

$\text{p}$	$\text{t}$	$\text{p}$	$\text{p}$	$\text{c}$	$\text{c, k}$	$\text{q}$	$\text{q, qu}$
$\text{ɸ}$	$\text{d, nd}$	$\text{ɸ}$	$\text{b, mb}$	$\text{cɣ}$	$\text{g, ng}$	$\text{ɥ}$	$\text{gw, ngw}$
$\text{h}$	$\text{th, S}$	$\text{h}$	$\text{f, ph}$	$\text{ɔ}$	$\text{h***, ch, kh}$	$\text{ɔ}$	$\text{hw, chw, khw}$
$\text{h}$	$\text{nt}$	$\text{h}$	$\text{mp}$	$\text{ɔd}$	$\text{nc}$	$\text{ɔd}$	$\text{nq, nqu}$
$\text{ɳ}$	$\text{n}$	$\text{ɳ}$	$\text{m}$	$\text{ɔa}$	$\text{*ng, N}$	$\text{ɔa}$	$\text{*nw, Nw}$
$\text{ɳ}$	$\text{r}$	$\text{ɳ}$	$\text{v}$	$\text{ɔ}$	$\text{Y}$	$\text{ɔ}$	$\text{w, V}$
$\text{ɣ}$	$\text{r}^{**}, \text{R}$	$\text{ɣ}$	$\text{rd}$	$\text{ɔ}$	$\text{l}$	$\text{ɔ}$	$\text{ld, L}$
$\text{ɔ}$	$\text{s}$	$\text{ɔ}$	$\text{s}^{**}, \text{C}$	$\text{ɔ}$	$\text{ss, z}$	$\text{ɔ}$	$\text{ss}^{**}, \text{Z}$
$\lambda$	$\text{h}$	$\text{ɔ}$	$\text{Hw}$	$\lambda$	$\text{**i, I}$	$\text{o}$	$\text{**u, U}$
$\text{f}$	$\text{h}^{***}, \text{H}$	$\text{ɣ}$	$\text{x, cs, ks}$	$\hat{\lambda}$	$\text{ai}$	$\hat{\lambda}$	$\text{oi}$
$\hat{\lambda}$	$\text{ui}$	$\hat{\text{o}}$	$\text{au}$	$\hat{\text{o}}$	$\text{eu}$	$\hat{\text{o}}$	$\text{iu}$
$\hat{\text{i}}$	$\text{a}$	$\hat{\text{i}}$	$\text{e}$	$\text{i}$	$\text{i}$	$\hat{\text{i}}$	$\text{o}$
$\hat{\text{i}}$	$\text{u}$	$\text{ɔ}$	$\text{y}$				

The letters shown in black are used in [Namárië]; the letters shown in blue are not used in [Namárië], but are described explicitly in [Appendix E]; the letters shown in green are probably not used in this mode; the letters and combinations shown in red are deduced or have values which changed from Age to Age.

$\text{h}$  produces  $\lambda$  normally,  $\text{f}$  before  $\text{r/l}$ , and  $\text{ɔ}$  before  $\text{t}$ .

## Changes for the general mode

$\text{ɸ}$	$\text{d}$	$\text{ɸ}$	$\text{b}$	$\text{cɣ}$	$\text{g}$	$\text{ɥ}$	$\text{gw}$
$\text{h}$	$\text{dh}$	$\text{h}$	$\text{v}$	$\text{ɔd}$	$\text{gh}$	$\text{ɔd}$	$\text{ghw}$
$\text{ɔa}$	$\text{*ng, ng}^*$	$\text{ɳ}$	$\text{V}$	$\text{ɔ}$	$\text{I, **i}$	$\lambda$	$\text{E, **e}$
$\hat{\text{a}}$	$\text{ai}$	$\hat{\text{a}}$	$\text{oi}$	$\hat{\text{a}}$	$\text{ui}$	$\hat{\text{o}}$	$\text{au}$
$\hat{\text{o}}$	$\text{eu}$	$\hat{\text{o}}$	$\text{iu}$	$\hat{\lambda}$	$\text{ae}$	$\hat{\lambda}$	$\text{oe}$



TABLE 7. Sarati Quenya

o	0	o	1	o	2	o	3	o	4
o	5	o	6	o	7	o	8	o	9
o	<	o	>				.		:
o	p	o	t	o	ty	o	c, k	o	q, cw, kw
o	b, mb	o	d, nd	o	dy, ndy	o	g, ng	o	gw, ngw
o	f, ph	o	s	o	hy	o	h	o	hw
o	v	o	r	o	y, **i	o	l	o	w, **u
o	m	o	n	o	ny	o	*ng, N	o	*nw, Nw
o	mp	o	nt	o	nty	o	nk, nc	o	nq
o	ts	o	st	o	sty	o	x, cs, ks	o	ss
	ht	o	ht	o	hty				
o	a	o	e	o	i	o	o	o	u
o	aa	o	ee	o	ii	o	oo	o	uu
o	ly	o	ry	o	mf, mph	o	ps	o	sk
o	th, S	o	ch, kh	o	chw, khw	o	z	o	dh

Symbols in red are taken from the phonemic valuation; otherwise this valuation is based on [Sarati].

TABLE 8. Valmaric Quenya

b	p	o	t	o	c, k	o	ty	o	q
d	f	o	s, S, th	o	h, H			o	hw
o	v	o	r, R			o	y, **i	o	w, **u
o	mp	o	nt	o	nc, nk	o	nty	o	nq
o	b, mb	o	d, nd	o	g, ng			o	gw, ngw
o	m	o	n, N			o	ny	o	*nw, Nw
o	mn	o	l	o	rd	o	z, ss	o	ld
o	rm	o	lt	o	ht	o	ry	o	lq
o	a	o	e	o	i	o	o	o	u
o	aa	o	ee	o	ii	o	oo	o	uu
.	.	-	-	-	--				

This valuation is based entirely on [Valmaric].

TABLE 9. Mode of Beleriand

p	t	p	p	cj	c, k, C	q	q, qu
p̄	d, D	p̄	b	cj	g, G	q̄	gw, Gw
b	th	b	f, ph, F	cl	ch, kh, Ch	d	chw, khw, Chw
b̄	dh	b̄	v, f*	cd	gh	d̄	ghw
m̄	nn, N	m̄	mm, M	ca	ng*	u	\~n (ñ)
n	n	n	m	o		u	w
r	r, R	r̄	*rh	l	l	l̄	*lh, L
s	s	y	y	ss, z	ss, z	z	Z
h	h	hw	hw	e	e	o	u
a	a	i	i	I	I	mh	mh
dw, Dw	dw, Dw						
ai	ai	ei	ei	ui	ui	au, aw*	au, aw*

The letters shown in black are used in [Elbereth] or [Durin]; the letters shown in green are probably not used in this mode; the letters and combinations shown in red are deduced based on [Appendix E], analogy with Quenya, or analogy with the mode of Gondor or English full modes.

TABLE 10. Third Age Sindarin modes

ƿ	t	ƿ	p	ɥ	tj	ɥ	c, k, C
ƿᵛ	d, D	ƿᵛ	b	ɥɥ	j	ɥɥ	g, G
ḃ	th	ḃ	ph, f, F	ɔ	sh	ɔ	ch, kh
Ḅ	dh	Ḅ	v, f*	ɔɔ	zh, ssh	ɔɔ	gh
ᵛ	n	ᵛ	m	ɔ̃	\~n (ñ)	ɔ̃	ng*
		ᵛ	w			ɔ̃	W
ᶜ	s	ʃ	*rh	ᶜ	l	ᶜ	*lh, L
λ	h	ɔ	hw	ᶜ	z, ss		
ᵛḡ	mh	ᵛḡ	dw, Dw	ᵛḡ	gw, Gw	ᵛḡ	chw, Chw

## Mode of Arnor

ᵛ	r	ʃ	y	ɔ	o	ʃ	Z
ɥ	R			λ	e	o	u
c	a	ɥ	i	č	ae	č	ai
ç	a*	ɥ	I, *i**	č̃	oe	č̃	ei
				č̃	au, aw*	č̃	ui

## Mode of Gondor

ᵛ	R, r*	ʃ	S, **s	ɔ	I, **i	ʃ	Z, **ss
ɥ	r			λ	E, **e, *i**	o	U, **u
í	a	í	o	č̃	ae	č̃	ai
í	e	í	u	č̃	oe	č̃	ei
i	i	í	y	č̃	au, aw*	č̃	ui

The characters which are shown in black occur in [Letter]; the letters shown in green are probably not used in this mode; the letters or combinations shown in red have their values deduced from [Appendix E], [LOTR], similar letters or combinations, or other modes.

TABLE 11. English orthographic modes

ƚ	t, T	Ɔ	p	ɥ	ch	ɥ	k, c
ƚ	d, D	Ɔ	b, B	ɥ	j	ɥ	g, G
ƚ	th, Th	Ɔ	f	ɥ	sh	ɥ	Ch, Kh
ƚ	tH, dh	Ɔ	v	ɥ	zh	ɥ	gh
ƚ	n	Ɔ	m	ɥ	\~n (ñ)	ɥ	ng
ƚ	r						
ƚ	r*, R	Ɔ	Rh	Ɔ	l	Ɔ	ll, L
ƚ	s, S	Ɔ	C	Ɔ	z	Ɔ	Z, *z
ƚ	h						
ƚ	tW, TW	Ɔ	dW, DW	Ɔ	bU, BU	Ɔ	sW, SW
ƚ	q, qu	Ɔ	thW, ThW	Ɔ	chW	Ɔ	ChW
ƚ	Ng	Ɔ	ngU, ngW	Ɔ	gU, gW	Ɔ	NgU, NgW
ƚ	CH, KH, cH, kH	Ɔ	ph	Ɔ	x		

Aragorn's mode (\orthmode)

	ƚ	u	ɥ	o	ɥ	a	
	ɥ	wh, Wh	ɥ	e	o	w	
ɥ	@	ɥ	i	ɥ	y	ɥ	H
ɥ	ai, ay	ɥ	ei, ey	ɥ	oi, oy	ɥ	uI, uy
ɥ	au, aW	ɥ	eu, eW	ɥ	ou, ow		
ɥ	ae			ɥ	oe	ɥ	ue
ɥ	aa	ɥ	ee	ɥ	oo	ɥ	uu

Mode of Mazarbul: changes from \orthmode

ƚ	w, W	Ɔ	wh, Wh	ɥ	wH, WH
---	------	---	--------	---	--------

The symbols shown in black are used in [Letter]; the symbols shown in green are probably not used in this mode; the symbols shown in blue are attested in [Brogan]; the symbols shown in purple are borrowed from the phonemic mode ([Leithien] or [Bombadil]). In all cases, you can use G instead of g.

English orthographic tehta mode

	ƚ	w	ɥ	Y, I	ɥ	U			
	ɥ	wh, Wh	ɥ	E	o	U			
ɥ	a	ɥ	A	ɥ	ae	ɥ	au	ɥ	ai, ay
ɥ	e	ɥ	ee	ɥ	ea	ɥ	eu	ɥ	ei, ey
ɥ	i	ɥ	ii	ɥ	ie	ɥ	ou	ɥ	iy
ɥ	o	ɥ	oo	ɥ	oe	ɥ	ou	ɥ	oi, oy
ɥ	u	ɥ	uu	ɥ	ue	ɥ	ou	ɥ	uy
ɥ	y			ɥ	ye				

There aren't really enough examples to make it worth listing everything that's attested and everything that's not. The o is debatable, and the ɥ is *spectacularly* wild guesswork.

TABLE 12. Cirth

	Daeron	Eregion	Moria	Erebor		Daeron	Eregion	Moria	Erebor
ᠮ	p	p	p	p	ᠮ	l	l	l	l
ᠮ	b	b	b	b	ᠮ	lh	hl	lh	
ᠮ	f	f	f	f	ᠮ	ng	ng	nd	nd
ᠮ	v	v	v	v	ᠮ	s	s	s	s
ᠮ	hw	hw	hw	hw	ᠮ	S	S	S	S
ᠮ	m	m	m	m	ᠮ	ss	ss	Ng	ng
ᠮ	mh	mb	mb	mb	ᠮ	-	-	ng	Ng
ᠮ	t	t	t	t	ᠮ	nd	nd	nj	oU
ᠮ	d	d	d	d	ᠮ	nD	Nd	Nj	ou
ᠮ	th	th	th	th	ᠮ	i	i	i	i
ᠮ	dh	dh	dh	dh, tH	ᠮ	-	-	y	y
ᠮ	n	n	r	r	ᠮ	-	-	hy	hy
ᠮ	-	-	ch	ch	ᠮ	u	u	u	u
ᠮ	j	j		j	ᠮ	uu	uu	uu	z
ᠮ	sh	sh	sh	sh	ᠮ	w	w	w	w
ᠮ	zh	zh		zh	ᠮ	ü	ü	ü	ü
ᠮ	nj	nj	z	x	ᠮ	e	e	e	e
ᠮ	k	k	k	c, k	ᠮ	ee	ee	ee	ee
ᠮ	g	g	g	G	ᠮ	a	a	a	a
ᠮ	ch, kh	ch, kh	kh	Ch, Kh	ᠮ	aa	aa	aa	aa
ᠮ	gh	gh	gh	gh	ᠮ	o	o	o	o
ᠮ	ng*	*ng, N	n	n	ᠮ	oo	oo	oo	oo
ᠮ	q	q	q	q	ᠮ	ö	ö	ö	ö
ᠮ	gw	gw	gw	gw	ᠮ	-	-	N	N
ᠮ	khw	khw	khw	Khw	ᠮ	h	h	h	h
ᠮ	ghw	ghw	ghw	ghw	ᠮ	-	-	E	E
ᠮ	ngw	ngw	ngw	Ngw	ᠮ	-	-	U	U
ᠮ		*nw	nw	nw	ᠮ	H	H	H	H
ᠮ	r	r	j	g	ᠮ	&	&	&	&
ᠮ	rh	hr	zh	Gh					

Mode of Erebor only							
ᠮ	ps	ᠮ	au	ᠮ	ea	ᠮ	eu
ᠮ	ts	ᠮ	ai	ᠮ	oa	ᠮ	ll

You may substitute \`a or ^a for aa in all modes.

TABLE 13. Hobbit runes

ƒ	a	Γ	l	Ɔ	w
ƒ	b	⌘	m	Ψ	x
λ	c	†	n	⌘	y
⌘	d	ƒ	o	λ	z
M	e	ƒ	p	Ɔ	th
Ɔ	f	λƆ	q	⌘	ng
X	g	⌘	r	Ɔ	oo
⌘	h	λ	s	Ψ	ea
l	i	↑	t	⌘	ee
l	j	λ	u	⋮	.
h	k	λ	v	⋮	,

Most of the letters in this mode are from [Thror], except for Ψ, λ, Ψ, l for j, λƆ for q, which are from [Foreword], and Ɔ, which is from [Farrer].

Uppercase letters may be used instead of lowercase letters; they are identical except that NG/Ng produces †X.

Note that fonts designed for *Cirth* do not always contain all the glyphs one might like in a *runic* font. Cirth Erebor does far better than most Cirth fonts, but even it does not have [Thror]'s ƒ p (ƒ is taken from [Foreword]), [Jacket]'s Z eo, [Farrer]'s ƒ oa, or [Foreword]'s ⌘ st.

(Note that [Thror] does not use ⌘. If I ever find a runic font that does have it, it will be accessible with sT/ST and not st/St.)

## APPENDIX E. FILES IN THIS PACKAGE

This is a list of all files that are considered part of the `tolkienfonts` package. They should be organized as follows:

- `tolkienfontsdoc.pdf`
- `tolkienfontsdoc.tex`
- `example.tex`
- `README`

`tolkieninst/`

- `tolkieninst.tex`
- `effectColor.mtx`
- `effectPunctspace.mtx`
- `effectUnderdots.mtx`
- `scriptcirth.mtx`
- `scriptsarati.mtx`
- `scripttengwar.mtx`
- `scriptvalmaric.mtx`
- `fontAnnatar.mtx`
- `fontAnnatarb.mtx`
- `fontAnnatarbi.mtx`
- `fontAnnatari.mtx`
- `fontEldamar.mtx`
- `fontErebor.mtx`
- `fontNoldor.mtx`
- `fontParmaite.mtx`
- `fontQuenya.mtx`
- `fontSaratiE.mtx`
- `fontSaratiEBar.mtx`
- `fontSindarin.mtx`
- `fontValmaricE.mtx`
- `modeArnor.etx`
- `modeBeleriand.etx`
- `modeCirthDaeron.etx`
- `modeCirthErebor.etx`
- `modeCirthEregion.etx`
- `modeCirthMoria.etx`
- `modeEaragorn.etx`
- `modeEmazarbul.etx`
- `modeEphonemic.etx`
- `modeEtehta.etx`
- `modeGondor.etx`
- `modeQuenya.etx`
- `modeQuenyaGeneral.etx`
- `modeRuneHobbit.etx`
- `modeSaratiQuenya.etx`
- `modeValmaricQenya.etx`

`tex/latex/`

- `tolkienfonts.sty`

- boustr.sty

tex/latex/fd/rune/

- t1runeedm.fd
- t1runeeee.fd
- t1runeeeh.fd
- t1runeeqe.fd
- t1runeesd.fd

tex/latex/fd/tengwar/

- t1tengwara.fd
- t1tengwaraa.fd
- t1tengwaraem.fd
- t1tengwaraeo.fd
- t1tengwaraep.fd
- t1tengwaraet.fd
- t1tengwaraqa.fd
- t1tengwaraqg.fd
- t1tengwaraqq.fd
- t1tengwaraqr.fd
- t1tengwarasa.fd
- t1tengwarasb.fd
- t1tengwarasg.fd

tex/latex/fd/valmar/

- t1saratib.fd
- t1saratibqa.fd
- t1saratibqq.fd
- t1saratie.fd
- t1saratieqa.fd
- t1saratieqq.fd
- t1valmaric.fd
- t1valmariceqa.fd
- t1valmariceqq.fd
- fonts/map
- 
- tolkien.map

fonts/tfm/raw/

- RuneE.tfm
- SaratiB.tfm
- SaratiE.tfm
- TengwarA.tfm
- TengwarAA.tfm
- TengwarAAb.tfm
- TengwarAAbi.tfm
- TengwarAAi.tfm
- TengwarAb.tfm
- TengwarAbi.tfm
- TengwarAi.tfm
- TengwarE.tfm



- TengwarEA.tfm
- TengwarN.tfm
- TengwarNA.tfm
- TengwarP.tfm
- TengwarPA.tfm
- TengwarQ.tfm
- TengwarQA.tfm
- TengwarS.tfm
- TengwarSA.tfm
- Valmaric.tfm

fonts/tfm/rune/

- RuneEDM.tfm
- RuneEEE.tfm
- RuneEEH.tfm
- RuneEQE.tfm
- RuneESD.tfm

fonts/tfm/tengwar/

- TengwarAEM.tfm
- TengwarAEO.tfm
- TengwarAEP.tfm
- TengwarAET.tfm
- TengwarAQA.tfm
- TengwarAQG.tfm
- TengwarAQQ.tfm
- TengwarAQR.tfm
- TengwarASA.tfm
- TengwarASB.tfm
- TengwarASG.tfm

fonts/tfm/valmar/

- SaratiBQA.tfm
- SaratiBQQ.tfm
- SaratiEQA.tfm
- SaratiEQQ.tfm
- ValmaricEQA.tfm
- ValmaricEQQ.tfm

fonts/vf/rune/

- RuneEDM.vf
- RuneEEE.vf
- RuneEEH.vf
- RuneEQE.vf
- RuneESD.vf

fonts/vf/tengwar/

- TengwarAEM.vf
- TengwarAEO.vf
- TengwarAEP.vf
- TengwarAET.vf
- TengwarAQA.vf

- TengwarAQQ.vf
- TengwarAQQ.vf
- TengwarAQR.vf
- TengwarASA.vf
- TengwarASB.vf
- TengwarASG.vf

fonts/vf/valmar/

- SaratiBQA.vf
- SaratiBQQ.vf
- SaratiEQA.vf
- SaratiEQQ.vf
- ValmaricEQA.vf
- ValmaricEQQ.vf

## REFERENCES

- [Endorion] A dedication to Michael Endorion, which reads  
 ከፊ ጠድፊጊ ስጦታ ከ ጠቅጋሮብ፡  
 ፣ጊጠ ሆጊ ጊጠጠ ፣ጠክፊጊጠ፡  
 ማ ጊ ጊ ጊ
- This is mentioned on the `elfscript` message boards, at  
<http://movies.groups.yahoo.com/group/elfscript/message/2424>  
<http://movies.groups.yahoo.com/group/elfscript/message/2498>  
 A photo is at <http://movies.groups.yahoo.com/group/elfscript/files/>  
 English tehta mode and Quenya mode.
- [LOTR] The inscription on the title page of *The Lord of the Rings*. English tehta mode.
- [TTT] The inscription on the cover of some editions of *The Two Towers*, also published in *J.R.R. Tolkien: Artist and Illustrator*. English tehta mode.
- [Brogan] Letter to Hugh Brogan, *The Letters of J.R.R. Tolkien* **118**, containing about two sentences apiece written in English tehta mode, full English orthographic mode, and Dwarvish runes (mode of Erebor).
- [Letter] Aragorn’s letter to Samwise Gamgee in the rejected epilogue to *The Lord of the Rings*. There are three drafts; the first and third are in *Sauron Defeated*, Illustration 1, and the second draft is in *Artist and Illustrator* **199**. Sindarin mode of Gondor or Arnor (depending on the draft) and full English orthographic mode.
- [Mazarbul] The Book of Mazarbul, published in *Pictures by J.R.R. Tolkien*. Tengwar full English orthographic mode (subtly different from that in [Letter]) and the cirth mode of Erebor.
- [Leithien] The tengwar passage beginning ሆጊ ጊጠክፊጊጠ፡, published in *The Lays of Beleriand*. English phonemic mode.
- [Thorin] A transcription of Thorin’s letter to Bilbo in *The Hobbit*, published as the frontispiece of *The History of The Hobbit, Vol. II: Return to Bag-End*, by John D. Rateliff. English phonemic mode (different from that of [Bombadil], [Errantry] and [Leithien]).
- [Bombadil] Two drafts of the beginning of the poem “The adventures of Tom Bombadil”, published in *Pictures by J.R.R. Tolkien*. English phonemic mode.
- [Errantry] The beginning of the poem “Errantry”, published in *Pictures by J.R.R. Tolkien*. English phonemic mode.
- [Namárië] Transcription of Galadriel’s “Namárië” lament in Lórien, *The Road Goes Ever On*. Quenya mode.
- [Elbereth] Transcription of the elvish hymn to Elbereth Gilthoniel, *The Road Goes Ever On*. Mode of Beleriand.
- [Durin] The illustration of the Doors of Durin, in *The Lord of the Rings*, Chapter II.4. Mode of Beleriand.

- [Balin] Balin’s tomb inscription from *The Lord of the Rings*, II.4. The text is in both Dwarvish and English; the Dwarvish text (*Balin Fundinul uzbek Khazad-dûmu*) is definitely in the mode of Moria, but the English text (*Balin son of Fundin lord of Moria*) could be either the mode of Moria or the mode of Erebor.
- [Thror] Thror’s map, published in *The Hobbit*. Anglo-Saxon runes.
- [Jacket] The dust jacket to the original edition of *The Hobbit*, also *Artist and Illustrator* 144. Anglo-Saxon runes.
- [Farrer] Letter to Katherine Farrer, *The Letters of J.R.R. Tolkien* 112, containing a few paragraphs written with Anglo-Saxon runes.
- [Appendix E] “Writing and Spelling”, Appendix E to *The Lord of the Rings*.
- [Foreword] Foreword entitled  $\text{ÐM NFFËIT FR ÐMRM FÐW FFKK FXFH}$ , present in most newer hardcover editions of *The Hobbit*.
- [Shibboleth] “The Shibboleth of Fëanor”, published in *The Peoples of Middle-Earth*.
- [Quenyanna] Helge Kåre Fauskanger, *Quettaparma Quenyanna* (the *Ardalambion* Quenya wordlist),  
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- [Sarati] Måns Björkman, *The Sarati—Quenya Usage*,  
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- [Valmaric] Måns Björkman, *Valmaric Eldamar version 1.0*,  
<http://at.mansbjorkman.net/valmariceldamar.htm>
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<http://www.tug.org/applications/fontinst/>