

# The xltextra package

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## Contents

I	Introduction	I	6	Programmming bits and pieces	6
I	The xltextra package	I	7	\-	6
2	Logos	2	8	\textsuperscript and \textsubscript	7
3	$\varepsilon$ -TeX functionality	5	9	\vfrac	9
4	Unicode footnote symbols	5	10	Named glyphs	10
5	\eminnershape	5			

## I Introduction

This document describes the xltextra package. It implements in general improved functionality for broken or sub-standard L<sup>A</sup>T<sub>E</sub>X methods when using the X<sub>Y</sub>L<sup>A</sup>T<sub>E</sub>X format.

Documentation is slim, and a bit ugly at this stage. I intend to improve it at some stage...Anyway, look through the sections to see what's contained within.

## File I

# The xltextra package

This is the package.

```
1 \ProvidesPackage{xltextra}
2 [2006/06/13 v0.2 Improvements for the XeTeX/LaTeX format]
```

### Required packages

```
3 \RequirePackage{ifxetex}
4 \RequireXeTeX
5 \RequirePackage{graphicx}
6 \RequirePackage{fontspec}
7 \RequirePackage{xunicode}
```

## 2 Logos

\XeTeX The T<sub>E</sub>X-related logos people insist upon using need to be tuned on a  
\XeLaTeX per-font basis. This package will eventually allow this, but for now, it's  
baby steps. The X<sub>E</sub>T<sub>E</sub>X and X<sub>E</sub>L<sub>A</sub>T<sub>E</sub>X logos are provided.

The various T<sub>E</sub>X-like logos that extend outside the regular vertical alphabetic bounds of running text have the unfortunate side-effects in X<sub>E</sub>T<sub>E</sub>X of often overrunning the `\baselineskip`. Putting the logos in zero-height boxes prevents this problem. Actually, this problem doesn't happen anymore.

Here're some examples. The default:

---

T<sub>E</sub>X X<sub>E</sub>T<sub>E</sub>X L<sub>A</sub>T<sub>E</sub>X X<sub>E</sub>L<sub>A</sub>T<sub>E</sub>X      \TeX\ \XeTeX\ \LaTeX\ \XeLaTeX

---

Notice it's a bit tight when not using Computer Modern, as here:

---

T<sub>E</sub>X X<sub>E</sub>T<sub>E</sub>X L<sub>A</sub>T<sub>E</sub>X X<sub>E</sub>L<sub>A</sub>T<sub>E</sub>X      \usefont{OT1}{cmr}{m}{n}  
\TeX\ \XeTeX\ \LaTeX\ \XeLaTeX

---

This package provides *anon-stable* method of specifying the spacings in these logos. In the future, it will hopefully adjust somewhat automatically. To do:

- adapt `\LaTeX` to use small caps if available...
- ...otherwise, need a scaling factor, and maybe a vertical nudge factor
- add other logos
- per-font parameters, with some defaults for common fonts
- add ‘low contrast’ small caps versions, et al.
- probably break out the whole thing into its own package, if it works

`\TeX@logo@spacing` #1: Kern between T & eX  
 #2: Kern between Te & X  
 #3: Lowering amount for E in TeX  
 #4: Kerning between L & aTeX  
 #5: Kerning between La & TeX  
 #6: Kerning between Xe & LaTeX

This macro defines new `\TeX` and `\XeTeX` logos. Parameters must be tuned on a per-font basis:

---

`\TeX@logo@spacing{-0.12em}{-0.12em}%`  
`\TeX XeTeX LaTeX XeLaTeX` `{0.5ex}{-0.3em}{-0.12em}{-0.1em}`  
`\TeX\ \XeTeX\ \LaTeX\ \XeLaTeX`

---

*Warning!* This macro will **definitely** change in the future. If you care about backwards compatibility in your documents, copy+paste the definitions below rather than using `\TeX@logo@spacing`.

```

8 \newlength\xxt@kern@Te
9 \newlength\xxt@kern@eX
10 \newlength\xxt@lower@e
11 \newlength\xxt@kern@La
12 \newlength\xxt@kern@aT
13 \newlength\xxt@kern@eL
14 \newcommand*\TeX@logo@spacing[6]{%
15   \setlength\xxt@kern@Te{#1}%
16   \setlength\xxt@kern@eX{#2}%
17   \setlength\xxt@lower@e{#3}%
18   \setlength\xxt@kern@La{#4}%
19   \setlength\xxt@kern@aT{#5}%
20   \setlength\xxt@kern@eL{#6}%
21 }
22 \DeclareRobustCommand\TeX{%
23   \leavevmode
24   \smash{%

```

```

25   T\kern\xxt@kern@Te
26   \lower\xxt@lower@e\hbox{E}\kern\xxt@kern@eX X}%
27   \spacefactor1000\relax}
28 \DeclareRobustCommand{\LaTeX}{%
29   \leavevmode
30   \smash{%
31     L\kern\xxt@kern@La
32     {\sbox\z@ T%
33       \vbox to\ht\z@{\hbox{\check@mathfonts
34         \fontsize\sf@size\z@
35         \math@fontsfalse\selectfont
36         A}%
37       \vss}%
38     }%
39     \kern\xxt@kern@aT
40   \TeX}}
41 \DeclareRobustCommand\XeTeX{%
42   \leavevmode
43   \smash{%
44     X\lower\xxt@lower@e
45     \hbox{\kern\xxt@kern@eX
46       \ifnum\XeTeXfonttype\font>0
47         \ifnum\XeTeXcharglyph"018E>0
48           \char"018E\relax
49         \else
50           \ifdim\fontdimen1\font=0pt
51             \reflectbox{E}%
52           \else
53             \XeTeXuseglyphmetrics=1%
54             \setbox0=\hbox{E}\dimen0=\ht0\advance\dimen0by\dp0%
55             \raise\dimen0\hbox{\rotatebox{180}{\box0}}}%
56           \fi
57         \fi
58       \else
59         \setbox0=\hbox{E}\dimen0=\ht0\advance\dimen0by\dp0%
60         \raise\dimen0\hbox{\rotatebox{180}{\box0}}}%
61       \fi
62     }\kern\xxt@kern@Te\TeX}}%
63 \DeclareRobustCommand\XeLaTeX{%
64   \leavevmode
65   \smash{%

```

```

66 X\lower\xxt@lower@e
67 \hbox{\kern\xxt@kern@eX
68   \ifnum\XeTeXfonttype\font>0\relax
69     \ifnum\XeTeXcharglyph"018E>0\relax
70       \char"018E\relax
71     \else
72       \ifdim\fontdimen1\font=0pt\relax
73         \reflectbox{E}%
74       \else
75         \XeTeXuseglyphmetrics=1\relax
76         \setbox0=\hbox{E}\dimen0=\ht0\advance\dimen0by\dp0\relax
77         \raise\dimen0\hbox{\rotatebox{180}{\box0}}%
78       \fi
79     \fi
80   \else
81     \setbox0=\hbox{E}\dimen0=\ht0\advance\dimen0by\dp0\relax
82     \raise\dimen0\hbox{\rotatebox{180}{\box0}}%
83   \fi}\kern\xxt@kern@eL\LaTeX}}
84 \TeX@logo@spacing{-0.15em}{-0.15em}{0.5ex}{-0.36em}{-0.15em}{-0.1em}

```

### 3 $\epsilon$ -TeX functionality

Because it’s just sensible, we load the package that actually allows  $\LaTeX$  to access the extra registers, etc., provided by  $\epsilon$ -TeX.

```
85 \RequirePackage{etex}
```

### 4 Unicode footnote symbols

$\LaTeX$  defines footnote symbols with LICRs that don’t resolve well with the xunicode package; better results can be achieved by using specific unicode characters.

This problem is solved by the `fixltx2e` package.

```
86 \RequirePackage{fixltx2e}[2006/03/24]
```

### 5 `\em` and `\emph`

`\em` `fixltx2e`’s method for checking for “inner” emphasis is a little fragile in  $\XeTeX$ , because font slant information might be missing from the font.

Therefore, we use L<sup>A</sup>T<sub>E</sub>X's NFSS information, which is more likely to be correct.

---

Nested <i>emphasis is now</i> <i>fixed.</i>	<pre> \renewcommand\eminnershape{\scshape} \fontspec{Didot} Nested {\em emphasis is \emph{now} fixed.} </pre>
--	---

---

```

87 \DeclareRobustCommand\em
88   {\@nomath\em
89     \edef\@tempa{\f@shape}%
90     \edef\@tempb{\itdefault}%
91     \ifx\@tempa\@tempb
92       \eminnershape
93     \else
94       \emshape
95     \fi}
96 \DeclareTextFontCommand{\emph}{\em}
97 \let\emshape\itshape
98 \let\eminnershape\upshape

```

## 6 Programmming bits and pieces

Thanks to a long-ago c.t.t. post by Robin Fairbairns for the code how to \let a robust macro.

```

99 \newcommand*\robust@let@nc[2]{%
100   \expandafter\let\expandafter#1\csname #2 \endcsname}

```

## 7 \-

L<sup>A</sup>T<sub>E</sub>X defines the macro \- to insert discretionary hyphenation points. However, it is hard-coded to use the hyphen - character. Since fontspec makes it easy to change the hyphenation character on a per font basis, it would be nice if \- adjusted automatically.

\- This macro is courtesy of Frank Mittelbach and the L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> source code.

```

101 %\CheckCommand\-\{\discretionary{-}{ }{ }}
102 \DeclareRobustCommand{\-}{%
103   \discretionary{%

```

```

104 \char\ifnum\hyphenchar\font<\z@
105 \xlx@defaultthyphenchar
106 \else
107 \hyphenchar\font
108 \fi}{}{}
109 \def\xlx@defaultthyphenchar{\-\}

```

## 8 \textsuperscript and \textsubscript

The new macros now allow real text inferiors and superiors:

```

\textsuperscript abcdefghijklmnopqrstuvwxyz1234567890
\textsubscript abcdefghijklmnopqrstuvwxyz1234567890

```

As opposed to fake ones:

```

\textsuperscript* abcdefghijklmnopqrstuvwxyz1234567890
\textsubscript* abcdefghijklmnopqrstuvwxyz1234567890

```

Or:

```

\faketextsuperscript abcdefghijklmnopqrstuvwxyz1234567890
\faketextsubscript abcdefghijklmnopqrstuvwxyz1234567890

```

But beware fonts lacking the full repertoire: (this is Adobe Jenson Pro)

```

\textsuperscript abcdefghijklmnopqrstuvwxyz1234567890
\textsubscript abcdefghijklmnopqrstu.
VWXYZ1234567890

```

For OpenType fonts, the subscript feature (`subs`) is used, but if that doesn't exist then the scientific inferior feature (`sinf`) is used on the assumption that something's better than nothing. This assumption may prove to be a poor one, and the functionality of the package may change in the future.

```

\faketextsubscript The old ('fake') methods:
\faketextsuperscript
110 \robust@let@nc\faketextsubscript{textsubscript}
111 \robust@let@nc\faketextsuperscript{textsuperscript}

```

`\textsubscript`    **Text subscripts:**

```
\textsubscript* 112 \DeclareRobustCommand*\textsubscript{%
113   \@ifstar{\faketextsubscript}{\@@textsubscript}}
114 \newcommand\@@textsubscript[1]{%
115   \begingroup
116     \c@zf@script 1818326126\relax
117   \font\zf@basefont="\csname zf@family@fontdef\f@family\endcsname" at \f@size pt
118   \zf@set@font@type
119   \ifzf@atsui
120     \zf@make@aat@feature@string{10}{2}%
121     \unless\ifx\zf@thisfontfeature\@empty
122       {\addfontfeature{VerticalPosition=Inferior}#1}%
123     \else
124       \faketextsubscript{#1}%
125     \fi
126   \fi
127   \ifzf@icu
128     \zf@check@ot@feat{+subs}%
129     \if@tempswa
130       {\addfontfeature{VerticalPosition=Inferior}#1}%
131     \else
132       \zf@check@ot@feat{+sinf}%
133       \if@tempswa
134         {\addfontfeature{VerticalPosition=ScientificInferior}#1}%
135       \else
136         \faketextsubscript{#1}%
137       \fi
138     \fi
139   \fi
140 \endgroup}
```

`\textsuperscript`    **Text superscripts:**

```
\textsuperscript* 141 \DeclareRobustCommand*\textsuperscript{%
142   \@ifstar{\faketextsuperscript}{\@@textsuperscript}}
143 \newcommand\@@textsuperscript[1]{%
144   \begingroup
145     \c@zf@script 1818326126\relax
146   \font\zf@basefont="\csname zf@family@fontdef\f@family\endcsname" at \f@size pt
147   \zf@set@font@type
148   \ifzf@atsui
149     \zf@make@aat@feature@string{10}{1}%

```



```

150      \unless\ifx\zf@thisfontfeature\@empty
151        {\addfontfeature{VerticalPosition=Superior}#1}%
152      \else
153        \faketextsuperscript{#1}%
154      \fi
155    \fi
156    \ifzf@icu
157      \zf@check@ot@feat{+sups}%
158      \if@tempswa
159        {\addfontfeature{VerticalPosition=Superior}#1}%
160      \else
161        \faketextsuperscript{#1}%
162      \fi
163    \fi
164  \endgroup}

```

## 9 \vfrac

A command for setting vulgar fractions based on AAT or OpenType font features. Not really recommended for many purposes, depending on your text, but it's a good example.

---

AAT:  $\frac{123}{456}$   
 ICU:  $\frac{123}{456}$

```

\fontspec{Hoefler Text}
AAT: \vfrac{123}{456}\par
\fontspec{Warnock Pro}
ICU: \vfrac{123}{456}

```

---

`\vfrac` #1: Numerator  
 #2: Denominator

No error checking is done to ensure that the font actually has the necessary features. Requires the xunicode package for `\textfraction-solidus`.

```

165 \newcommand*\vfrac[2]{%
166   \begingroup
167     \c@zf@script 1818326126\relax
168   \font\zf@basefont="\csname zf@family@fontdef\@family\endcsname" at \f@size pt
169   \zf@set@font@type
170   \ifzf@atsui
171     {\addfontfeature{VerticalPosition=Superior}#1}%

```

```

172      \textfractionsolidus
173      {\addfontfeature{VerticalPosition=Inferior}#2}%
174  \fi
175  \ifzf@icu
176      {\addfontfeature{VerticalPosition=Numerator}#1}%
177      \textfractionsolidus
178      {\addfontfeature{VerticalPosition=Denominator}#2}%
179  \fi
180  \endgroup}

```

## 10 Named glyphs

Along the way somewhere, Xe<sub>La</sub>TeX added support for selecting glyphs from a TrueType-based OpenType font based on their internal glyph name. Jonathan Kew posted the following definition as a nice interface to it.

---

¥ [smile]

```

\fontspec{Charis SIL}
\namedglyph{yen}
\namedglyph{smile}

```

---

`\namedglyph` #1: Name of the font glyph to be typeset

```

181 \newcommand\namedglyph[1]{%
182   \@tempcnta=\XeTeXglyphindex "#1"\relax
183   \ifnum\@tempcnta>0
184     \XeTeXglyph\@tempcnta
185   \else
186     \xxt@namedglyph@fallback{#1}%
187   \fi}

```

`\xxt@namedglyph@fallback` Redefine this macro to change how glyph names that aren't found get typeset.

```

188 \newcommand\xxt@namedglyph@fallback[1]{[#1]}

```

# Change History

## VO.1

<code>\-</code> : Implemented; from the $\text{\LaTeX}$ 2 $\epsilon$ sources.	7
<code>\faketextsubscript</code> : Implemented.	7
<code>\faketextsuperscript</code> : Implemented.	7
<code>\TeX@logo@spacing</code> : Implemented.	5
<code>\textsubscript</code> : Implemented.	8
<code>\textsubscript*</code> : Implemented.	8
<code>\textsuperscript</code> : Implemented.	9
<code>\textsuperscript*</code> : Implemented.	9
<code>\vfrac</code> : Implemented.	10

## VO.2

<code>\emph</code> : Migrated from fontspec.	6
<code>\namedglyph</code> : Implemented.	10
<code>\TeX@logo@spacing</code> : <code>\TeX@logo@spacing</code> made “private” and added an arg for $\text{\XeLaTeX}$ .	5
Added TFM font check.	5
<code>\xxt@namedglyph@fallback</code> : Implemented.	10

# Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in *roman* refer to the code lines where the entry is used.

Symbols	E
\- ..... <u>101</u>	\edef ..... 89, 90
\@@textsubscript ..... 113, 114	\else .... 49, 52, 58, 71, 74, 80, 93, 106, 123, 131, 135, 152, 160, 185
\@@textsuperscript ..... 142, 143	\em ..... <u>87</u>
\@empty ..... 121, 150	\eminnershape ..... 92, 98
\@ifstar ..... 113, 142	\emph ..... <u>87</u>
\@nomath ..... 88	\emshape ..... 94, 97
\@tempa ..... 89, 91	\endcsname ..... 100, 117, 146, 168
\@tempb ..... 90, 91	\endgroup ..... 140, 164, 180
\@tempcnta ..... 182–184	\expandafter ..... 100
A	F
\addfontfeature ..... 122, 130, 134, 151, 159, 171, 173, 176, 178	\f@family ..... 117, 146, 168
\advance ..... 54, 59, 76, 81	\f@shape ..... 89
B	\f@size ..... 117, 146, 168
\begingroup ..... 115, 144, 166	\faketextsubscript <u>110</u> , 113, 124, 136
\box ..... 55, 60, 77, 82	\faketextsuperscript ..... ..... <u>110</u> , 142, 153, 161
C	\fi ..... 56, 57, 61, 78, 79, 83, 95, 108, 125, 126, 137–139, 154, 155, 162, 163, 174, 179, 187
\c@zf@script ..... 116, 145, 167	\font ..... 46, 50, 68, 72, 104, 107, 117, 146, 168
\char ..... 48, 70, 104	\fontdimen ..... 50, 72
\check@mathfonts ..... 33	\fontsize ..... 34
\CheckCommand ..... 101	H
\csname ..... 100, 117, 146, 168	\hbox ..... 26, 33, 45, 54, 55, 59, 60, 67, 76, 77, 81, 82
D	\ht ..... 33, 54, 59, 76, 81
\DeclareRobustCommand ..... . 22, 28, 41, 63, 87, 102, 112, 141	\hyphenchar ..... 104, 107
\DeclareTextFontCommand ..... 96	I
\def ..... 109	\if@tempswa ..... 129, 133, 158
\dimen . 54, 55, 59, 60, 76, 77, 81, 82	\ifdim ..... 50, 72
\discretionary ..... 101, 103	
\dp ..... 54, 59, 76, 81	

<code>\ifnum</code> . . . . .	46, 47, 68, 69, 104, 183		
<code>\ifx</code> . . . . .	91, 121, 150		
<code>\ifzf@atsui</code> . . . . .	119, 148, 170		
<code>\ifzf@icu</code> . . . . .	127, 156, 175		
<code>\itdefault</code> . . . . .	90		
<code>\itshape</code> . . . . .	97		
<b>K</b>			
<code>\kern</code> . . . . .	25, 26, 31, 39, 45, 62, 67, 83		
<b>L</b>			
<code>\LaTeX</code> . . . . .	28, 83		
<code>\leavevmode</code> . . . . .	23, 29, 42, 64		
<code>\let</code> . . . . .	97, 98, 100		
<code>\lower</code> . . . . .	26, 44, 66		
<b>M</b>			
<code>\math@fontsfalse</code> . . . . .	35		
<b>N</b>			
<code>\namedglyph</code> . . . . .	181		
<code>\newcommand</code> . . . . .	14, 99, 114, 143, 165, 181, 188		
<code>\newlength</code> . . . . .	8–13		
<b>P</b>			
<code>\ProvidesPackage</code> . . . . .	1		
<b>R</b>			
<code>\raise</code> . . . . .	55, 60, 77, 82		
<code>\reflectbox</code> . . . . .	51, 73		
<code>\relax</code> . . . . .	27, 48, 68–70, 72, 75, 76, 81, 116, 145, 167, 182		
<code>\RequirePackage</code> . . . . .	3, 5–7, 85, 86		
<code>\RequireXeTeX</code> . . . . .	4		
<code>\robust@let@nc</code> . . . . .	99, 110, 111		
<code>\rotatebox</code> . . . . .	55, 60, 77, 82		
<b>S</b>			
<code>\sbox</code> . . . . .	32		
<code>\selectfont</code> . . . . .	35		
<code>\setbox</code> . . . . .	54, 59, 76, 81		
<code>\setlength</code> . . . . .	15–20		
<code>\sf@size</code> . . . . .	34		
<code>\smash</code> . . . . .	24, 30, 43, 65		
<code>\spacefactor</code> . . . . .	27		
<b>T</b>			
<code>\TeX</code> . . . . .	22, 40, 62		
<code>\TeX@logo@spacing</code> . . . . .	8		
<code>\textfractionsolidus</code> . . . . .	172, 177		
<code>\textsubscript</code> . . . . .	112		
<code>\textsubscript*</code> . . . . .	112		
<code>\textsuperscript</code> . . . . .	141		
<code>\textsuperscript*</code> . . . . .	141		
<b>U</b>			
<code>\unless</code> . . . . .	121, 150		
<code>\upshape</code> . . . . .	98		
<b>V</b>			
<code>\vbox</code> . . . . .	33		
<code>\vfrac</code> . . . . .	165		
<code>\vss</code> . . . . .	37		
<b>X</b>			
<code>\XeLaTeX</code> . . . . .	2, 63		
<code>\XeTeX</code> . . . . .	2, 41		
<code>\XeTeXcharglyph</code> . . . . .	47, 69		
<code>\XeTeXfonttype</code> . . . . .	46, 68		
<code>\XeTeXglyph</code> . . . . .	184		
<code>\XeTeXglyphindex</code> . . . . .	182		
<code>\XeTeXuseglyphmetrics</code> . . . . .	53, 75		
<code>\xlx@defaultthyphenchar</code> . . . . .	105, 109		
<code>\xxt@kern@aT</code> . . . . .	12, 19, 39		
<code>\xxt@kern@eL</code> . . . . .	13, 20, 83		
<code>\xxt@kern@eX</code> . . . . .	9, 16, 26, 45, 67		
<code>\xxt@kern@La</code> . . . . .	11, 18, 31		
<code>\xxt@kern@Te</code> . . . . .	8, 15, 25, 62		
<code>\xxt@lower@e</code> . . . . .	10, 17, 26, 44, 66		
<code>\xxt@namedglyph@fallback</code> . . . . .	186, 188		
<b>Z</b>			
<code>\z@</code> . . . . .	32–34, 104		
<code>\zf@basefont</code> . . . . .	117, 146, 168		
<code>\zf@check@ot@feat</code> . . . . .	128, 132, 157		
<code>\zf@make@aat@feature@string</code> . . . . .	120, 149		
<code>\zf@set@font@type</code> . . . . .	118, 147, 169		
<code>\zf@thisfontfeature</code> . . . . .	121, 150		