

# The `fbf` package—a Bembo-like font

Michael Sharpe

## I The Package

The `fbf` package offers a family of Bembo-like fonts derived from Cardo in the usual four styles. Text figures may be selected from four types:

- Proportional lining (LF), selected by options `lining`, `proportional` [or `p`]; [lining is the default figure style;]
- Tabular lining (TLF), selected by options `lining`, `tabular`; [tabular is the default figure alignment;]
- Proportional oldstyle (OsF), selected by option `oldstyle`, `proportional` [or `p`];
- Tabular oldstyle (TOsF), selected by options `oldstyle`, `tabular`.

The package also defines six macros that allow you use alternate figure styles locally:

```
\textlf{97} % print 97 in proportional lining figures
\texttlf{97} % print 97 in tabular lining figures
\textosf{97} % print 97 in proportional oldstyle figures
\texttosf{97} % print 97 in tabular oldstyle figures
\textsu{97} % print 97 in superior figures
\textin{97} % print 97 in inferior figures
\textde{97} % print 97 in denominator figures (same as inferior, but raised to baseline.)
```

As of version 1.15 (mid-2020), there is a new macro `\textfrac` that may be used to construct simple fractions. For example, `\textfrac[2]{7}{8}` renders as 2 $\frac{7}{8}$ . (If the optional argument is not specified, you get just the fraction.) There are two options to `fbf.sty` that may be used to modify the space before and after the solidus: `foresolidus` and `aftsolidus`, which should be specified in em units. Their default values are `.04em` and `0em` respectively.

Option `altP` changes the form of the letter capital P from its default closed shape, as used in almost all modern digital renderings of Bembo, to the more historically accurate open shape, P. See, for example, the reproduction of Pietro Bembo's *De Aetna* at <https://ia601405.us.archive.org/34/items/ita-bnc-ald-00000673-001/ita-bnc-ald-00000673-001.pdf>. (A higher resolution rendering of a two-page sample is available from [https://upload.wikimedia.org/wikipedia/commons/8/89/De\\_Aetna\\_1495.jpg](https://upload.wikimedia.org/wikipedia/commons/8/89/De_Aetna_1495.jpg).) Unicode T<sub>E</sub>X users may load `fbf` with the equivalent to `altP` by the code block

```
\usepackage{fontspec}
\setmainfont{fbf}[%
UprightFeatures = {StylisticSet=01},
BoldFeatures = {StylisticSet=01}
]
```

(Capital P in italic and bold italic is already open—those faces have no `ss01` feature.)

Option `sup`s changes the form of footnote markers to use `fbf`'s superior figures, unless you have redefined the meaning of `\thefootnote` prior to loading `fbf`. For more control over size, spacing and position of footnote markers, use the `superiors` package: E.g.,

```
\usepackage[supstfm=fbb-Regular-sup-t1]{superiors}
```

There is a scaled option (e.g., `scaled=.97`) that allow you to adjust the text size against, say, a math package. This text package works well with `newtxmath` with the `libertine` option, because the latter has italics of the same italic angle as `fbb` and of very similar xheight and weight. The suggested invocation is:

```
% load babel package and options here
\usepackage[full]{textcomp} % to get the right copyright, etc.
\usepackage[p,osf]{fbb} % osf in text, tabular lining figures in math
\usepackage[scaled=.95,type1]{cabin} % sans serif in style of Gill Sans
\usepackage[varqu,varl]{zi4}% inconsolata typewriter
\usepackage[T1]{fontenc} % LY1 also works
\usepackage[libertine]{newtxmath}
\usepackage[cal=boondoxo,bb=boondox,frak=boondox]{mathalfa}
```

Here is a short sample based on this preamble:

The typeset math below follows the ISO recommendations that only variables be set in italic. Note the use of upright shapes for  $d$ ,  $e$  and  $\pi$ . (The first two are entered as `\mathrm{d}` and `\mathrm{e}`, and in fonts derived from `newtxmath` or `mtpro2`, the latter is entered as `\uppi`.)

**Simplest form of the *Central Limit Theorem*:** Let  $X_1, X_2, \dots$  be a sequence of iid random variables with mean 0 and variance 1 on a probability space  $(\Omega, \mathcal{F}, \mathbb{P})$ . Then

$$\mathbb{P}\left(\frac{X_1 + \dots + X_n}{\sqrt{n}} \leq y\right) \rightarrow \mathfrak{N}(y) := \int_{-\infty}^y \frac{e^{-t^2/2}}{\sqrt{2\pi}} dt \quad \text{as } n \rightarrow \infty,$$

or, equivalently, letting  $S_n := \sum_1^n X_k$ ,

$$\mathbb{E}f(S_n/\sqrt{n}) \rightarrow \int_{-\infty}^{\infty} f(t) \frac{e^{-t^2/2}}{\sqrt{2\pi}} dt \quad \text{as } n \rightarrow \infty, \text{ for every } f \in \text{bC}(\mathbb{R}).$$

## 2 Text effects under fontaxes

This package loads the `fontaxes` package in order to access italic small caps. You should pay attention to the fact that `fontaxes` modifies the behavior of some basic  $\text{\LaTeX}$  text macros such as `\textsc` and `\textup`. Under normal  $\text{\LaTeX}$ , some text effects are combined, so that, for example, `\textbf{\textit{\textup{a}}}` produces bold italic a, while other effects are not, eg, `\textsc{\textup{a}}` has the same effect as `\textup{a}`, producing the letter a in upright, not small cap, style. With `fontaxes`, `\textsc{\textup{a}}` produces instead upright small cap a. It offers a macro `\textulc` that undoes small caps, so that, eg, `\textsc{\textulc{a}}` produces a in non-small cap mode, with whatever other style choices were in force, such as bold or italics.

## 3 Glyphs in TS1 encoding

The layout of the TS1 encoded Text Companion font, which is fully rendered *in regular style only*, is as follows. See below for the macros that invoke these glyphs. Though shown in regular weight, upright shape only, a reduced set of glyphs are available in all other weights and shapes.

	ó	í	ê	ë	ü	ý	ö	ÿ	
óOx	o	i	e	~	ü	ý	ö	ÿ	"0x
óIx	o	i	e	~	ü	ý	ö	ÿ	

´02x	16	17	„ 18	19	20	— 21	— 22	23	"1x
´03x	← 24	→ 25	˘ 26	˘ 27	˘ 28	˘ 29	30	31	
´04x	ƒ 32	33	34	35	\$ 36	37	38	' 39	"2x
´05x	40	41	* 42	43	, 44	= 45	• 46	/ 47	
´06x	O 48	I 49	2 50	3 51	4 52	5 53	6 54	7 55	"3x
´07x	8 56	9 57	58	59	⟨ 60	– 61	⟩ 62	63	
´10x	64	65	66	67	68	69	70	71	"4x
´11x	72	73	74	75	76	∅ 77	78	○ 79	
´12x	80	81	82	83	84	85	86	Ω 87	"5x
´13x	88	89	90	∥ 91	92	∥ 93	↑ 94	↓ 95	
´14x	` 96	97	★ 98	o o 99	† 100	101	102	103	"6x
´15x	104	105	106	107	☛ 108	∞ 109	♪ 110	111	
´16x	112	113	114	115	116	117	118	119	"7x
´17x	120	121	122	123	124	125	~ 126	= 127	
´20x	˘ 128	˘ 129	˘ 130	˘ 131	† 132	‡ 133	∥ 134	%00 135	"8x
´21x	• 136	°C 137	\$ 138	139	f 140	© 141	W 142	N 143	
´22x	G 144	P 145	£ 146	R 147	! 148	d 149	d 150	TM 151	"9x
´23x	%00 152	¶ 153	B 154	Nº 155	% 156	e 157	o 158	SM 159	
´24x	[ 160	] 161	¢ 162	£ 163	¤ 164	¥ 165	! 166	§ 167	"Ax
´25x	¨ 168	© 169	ª 170	© 171	¬ 172	® 173	® 174	– 175	
´26x	° 176	± 177	2 178	3 179	´ 180	μ 181	¶ 182	• 183	"Bx
´27x	※ 184	1 185	º 186	√ 187	¼ 188	½ 189	¾ 190	€ 191	
´32x	208	209	210	211	212	213	× 214	215	"Dx
´33x	216	217	218	219	220	221	222	223	
´36x	240	241	242	243	244	245	÷ 246	247	"Fx
´37x	248	249	250	251	252	253	254	255	
	"8	"9	"A	"B	"C	"D	"E	"F	

LIST OF MACROS TO ACCESS THE TS1 SYMBOLS IN TEXT MODE:

(Note that slots 0–12 and 26–29 are accents, used like \t{a} for a tie accent over the letter a. Slots 23 and 31 do not contain visible glyphs, but have heights indicated by their names.)

0 \capitalgrave  
 1 \capitalacute  
 2 \capitalcircumflex  
 3 \capitaltilde  
 4 \capitaldieresis  
 5 \capitalhungarumlaut  
 6 \capitalring  
 7 \capitalcaron  
 8 \capitalbreve  
 9 \capitalmacron  
 10 \capitaldotaccent  
 11 \capitalcedilla  
 12 \capitalogonek  
 13 \textquotestraightbase  
 18 \textquotestraightdblbase  
 21 \texttwelveudash

22 \textthreequartersemdash  
 23 \textcapitalcompwordmark  
 24 \textleftarrow  
 25 \textrightarrow  
 26 \t % tie accent, skewed right  
 27 \capitaltie % skewed right  
 28 \newtie % tie accent centered  
 29 \capitalnewtie % ditto  
 31 \textascendercompwordmark  
 32 \textblank  
 36 \textdollar  
 39 \textquotesingle  
 42 \textasteriskcentered  
 45 \textdblhyphen  
 47 \textfractionsolidus  
 48 \textzerooldstyle  
 49 \textoneoldstyle  
 50 \texttwooldstyle  
 49 \textthreeoldstyle  
 50 \textfouroldstyle  
 51 \textfiveoldstyle  
 52 \textsixoldstyle  
 53 \textsevenoldstyle  
 54 \texteightoldstyle  
 55 \textnineoldstyle  
 60 \textlangle  
 61 \textminus  
 62 \textrangle  
 77 \textmho  
 79 \textbigcircle  
 87 \textohm  
 91 \textlbrackdbl  
 93 \textrbrackdbl  
 94 \textuparrow  
 95 \textdownarrow  
 96 \textasciigrave  
 98 \textborn  
 99 \textdivorced  
 100 \textdied  
 108 \textleaf  
 109 \textmarried  
 110 \textmusicalnote  
 126 \texttildebelow  
 127 \textdblhyphenchar  
 128 \textasciibreve  
 129 \textasciicaron  
 130 \textacutedbl  
 131 \textgravedbl  
 132 \textdagger  
 133 \textdaggerdbl  
 134 \textbardbl  
 135 \textperthousand  
 136 \textbullet  
 137 \textcelsius

138 \textdollaroldstyle  
 139 \textcentoldstyle  
 140 \textflorin  
 141 \textcolonmonetary  
 142 \textwon  
 143 \textnaira  
 144 \textguarani  
 145 \textpeso  
 146 \textlira  
 147 \textrecipe  
 148 \textinterrobang  
 149 \textinterrobangdown  
 150 \textdong  
 151 \texttrademark  
 152 \textpertenthousand  
 153 \textpilcrow  
 154 \textbaht  
 155 \textnumero  
 156 \textdiscount  
 157 \textestimated  
 158 \textopenbullet  
 159 \textservicemark  
 160 \textlquill  
 161 \textrquill  
 162 \textcent  
 163 \textsterling  
 164 \textcurrency  
 165 \textyen  
 166 \textbrokenbar  
 167 \textsection  
 168 \textasciidieresis  
 169 \textcopyright  
 170 \textordfeminine  
 171 \textcopyleft  
 172 \textlnot  
 173 \textcircledP  
 174 \textregistered  
 175 \textasciimacron  
 176 \textdegree  
 177 \textpm  
 178 \texttwosuperior  
 179 \textthreesuperior  
 180 \textasciiacute  
 181 \textmu  
 182 \textparagraph  
 183 \textperiodcentered  
 184 \textreferencemark  
 185 \textonesuperior  
 186 \textordmasculine  
 187 \textsurd  
 188 \textonequarter  
 189 \textonehalf  
 190 \textthreequarters  
 191 \texteuro

214 `\texttimes`

246 `\textdiv`

There is a macro `\textcircled` that may be used to construct a circled version of a single letter using `\textbigcircle`. The letter is always constructed from the small cap version, so, in effect, you can only construct circled uppercase letters: `\textcircled{M}` and `\textcircled{m}` have the same effect, namely  $\textcircled{M}$ .

## 4 Historical Background

Humanist scholar Pietro Bembo, a seminal figure in literature and music of the Italian Renaissance, who later became Cardinal Bembo, wrote an essay in the last decade of the 15th century about his travels to Mt. Aetna, which work was published by the Venetian printer Aldus Manutius (whose name gave us *Aldine*) using a new Roman font designed by his punch-cutter, Francesco Griffo that improved on the earlier efforts of Jenson, another printer in Venice. That font seems to have played a similarly seminal rôle in typography. It was the direct progenitor of the many Garamond fonts, and has seen numerous modern revivals whose names make use of every known historical connection to the figures named above, such as Lucrezia Borgia who was for several years Bembo's lover.

The metal form of the Bembo font developed by Stanley Morison for English Monotype in the 1920's was widely used in book printing due to its handsome appearance and readability. Commercial digital versions have not had much love from critics until recently. Adobe's MinionPro and WarnockPro arguably deserve the prizes for the best modern revivals of oldstyle fonts not too distant from Bembo. (Both lack Bembo's tall ascenders and its characteristic overarching f.)

To my knowledge, there is currently only one free source for a Bembo-like font family, that being David Perry's *Cardo* (a contraction of *Cardinal Bembo*), which is not readily accessible to  $\text{\LaTeX}$  users and which lacks Bold Italic as well as a full range of Small Caps and figure styles.

This package is named for its Berry form `fbf`, with `f` denoting free (*i.e.*, public) and `bb` the Berry abbreviation for Bembo. It is derived from *Cardo*, with significant modifications. Where *Cardo* is intended primarily for scholars of ancient languages, those features are removed from `fbf` and issues of more modern concern are added. The package contains the usual four styles (regular, italic, bold, bold italic), each with small caps and figures in tabular lining, proportional lining, tabular oldstyle and proportional oldstyle, as well as superior and inferior figures. The f-ligatures have been revised/added so as to function better with  $\text{\LaTeX}$ , and other glyphs have been changed as necessary to suit the demands of *FontForge*. A kerning table was added to Regular upright weight—a serious omission in the original. The Bold Italic weight was created algorithmically from Italic, but the result required much intervention by human hand. Small Caps were created for all styles other than regular, which was already present in *Cardo*.

On screen and paper, `fbf` appears close in weight to Libertine, though of larger xheight and much larger ascender height, a bit softer and slightly less plain. The following two sentences are written in `fbf` and Libertine respectively. The third example sentence is written using `garamondx`, whose natural xheight is comparable to Libertine, but which should normally be scaled down to resemble more familiar Garamonds. Perhaps `fbf` will be prove to be more suitable for older eyes.

COMPARISON BETWEEN *FBF* AND *LIBERTINE*:

Both `fbf` and Libertine are highly readable fonts in their standard Roman forms, each has a wide range of figures and small caps, but Libertine has the advantage in the number of supported scripts and the variety of weights.

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SAME SENTENCE IN *GARAMONDX*:

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