

The Greek4cbc fonts*

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Abstract

The `greek4cbc` bundle provides a set of uppercase Greek characters as shown on a 394 BC stele in Athens.

Contents

1 Introduction	1
1.1 An alphabetic tree	1
2 The <code>greek4cbc</code> package	2

1 Introduction

The font presented here is meant to be typical of the Greek characters in use about the 4th century BC. It is one of a series of fonts intended to show how the Latin alphabet has evolved from its original Phoenician form to its present day appearance.

This manual is typeset according to the conventions of the `LATEX DOCSTRIP` utility which enables the automatic extraction of the `LATEX` macro source files [?].

Section 2 describes the usage of the package. Commented code for the fonts and source code for the package may be in later sections.

1.1 An alphabetic tree

Scholars are reasonably agreed that all the world's alphabets are descended from a Semitic alphabet invented about 1600 BC in the Middle East [Dru95]. The word 'Semitic' refers to the family of languages used in the geographical area from Sinai in the south, up the Mediterranean coast to Asia Minor in the north and west to the valley of the Euphrates.

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The Phoenician alphabet was stable by about 1100 BC and the script was written right to left. In earlier times the writing direction was variable, and so were the shapes and orientation of the characters. The alphabet consisted of 22 letters and they were named after things. For example, their first two letters were called *aleph* (ox), and *beth* (house). The Phoenician script had only one case — unlike our modern fonts which have both upper- and lower-cases. In modern day terms the Phoenician abecedy was:

A B G D E Y Z H Θ I K L M N X O P ts Q R S T

where the ‘Y’ (*vau*) character was sometimes written as ‘F’ and ‘ts’ stands for the *tsade* character.

The Greek alphabet is one of the descendants of the Phoenician alphabet; another was Aramaic which is the ancestor of the Arabic, Persian and Indian scripts. Initially Greek was written right to left but around the 6th C BC became *boustrophedron*, meaning that the lines alternated in direction. At about 500 BC the writing direction stabilised as left to right. The Greeks modified the Phoenician alphabet to match the vocalisation of their language. They kept the Phoenician names of the letters, suitably ‘greekified’, so *aleph* became the familiar *alpha* and *beth* became *beta*. At this point the names of the letters had no meaning. Their were several variants of the Greek character glyphs until they were finally fixed in Athens in 403 BC. The Greeks did not develop a lower-case script until about 600–700 AD.

The Etruscans based their alphabet on the Greek one, and again modified it. However, the Etruscans wrote right to left, so their borrowed characters are mirror images of the original Greek ones. Like the Phoenicians, the Etruscan script consisted of only one case; they died out before ever needing a lower-case script. The Etruscan script was used up until the first century AD, even though the Etruscans themselves had disappeared by that time.

In turn, the Romans based their alphabet on the Etruscan one, but as they wrote left to right, the characters were again mirrored (although the early Roman inscriptions are boustrophedron).

As the English alphabet is descended from the Roman alphabet it has a pedigree of some three and a half thousand years.

2 The greek4cbc package

In the 6th century BC the Greek alphabet was settling down, but there were several different glyphs used for the characters depending both on the date and on the geographical area. The alphabet retained the Phoenician F form of *vau*, which the Greeks called *digamma*, and also used the Phoenician *qoph* (from which we get our Q). It had added the Ψ, Φ, and Ω characters. Thus, the abecedy consisted of 26 characters compared with the 24 characters for modern Greek.

In 403 BC the Athenian Greeks came to an agreement on a standard abecedy and set of glyphs. The font provided by this package comes from an inscription on a stele in Athens dated 394 BC, so I have assumed that it is reasonable rendition of the 403 ‘standard’. I have taken the glyphs from Lewis Day’s compendium [Day95].

Table 1: The Greek script and alphabet

Value	Name	ASCII	Command	Command
A	alpha (aleph)	a	<code>\Aalpha</code>	<code>\ARalpha</code>
B	beta (beth)	b	<code>\Abeta</code>	<code>\ARbeta</code>
Γ	gamma (gimel)	g	<code>\Agamma</code>	<code>\ARgamma</code>
Δ	delta (daleth)	d	<code>\Adelta</code>	<code>\ARdelta</code>
E	epsilon (he)	e	<code>\Aepsilon</code>	<code>\AREpsilon</code>
Z	zeta (zayin)	z	<code>\Azeta</code>	<code>\ARzeta</code>
H	eta (heth)	h	<code>\Aeta</code>	<code>\AReta</code>
Θ	theta (teth)	T	<code>\Atheta</code>	<code>\ARtheta</code>
I	iota (yod)	i	<code>\Aiota</code>	<code>\ARiota</code>
K	kappa (kaph)	k	<code>\Akappa</code>	<code>\ARkappa</code>
Λ	lambda (lamed)	l	<code>\Alambda</code>	<code>\ARlambda</code>
M	mu (mem)	m	<code>\Amu</code>	<code>\ARmu</code>
N	nu (nun)	n	<code>\Anu</code>	<code>\ARnu</code>
Ξ	xi (samekh)	x	<code>\Axi</code>	<code>\ARxi</code>
O	omicron (ayin)	o	<code>\Aomicron</code>	<code>\ARomicron</code>
Π	pi (pe)	p	<code>\Api</code>	<code>\ARpi</code>
R	rho (resh)	r	<code>\Arho</code>	<code>\ARrho</code>
Σ	sigma (shin)	s	<code>\Asigma</code>	<code>\ARsigma</code>
T	tau (tav)	t	<code>\Atau</code>	<code>\ARtau</code>
Υ	upsilon	y	<code>\Aupsilon</code>	<code>\ARupsilon</code>
X	chi	X	<code>\Achi</code>	<code>\ARchi</code>
Φ	phi	f	<code>\Aphi</code>	<code>\ARphi</code>
Ψ	psi	P	<code>\Apsi</code>	<code>\ARpsi</code>
Ω	omega	O	<code>\Aomega</code>	<code>\ARomega</code>

The abecedary is the modern one of 24 characters.

Table 1 lists, in the Greek alphabetical order, the transliterated value of the characters and the modern and Phoenician names (in parentheses) of the character.

`\givbcfamily` This command selects the 4th century BC Greek font family. The family name is `givbc`, standing for Greek IV century BC.

`\textgivbc` The command `\textgivbc{<text>}` typesets *<text>* in the Greek font.

I have provided two ways of accessing the Greek glyphs: (a) by ASCII characters, and (b) by commands whose names are based on the (modern) name of the character. These are shown in Table 1. The glyphs illustrated by Day are not uniform in height but I have provided both ‘smooth’ and ‘rough’ versions. The smooth versions are accessed by either the ASCII characters or by the commands `\Axxx`, while the rough versions are only accessible by the `\ARxxx` commands.

`\translitgivbc` `\translitgivbc{<commands>}` will typeset *<commands>* (those in the last two columns of Table 1) as modern glyphs instead of the archaic ones.

`\translitgivbcfont` The transliterated text is set in the `\translitgivbcfont` font, which is initialised to a math roman form (i.e., `\mathrm`). The transliteration need not be in math mode.

References

- [Day95] Lewis F. Day. *Alphabets Old & New*. Senate, 1995. (Third edition originally published by B. T. Bashford, 1910)
- [Dru95] Johanna Drucker. *The Alphabetic Labyrinth*. Thames and Hudson, 1995.
- [Fir93] Richard A. Firmage. *The Alphabet Abecedarium*. David R. Goodine, 1993.
- [MG04] Frank Mittelbach and Michel Goossens. *The LaTeX Companion*. Addison-Wesley Publishing Company, second edition, 2004.

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.

G	T	<code>\translitgivbc</code> 4
<code>\givbcfamily</code> 2	<code>\textgivbc</code> 4	<code>\translitgivbcfont</code> . . 4