

# A Simple Book Design in ConT<sub>E</sub>Xt

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## Abstract

As a test of book design implementation in ConT<sub>E</sub>Xt, I report on a design for *A Voyage to Arcturus* by David Lindsay, including page setups, chapter heads, headers, and typescripts for fonts.

## 1 Motivation

Whenever I learn a new T<sub>E</sub>X system, I try to implement a design for a significant number of pages. Many years ago, when I was learning L<sup>A</sup>T<sub>E</sub>X (2.09), I wrote a `rawls.sty` to mimic Harvard Press's design for John Rawls's *A Theory of Justice* [3], a design that featured a number of interesting features: not only were there parts, chapters, and sections, but the sections were numbered consecutively throughout the book, orthogonally to the chapters. So the first section of Chapter 3, say, might be numbered section 16. Page headers had rules under the header texts. I mention all this because in those pre-L<sup>A</sup>T<sub>E</sub>X<sub>2 $\epsilon$</sub>  days, it was far from trivial to make substantive changes to the default styles. I remember studying Don Knuth's (plain) code for his Computer Journal article on Literate Programming and thinking what a nightmare it would be to implement in L<sup>A</sup>T<sub>E</sub>X; but that was 1988. Matters have certainly improved since then.

When I first encountered ConT<sub>E</sub>Xt I was immediately impressed by the `setups` mechanism of key/value pairs approach to a design interface. I began using ConT<sub>E</sub>Xt for typesetting internal documentation here at the Duke Press (coded in DocBook XML and processed using Simon Pepping's *Docbook In ConTeXt* [2]). But I had in mind all along trying out ConT<sub>E</sub>Xt in a larger project. I wanted to see how easy it would be to render a book design compared to L<sup>A</sup>T<sub>E</sub>X. I suspected it would be much easier; I was right.

## 2 The Text

When I discovered that a very strange book I had first read as a youth, *A Voyage to Arcturus* by David Lindsay [1], had been deposited in Project Gutenberg, I knew I had my text. In the event, the OCR

text was quite corrupt, and it took a while to make the necessary edits to bring it to an acceptable standard.

The design I had in mind for the book was based on a mathematics text I read in college. The unifying theme was a vertical rule separating visual elements of the chapter headings and page headers.

## 3 Fonts

I decided to use a Bembo clone (called Bergamo) for the text and an Optima clone (called Opus) for the chapter headings and header texts. Both are from the FontSite 500 collection [4]. To use these fonts with ConT<sub>E</sub>Xt, I write some typescripts.

```
\starttypescript [serif] [bergamo] [ec]
  \definefontsynonym [Bergamo-Roman]
    [5borjx8t] [encoding=ec]
  \definefontsynonym [Bergamo-Bold]
    [5bobjx8t] [encoding=ec]
  \definefontsynonym [Bergamo-Italic]
    [5borix8t] [encoding=ec]
  \definefontsynonym [Bergamo-Bold-Italic]
    [5bobix8t] [encoding=ec]
  \definefontsynonym [Bergamo-Caps]
    [5borcj8t] [encoding=ec]
  \definefontsynonym [Bergamo-Bold-Caps]
    [5bobcj8t] [encoding=ec]
\stoptypescript
```

Observant readers who know the Berry naming conventions will see that Bergamo contains both full ‘f’ ligatures and old-style numerals.

In the following I declare that maths be in scaled Palatino (even though in this project there are no maths). I find that Palatino for maths blends well with Bergamo, and I wanted to go ahead and set this up for future projects.

```

\starttypescript [Bergamo]
  \definetypesface [Bergamo] [rm] [serif]
    [bergamo] [default] [encoding=ec]
  \definetypesface [Bergamo] [ss] [sans]
    [opus] [default] [encoding=ec]
  \definetypesface [Bergamo] [tt] [mono]
    [modern] [default]
  \definetypesface [Bergamo] [mm] [math]
    [palatino] [default] [encoding=ec,
      rscale=.90]
\stoptypescript

```

The code for Opus is similar. I store these typescripts in `type-fontsite.tex` and invoke them. Note that I use hanging punctuation and open up the lines to improve readability.

```

% Set up hanging punctuation, pure style;
% Declare Berry naming conventions, ec
% encoding

```

```

\usetyypescript[serif] [hanging] [pure]
\usetyypescript[berry] [ec]

```

```

% Load Bergamo and Opus fonts,
% declare sizes and leading.
% Looks better with lines opened a bit.

```

```

\usetyypescriptfile[type-fontsite]
\usetyypescript [Bergamo]
\setupbodyfont [Bergamo,10pt]
\setupinterlinespace[line=1.35em]

```

```

\setupalign[hanging]

```

#### 4 Chapter Heads, Page Headers and Footers

I set up the heads with these options

```

\setuphead
  [chapter]
  [page=yes,
  before={\blank[force,4*line]},
  after={\blank[4*line]},
  command=\mychap]

```

Note the `command` option. This allows me to design my own chapter head appearance. `\mychap` looks like this (`#1` refers to the chapter number, and `#2` refers to the chapter title):

% the % after ] and } suppresses space

```

\def\mychap#1#2%
  {\hbox to \hsize \bgroup
    \hfill
    \setupframed
      [offset=0.5em,frame=off]%
    \tbox
      {\framed
        [width=2cm,align=left]
        {\ss #1}}%
    % now instructions for #2,
    % anything but ragged right with
    % no hyphenation looks bad
    \tbox
      {\framed
        [width=.5\textwidth,
        align=flushright,
        leftframe=on]
        {\hyphenpenalty 10000 \ss #2}}%
  \egroup}

```

I want dropped caps for my chapter openers, and small caps afterwards for a certain number of words that I choose. (It is also possible to set this up so the entire first line is in small caps automatically; but I prefer to choose my own breaks.) The dropped cap will be in Opus, be 3 `\baselineskips` tall, be dropped one line, and have 2 points of padding.

```

\def\Drop {\DroppedCaps
  {} {Sans} {3\baselineskip}
  {2pt} {1\baselineskip} {2}}

```

```

\def\chap#1/#2/{\Drop #1{\sc#2}}

```

so I can say

```

\chapter{The S'eance}

```

```

\chap 0/n a march evening/, at eight
  o'clock, Backhouse, the

```

You can see the result in Figure 1.

To unify the design, I make the headlines mirror the chapter openers, with a vertical rule separating verso the page number and book title and recto the chapter title and page number, all in Opus. First I declare doublesided pages and turn off auto page-number placement. Then I specify a different scheme for chapter opening pages.

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```
% Remove auto page numbering placement;
% I'll do it manually.

\setuppagenumbering
  [alternative=doublesided,
   location=]

% Set up header texts, recto and verso

\setupheadertexts
  [] [\setups{text:header:1}]
  [] [\setups{text:header:2}] []

\startsetups text:header:1
  \getmarking[chapter][current]
  \quad\vrule\quad
  \pagenumber
\stopsetups

\startsetups text:header:2
  \pagenumber
  \quad\vrule\quad
  A Voyage to Arcturus
\stopsetups

% Define heads for chapter opening pages

\definertext
  [chapterstart]
  [footer]
  [pagenumber]

\setuphead
  [chapter]
  [header=empty,
   footer=chapterstart]

\setupheader
  [style=\ss]

A page spread can be seen in Figure 2.
  Now I specify the Table of Contents:

% Set up table of contents format.
% Move whole operation to the right
% to better center the TOC, and make
% sure chap numbers align properly
% (flushright) in their own box

\definelist
  [chapter]
```

```
\setuplist
  [chapter]
  [alternative=a,
   margin=.2\textwidth,
   numbercommand=\NumCom]

\def\NumCom#1{\hbox to 2em{\hfill #1}}
```

## 5 Setting Up the Pages

Last (actually first) I set up the pages and a switch for page imposition. Pay attention to the commented lines for crop marks, etc.

```
% Set the sizes.

\definepapersize
  [arc]
  [height=220mm,
   width=145mm]

\setuppapersize
  [arc]
  [letter]

% Set up arrangements for printing as
% booklet. Toggle as needed.

% \setuparranging[2UP,rotated,doublesided]

\setuplayout
  [margin=0pt,
   width=middle]

\setuplayout
  [topspace=2\baselineskip,
   height=middle]

% Layout modifications to headers, etc

\setuplayout
  [header=2\baselineskip,
   footer=2\baselineskip,
   location=middle]

% Crop marks.
%
% \setuplayout[marking=on]

\setupindenting
  [medium]
```

```
% I guess Bush would call this
% 'freedomspacing'

\setuplanguage
[en]
[spacing=broad] % french spacing
```

Finally, for output targeted for a computer screen instead of print, I can say

```
\setuppapersize[S6] [S6]
\setupinteraction[state=start]
```

I can't argue emphatically enough for this approach to books and articles destined for a computer screen. The advantages to making one's way through the text by just the touch of the space bar are, to me, self evident.

## 6 Future Work

Clearly, implementing a simple design in ConT<sub>E</sub>Xt is quite straightforward. In fact, the advantages of using ConT<sub>E</sub>Xt become more obvious the more complicated the document design. I hope that this article might motivate others to give ConT<sub>E</sub>Xt a try for their own typesetting projects.

Eventually I plan to code the book in XML along with supporting files for browser display and direct typesetting with ConT<sub>E</sub>Xt. For the moment, I will post the screen version at <http://www.duke.edu/~grath/arcS6.pdf>, after a friend designs a

suitable cover page for it. Other versions will follow when ready.

But be warned—many have found Lindsay's philosophy detestable (a worship of suffering is one characteristic of it). The English writer C. S. Lewis certainly found it so, even if the book did influence his wonderful space novels.

*Acknowledgments.* Thanks are due to Hans Hagen for improving my humble code in places and for writing the ConT<sub>E</sub>Xt *TUGboat* style.

## References

- [1] Lindsay, David, *A Voyage to Arcturus*, London, Methuen, 1920. Text available at Project Gutenberg: <http://www.gutenberg.net/etext/1329>. Other, corrupt editions can be found on [amazon.com](http://amazon.com).
- [2] Pepping, Simon, *DocbookInConTeXt*, available at <http://www.leverkruid.nl/context/index.html>.
- [3] Rawls, John, *A Theory of Justice*, Revised edition, Belknap Press, Cambridge, MA, 1999.
- [4] FontSite. <http://www.fontsite.com>. T<sub>E</sub>X font metrics and L<sup>A</sup>T<sub>E</sub>X support files by Christopher League are available at <http://contrapunctus.net/league/haques/fs500tex/>.

## 1 | The Séance

ON A MARCH EVENING, at eight o'clock, Backhouse, the medium—a fast-rising star in the psychic world—was ushered into the study at Prolands, the Hampstead residence of Montague Faull. The room was illuminated only by the light of a blazing fire. The host, eyeing him with indolent curiosity, got up, and the usual conventional greetings were exchanged. Having indicated an easy chair before the fire to his guest, the South American merchant sank back again into his own. The electric light was switched on. Faull's prominent, clear-cut features, metallic-looking skin, and general air of bored impassiveness, did not seem greatly to impress the medium, who was accustomed to regard men from a special angle. Backhouse, on the contrary, was a novelty to the merchant. As he tranquilly studied him through half closed lids and the smoke of a cigar, he wondered how this little, thick-set person with the pointed beard contrived to remain so fresh and sane in appearance, in view of the morbid nature of his occupation.

"Do you smoke?" drawled Faull, by way of starting the conversation. "No? Then will you take a drink?"

"Not at present, I thank you."

A pause.

"Everything is satisfactory? The materialisation will take place?"

"I see no reason to doubt it."

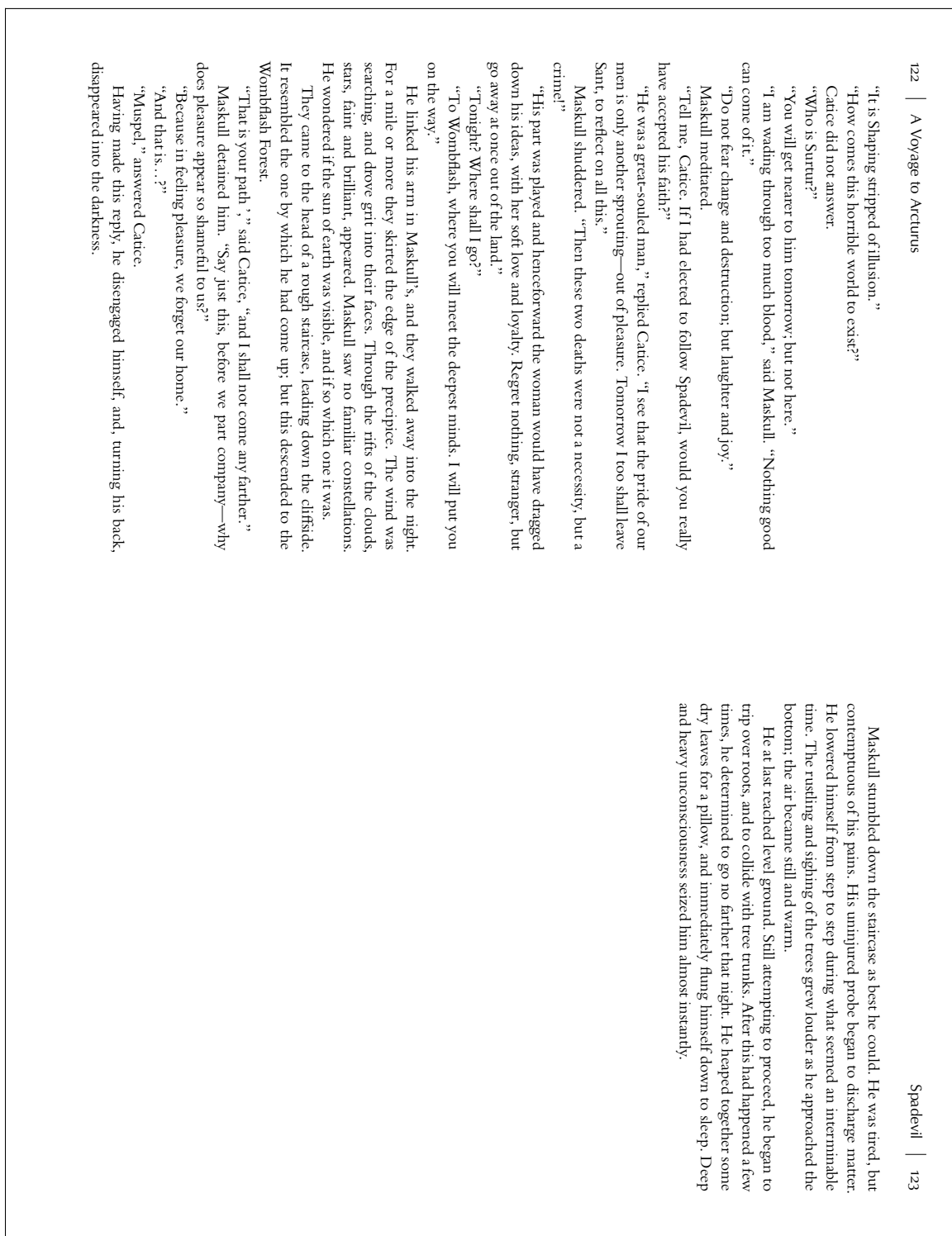
"That's good, for I would not like my guests to be disappointed. I have your check written out in my pocket."

"Afterward will do quite well."

"Nine o'clock was the time specified, I believe?"

"I fancy so."

**Figure 1** A chapter opening page



**Figure 2** A page spread as arranged in signatures