Org-Tufte Readme

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Introduction

This README covers several aspects of using Org documents for compilation to Tufte-style books and handouts via LaTeX and the Tufte-LaTeX package.

The source for this README document is good reference for how to set up and write an Org document to be exported to a Tufte-style handout.

An additional two template files are provided as a basis for Org documents to be compiled to a Tufte-style book and handout respectively.

Much of the source here and documentation are adapted from a few sources: documentation and source for the `tufte-org-mode` project[1] on Github, documentation for the `tufte-latex` project[2] on Github (and CTAN), and discussion on StackExchange[3] about using BibLaTeX with `tufte-latex` classes in LaTeX.

[1] Thomas S. Dye. *tufte-org-mode.* `https://github.com/tsdye/tufte-org-mode.` 2016.
[2] Kevin Godby. *Tufte-LaTeX.* `https://github.com/Tufte-LaTeX/tufte-latex.` 2015.
[3] domwass. *Can I use biblatex with Tufte classes?* `https://tex.stackexchange.com/a/45949.` 2012.

Install Notes

Install TeX packages

Install required TeX packages from CTAN.

```
tlmgr install \
    changepage fancyhdr geometry hyperref natbib \
    paralist placeins ragged2e setspace textcase \
    titlesec xcolor xifthen bera psnfss oberdiek \
    iftex microtype mathpazo soul etex etexcmds \
    biblatex booktabs graphics hyphenat marginfix \
    amsmath morefloats l3packages xpatch hycolor \
    pdfescape letltxmacro ltxcmds kvsetkeys \
    kvdefinekeys bigintcalc intcalc atbegshi \
    atveryend bitset rerunfilecheck epstopdf-pkg \
    uniquecounter refcount gettitlestring \
    hardwrap xltxtra realscripts \
    imakeidx fbb tufte-latex
```

Install Emacs package

The Emacs package at `https://github.com/tsdye/tufte-org-mode` needs to be installed, and the directory containing `ox-tufte-latex.el` file be in the Emacs `load-path` variable (see documentation).

Template Documents

There are two template documents, one for compiling to handouts (`tufte-handout-template.org`), and another for compiling to books (`tufte-book-template.org`).

Compiling Documents

The Org Tufte documents can be compiled to PDF by calling `org-export-dispatch` and exporting to Tufte LaTeX format (i.e., `C-c C-e T` followed by the key corresponding to the desired output).

Tufte Handout Document

THESE ARE HANDOUT DOCUMENTS that simulate the layout in Tufte's handouts.

Document Structure

Handouts only have sections and subsections. The output PDF file has continuous flow, i.e. no section or subsection begins on a new page.

Heading Structure

Tufte handout documents have the heading levels: sections, subsections and paragraphs. (It does not have parts and chapters like Tufte books.) Sub-subsections and subparagraphs are not defined by default.

From an Org-mode perspective, it only supports three heading levels. Heading levels more than three deep are treated as numbered lists.

Tufte Book Documents

THESE ARE BOOK DOCUMENTS that simulate the layout in Tufte's books.

Document Structure

Books have a title page, contents page, book parts and chapters within those book parts. The output PDF file is assembled such that the title page, contents page, each parts page, and the first page of each chapter begins on an odd-numbered page.

Heading Structure

The heading structure of Tufte's books has the heading levels: parts, chapters, sections, subsections and paragraphs.

Sub-subsections and subparagraphs are not defined by default and when used will throw an error when compiling the LaTeX output to PDF.

From an Org-mode perspective, it only supports four heading levels. Heading levels more than four deep are treated as numbered lists and sublists.

Wide text

To have text extend into the margin, use the `fullwidth` environment.

Some really, really, really, really, really, really, really, really, really long text that you want to run into the margin.

Tables

THERE ARE THREE TYPES of supported table placements. These are within the text body, within the margin and across the page.

Text Body Table

Here is an example of a table situated in the text body.

First	Second	Third	Fourth	Fifth	Sixth
A	B	C	D	E	F
G	H	I	J	K	L

Table 1: Example table in the text. Note that the caption is placed in the margin.

Table 2: Example marginal table. Note that the table and the caption are placed in the margin.

First	Second	Third
A	B	C
D	E	F

Margin Table

Here is an example of a table situated in the margin. We can control the offset to situate the margin table accordingly.

Full–width Table

Here is an example of a table that is centered on the page, that is allowed to span up to the full width of the page. Note that when the automatic caption placement can be suboptimal, so it can be better to define an offset for it as is done in this example.

First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth
A	B	C	D	E	F	G	H	I
J	K	L	M	N	O	P	Q	R

Table 3: Example full width table. Note that the caption is placed in the margin.

Figures

FIGURE PLACEMENT POSSIBILITIES are similar those available for tables. These are within the text body, within the margin and across the page.

Text Body Figure

Here is an example of a figure situated in the text body. In this example, the `:vertical-alignment` LaTeX attribute is set to `t` to align the caption to the top of the image, but it can be set to `b` to align the caption to the bottom of the image instead.
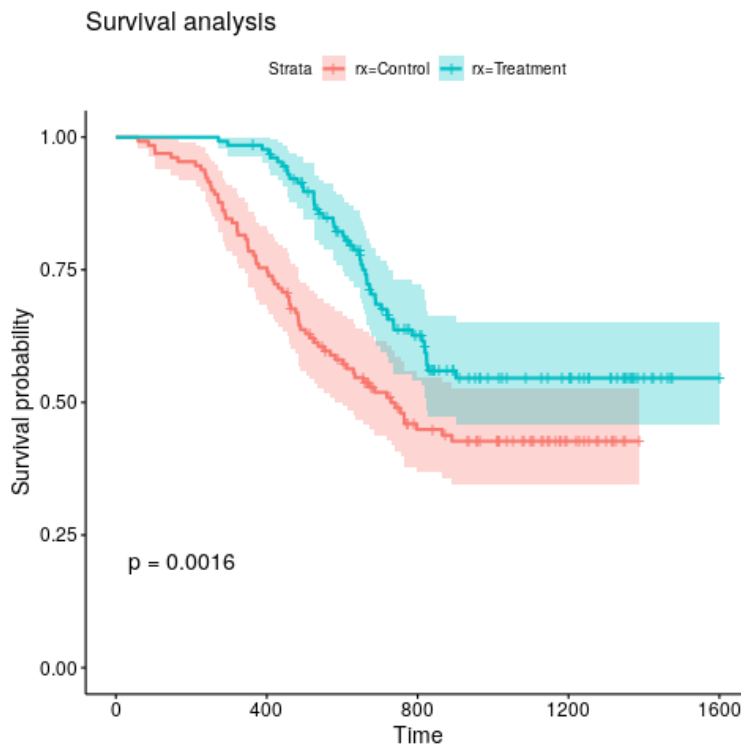

Figure 1: Kaplan–Meier curve. This figure only takes up the width of the text body. The caption in the margin is set to align with the top of the image.
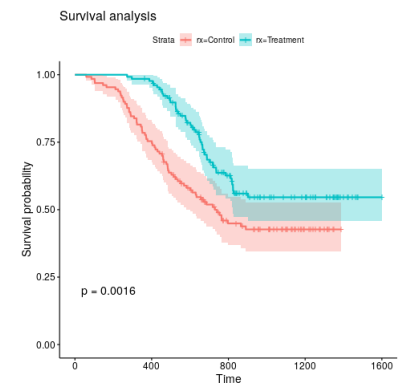

Figure 2: The same Kaplan–Meier curve. This figure fits in the margin. An offset can be provided to adjust the position.

Margin Figure

Here is an example of a figure situated in the margin. We can control the offset to situate the margin table accordingly.

Full-width Figure

Here is an example of a figure that is centered on the page, that is allowed to span up to the full width of the page.

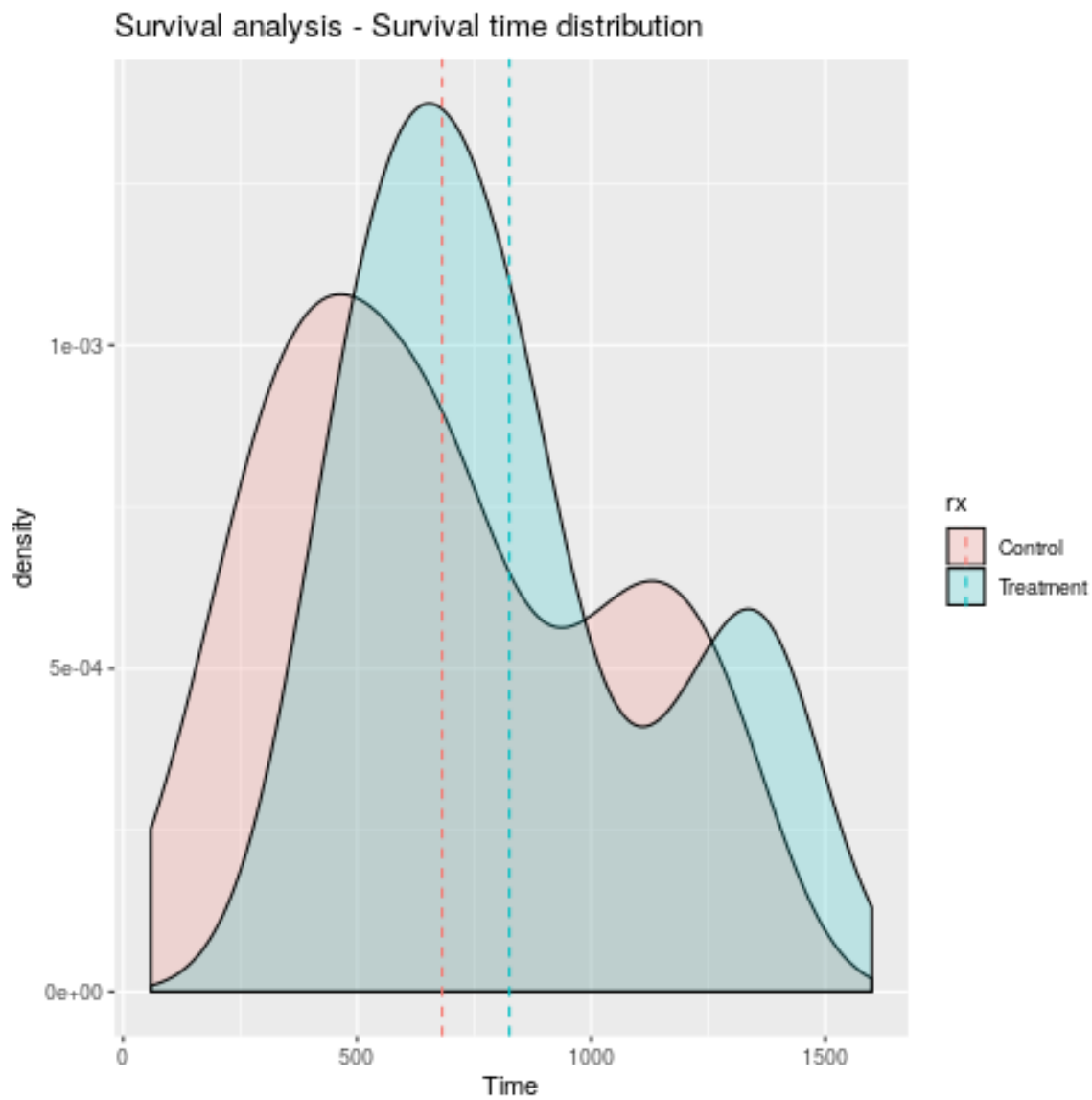Survival analysis - Survival time distribution

Figure 3: This density plot shows the distribution of two random variables. The figure takes up the full page width.

References

As an example, here is a reference to one of Edward Tufte's books.[4]

You can also do references another way, like this: see Tufte, Edward R. (1986).[5]

[4] Edward R. Tufte. *The Visual Display of Quantitative Information*. USA: Graphics Press, 1986. ISBN: 096139210X.

[5] Ibid.

ebib

If you currently use `ebib`, this document and the template documents have a default setup for it.

Specifically, the file–local variables in these files define a new link type `tufte-ebib` that creates margin citations that are used in Tufte's books and handouts. (The technical details are that the `tufte-ebib` links export the reference to use the LaTeX `\autocite{}` command, for which we've set up `biblatex` to output to footnotes, which are automatically put in the margins by the `tufte-latex` classes.)

After `ebib` is opened and a BibTeX file is loaded into it, the `ebib-insert-citation` command can be used to insert `tufte-ebib` links.

Note that `ebib` needs to be opened with the corresponding BibTeX file for this document in order to export the references. It should match file referenced in the `\addbibresource` LaTeX header at the top of this document source.

Directly Citing References

Otherwise, references can be directly cited using the `\cite{}` (for in-text citations) and `\autocite{}` (for margin citations) commands. The bibliography keys the commands are called with should match BibTeX entry keys in the file loaded in the `\addbibresource` LaTeX header at the top of this document source.

Macros

Here are some Org macros that expand to `tufte-latex` TeX package commands (see documentation). They are defined at the top of this document, and are also pre–defined in the template files.

Org macros are typically used within the Org document as follows:

```
{{{macroname(arg1,arg2,...)}}}
```

The above calls the macro `macroname` with three arguments `arg1`, `arg2`, `arg3`, and so on. When the value for an argument is not given, it is simply substituted with an empty string.

Commas within an argument should be escaped (`\,`), for example

```
{{{sidenote(This is a macro\, called with two args,0pt)}}}
```

newthought

THIS MACRO SETS THE FIRST PART of the first sentence in a new section to small-caps, using the `\newthought` command in `tufte-latex`.

`#+MACRO: newthought \newthought{$1}`

sidenote

This macro creates a numbered sidenote [6], using the `\sidenote` command in `tufte-latex`.

[6] This sidenote is numbered, and has a comma.

`#+MACRO: sidenote \sidenote[$2][$3]{$1}`

Specifically, the macro has the following signature, where `text` is the sidenote text, `offset` is the vertical offset for the sidenote position (e.g. `0pt`, `1.0in` or `2.0cm`), and `number` is an override for the sidenote number. Overriding the sidenote number will only change the number for that sidenote, and will not affect the sequence of subsequent sidenotes.

`{{{sidenote(text,offset,number)}}}`

Note that regular footnotes get translated into sidenotes even without this macro.[7]

[7] Like this one.

Sidenotes can be italicized by starting the `text` argument with the LaTeX `\it` command. [8] They can be similarly bolded using the `\bf` command. [9] It is also possible to both bold and italicize the side note. [10]

[8] *Sidenotes can be italicized, like this.*

[9] **They can also be bolded, like this.**

[10] ***Or both, like this.***

marginnote

This macro creates an unnumbered sidenote , otherwise called a margin note, using the `\marginnote` command in `tufte-latex`.

This marginnote is unnumbered.

`#+MACRO: marginnote \marginnote[$2]{$1}`

Specifically, the macro has the following signature, where `text` is the margin note text, and `offset` is the vertical offset for the margin note position (e.g. `0pt`, `1.0in` or `2.0cm`).

`{{{marginnote(text,offset)}}}`

Like sidenotes, margin notes can also be italicized, bolded, or both.

To italicize margin notes by default, modify the macro definition to include `\it` before `$1`.

Margin notes can be italicized, like this.
Or bolded, like this.
Or both, like this.

`#+MACRO: marginnote \marginnote[$2]{\it $1}`

Bibliography

domwass. *Can I use biblatex with Tufte classes?* `https://tex.stackexchange.com/a/45949`. 2012.

Dye, Thomas S. *tufte-org-mode.* `https://github.com/tsdye/tufte-org-mode`. 2016.

Godby, Kevin. *Tufte-LaTeX.* `https://github.com/Tufte-LaTeX/tufte-latex`. 2015.

Tufte, Edward R. *The Visual Display of Quantitative Information.* USA: Graphics Press, 1986. ISBN: 096139210X.