

What Is Typography?

Merriam Webster

Main Entry: ty·pog·ra·phy

Function: noun

Etymology: Medieval Latin typographia, from Greek typos
impression, cast + -graphia -graphy – more at type

Date: 1610

- 1 letterpress printing
- 2 the style, arrangement, or appearance of typeset matter

What Is Typography?



Logo for a magazine which has never been published (Herb Lubalin and Tom Carnase, 1965)

- Express language through type, placement, composition and typechoice.
- ‘Typography has one plain duty before it and that is to convey information in writing.’ (Emil Ruder, 1961)

Examples: Documents

THE ENGLISH RENAISSANCE OF ART

Literature must rest always on a principle, and temporal considerations are no principle at all. For to the poet all times and places are one; the stuff he deals with is eternal and eternally the same: no theme is inept, no past or present preferable. The steam whistle will not affright him nor the flutes of Arcadia weary him; for him there is but one time, the artistic moment; but one law, the law of form; but one land, the land of Beauty—a land removed indeed from the real world and yet more sensuous because more enduring; calm, yet with that calm which dwells in the faces of the Greek statues, the calm which comes not from the rejection but from the absorption of passion, the calm which despair and sorrow cannot disturb but intensify only. And so it comes that he who seems to stand most remote from his age is he who mirrors it best, because he has stripped life of what is accidental and transitory, stripped it of that “mist of familiarity which makes life obscure to us”.

*extract from THE ENGLISH RENAISSANCE OF ART, by Oscar Wilde
first delivered as a lecture at Chickering Hall, New York, January 9, 1882.*

Examples: Web Sites


A Brief Message.com
200 words or less about design.

PREVIOUS
Neologotastiel
by Erin McKean

NEXT
Public Planning for Personalities
by Charlie Suisman

HOME
ABOUT

A COMMERCIAL MESSAGE
Ads via *The Deck*



Design Job Board & Free Portfolio Space for the creative community.

White Is the New White

by Steven Heller
Tue 23 Oct
2007

Remember when white was good and pure, while black was bad and dirty? Then black was beautiful, and later, black matte was too cool for words.

Over the past decade, black became the new white.

Black is the dominant pigment and ultimately cliché. And if American Apparel is any measure, all varieties of colored hues have replaced white, which has been deemed "too white bread" (a synonym for boring). Hey, even white space — that simple gift of the Swiss Moderns — is not as valued as it once was (although this website argues there's a shift

Frankly, anti-white makes me see red!

Recently, I've spent a lot of time in a work environment bathed in unadulterated white. And despite the occasional knee-jerk yearning for just a hint of color, I feel liberated not to be oversaturated with color. Contrary to notion that white is default, a no brainer, white

There Are Also Bad Examples. . .



PDF LaTeX by example

LaTeX 2.09

Objectives

Starting from little or no experience of LaTeX, the examples given below serve as templates from which portable articles, books, slideshows, letters, exams, faxes can be created in PDF format.

Traditionally, users of LaTeX created printable Postscript (ps) or just dvi output; nowadays, when you use a computer in a different place, you may not find available the necessary viewers for these. However, the free pdf viewer [Arjuna](#) (which is widely available) can view a Postscript file, is convenient to generate compact output and then you can directly also hyperlinks, subscripts (text, graphics and even notes in your documents), electronic books, and eDVD media. Also you can convert Postscript graphics into PDF format by inclusion in articles. A viewer can create slideshows. It has an automatic slide-show mode and the LaTeX dvi format is very convenient for presentations by computer projection—or as printed OHP transparencies. However, the new beamer package (cf. below) provides better looking conference slides for computer projection.

In the case of a collection of course documents or a connected series of articles—possibly including some on remote computers, it is convenient to use web-based access to the archived resources, as is in operation with the page you are now reading. Accordingly, the working example of this page is an easily understood template that you can modify to provide access to your own archived materials; it has been designed using elementary raw HTML so it is easily portable. On the other hand, whereas professional web writing facilities (eg. Frontpage, Netscape Composer) are very powerful, they use many hidden or at best obscure procedures and may bury necessary items in undeclared directories, so it is hard to create a stand-alone webpage. Using simple raw HTML is sufficient for most purposes—typically creating and updating a course homepage or carrying a connected set of documents for discussions and presentations at another institution where you are unsure of what is available on the PC you will have to use.

Prerequisites

The following software is commonly used (not all in this order):

- Free pdf reader: [Acrobat Reader](#)
- Free postscript interpreter: [dvips](#)
- Free postscript viewer: [DviView](#)
- Free implementation of LaTeX eg: [TeXLive](#) is best
- Plain text editor, eg: [Notepad](#) or much better the LaTeX adapted: [Emacs](#)

Using the examples—Red text is hyperlinked

Article example

The procedure to create a pdf document using LaTeX is the same in all cases: make a plain text file with the source file using LaTeX commands, in any plain text editor [recommended is [Emacs](#)]. Then run the command `pdflatex arxiv`. If correctly installed, [pdflatex](#) will have a button to click for this operation. The result is creation of a file `arxiv.pdf` and [pdflatex](#) has a button for viewing it. To illustrate with the example here, download the necessary files:

Source files: [http://www.robots.ox.ac.uk/~imr/latex/](#)

Distinction of Typography

Macrotypography

- The big stuff
- Create spacial relationship
- Overall impression of a document

Microtypography

- The little stuff
- Improve readability and appearance of text, justify text
- Reduce the appearance of large inter word spaces (goal: uniform gray value)
- Create more even text edges
- Deals with letters, words, lines, and sections

Macrotypography in \LaTeX

\LaTeX supports macrotypography

- Page layout (margins etc.)
- Paragraph allocation
- Page numbers
- Positioning of floating elements (figures, tables, etc.)

Document can be adjusted to own preferences

- Customize position of floating elements
- Adjustment of page breaks

Handle with care! We are no typographers!

Macrotypography: Floating Elements

Preferencing position of floating elements

```
\begin{figure}[htbp]
```

- [h] [h]ere, else next option
- [t] [t]op of the page, else next option
- [b] [b]ottom of the page, else next option
- [p] collects figures and places them at one [p]age without text, else next option

- Standard: [tbp]
- Force position here: [H] (can cause bad paragraph allocation)

Macrotypography: Page Breaks

Adjustment of page breaks

- According to lecturer's comments on the book *Autonomous land vehicles*: Figures should not disrupt paragraphs.
- After the document is finished, the page breaks might be fine tuned (better try this by changing the size of floating elements).
- Command `\pagebreak[priority]` with $\text{priority} \in \{0, \dots, 4\}$

This would be at the first page. And this would be on the second one.

This would be at the first page.
`\pagebreak[4]` And this would be on the second one.

Macrotypography: Club Lines And Widows

action using his lawyer to draw her into the rain forest, into his territory.

He moved swiftly through the thick fauna, silently but quickly, effortlessly leaping over fallen trees as he made his way toward the outer edges of the jungle. A rhinoceros grunted nearby. Deer scrambled in fear as they caught his scent. Smaller animals scurried out of his way and birds fell quiet at his approach. The monkeys retreated to the higher reaches of the canopy but they, too, remained hushed, not daring to raise his ire as he passed beneath them.

This was his kingdom and he seldom flaunted

lock up for you."

Beck didn't say anything. Neither did Duke. They looked irritated, but they weren't going to object. I kept my hands in my pockets and walked back. Doll turned and led me through the secretarial pen and into the back office. Through another door and into a glass-walled cubicle inside the warehouse itself. I could see a forklift on the warehouse floor and steel racks loaded with rugs. The racks were easily twenty feet high and the rugs were all tightly rolled and tied with string. The cubicle had a personnel door to the outside and a metal desk with a computer on it.

Club line/orphan (Schusterjunge)

The first line of a paragraph appears at the bottom of a page and the remaining text on the next page.

Widow (Hurenkind)

The last line of a paragraph appears at the top of the following page.

Macrotypography: Avoid Club Lines And Widows

- \LaTeX tries to avoid club lines and widows
- Penalty defaults to 150, maximum 10000 (not recommended)
- Trade off between good paragraph spacing and possible club lines/widows
- Increase penalties:

```
\clubpenalty = 2000
```

```
\widowpenalty = 2000
```

```
\displaywidowpenalty = 2000
```


Microtypography in \LaTeX

\LaTeX supports microtypography

- Avoids margin protrusion (or warns of overfull or underfull hbox)
- Ligatures: infinity vs. infinity
- Spacing: After a sentence, the space is larger. Check here.
- Font expansion can be included: use a slightly wider or narrower variant of a font to make inter word spacing more even

Microtypography Comparison I

What I saw was the Count's head coming out from the window. I did not see the face, but I knew the man by the neck and the movement of his back and arms. In any case I could not mistake the hands which I had had some many opportunities of studying. I was at first interested and somewhat amused, for it is wonderful how small a matter will interest and amuse a man when he is a prisoner. But my very feelings changed to repulsion and terror when I saw the whole man slowly emerge from the window and begin to crawl down the castle wall over the dreadful abyss, face down with his cloak spreading out around him like great wings. At first I could not believe my eyes. I thought it was some trick of the moonlight, some weird effect of shadow, but I kept looking, and it could be no delusion. I saw the fingers and toes grasp the corners of the stones, worn clear of the mortar by the stress of years, and by thus using every projection and inequality move downwards with considerable speed, just as a lizard moves along a wall.

What I saw was the Count's head coming out from the window. I did not see the face, but I knew the man by the neck and the movement of his back and arms. In any case I could not mistake the hands which I had had some many opportunities of studying. I was at first interested and somewhat amused, for it is wonderful how small a matter will interest and amuse a man when he is a prisoner. But my very feelings changed to repulsion and terror when I saw the whole man slowly emerge from the window and begin to crawl down the castle wall over the dreadful abyss, face down with his cloak spreading out around him like great wings. At first I could not believe my eyes. I thought it was some trick of the moonlight, some weird effect of shadow, but I kept looking, and it could be no delusion. I saw the fingers and toes grasp the corners of the stones, worn clear of the mortar by the stress of years, and by thus using every projection and inequality move downwards with considerable speed, just as a lizard moves along a wall.

OpenOffice:

- Uneven reading due to different inter word spaces (compare 3rd and last line)
- Similar for MS Word

L^AT_EX (basic):

- More even reading
- Mathematically correct right margin (visually still uneven)

Microtypography Comparison II

What I saw was the Count's head coming out from the window. I did not see the face, but I knew the man by the neck and the movement of his back and arms. In any case I could not mistake the hands which I had had some many opportunities of studying. I was at first interested and somewhat amused, for it is wonderful how small a matter will interest and amuse a man when he is a prisoner. But my very feelings changed to repulsion and terror when I saw the whole man slowly emerge from the window and begin to crawl down the castle wall over the dreadful abyss, face down with his cloak spreading out around him like great wings. At first I could not believe my eyes. I thought it was some trick of the moonlight, some weird effect of shadow, but I kept looking, and it could be no delusion. I saw the fingers and toes grasp the corners of the stones, worn clear of the mortar by the stress of years, and by thus using every projection and inequality move downwards with considerable speed, just as a lizard moves along a wall.

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LaTeX (basic):

- As on the previous slide

LaTeX (with character protrusion/margin kerning):

- Characters fall into the margin to visually equalize it
- Provided by the package `microtype`

Microtypography Help for \LaTeX

Although \LaTeX has sophisticated microtypography functionality, it sometimes needs help!

- Spacing
- Italic correction
- Hyphens and dashes
- Text in math mode
- Overfull and underfull hboxes
- Acronyms

Microtypography: Spacing in \LaTeX I

- No space before punctuation marks

That's wrong !
This is right!

That's wrong !\\
This is right!

- Sentences ending with capitals: \LaTeX expects abbreviation
⇒ inter sentence spacing

at the MIT. As can be
at the MIT. As can be

at the MIT. As can be\\
at the MIT\@. As can be

- Spacing with abbreviations (avoid intersentence spacing):

approx. three hours

approx.\ three hours

- Spacing within abbreviations:

e. g. 2 hours, i. e. 120 minutes

e.\,g.\ 2 hours, i.\,e.\ 120 minutes

Microtypography: Spacing in L^AT_EX II

- Spacing with units:

3 m

```
3\,m
```

- Spacing before references: Avoid line breaks

in section 1

```
in section~\ref{test}
```

- Spacing before citations: Usually also avoid line breaks

see Brooks89

```
see~\cite{Brooks89}
```

OK for short citations like [1]; can, however, make problems for long citations (as above)

Microtypography: Italic Correction

- Avoid letters too close after italic expression:

affair *of* interest

```
affair {\it of} interest
```

affair *of* interest

```
affair {\it of\}/} interest
```

- Not required for `\emph{}` (except in beamer class ☹) and `\textit{}`.

Microtypography: Hyphens and Dashes

Hyphen (Bindestrich):

Mueller-Luedenscheid

Mueller-Luedenscheid

En dash (Halbgeviertstrich):

5–7 November; 30–40 m;
pages 235–349

5--7 November; 30--40\,m; pages
235--349

Robots work – as long as
there is no fault.

Robots work -- as long as there
is no fault.

Em dash (Geviertstrich, only in English):

Robots work—as long as
there is no fault.

Robots work---as long as there
is no fault.

Microtypography: Text in Mathematical Formulae

- Ugly: text rendered as single variables

$$offset = \frac{f_{factor}}{time}$$

```
$offset=\frac{f_{factor}}{time}$
```

- Remedy: Typeset text as `\text` in formulas

$$offset = \frac{f_{factor}}{time}$$

```
$\text{offset}=\frac{f_{\text{factor}}}{\text{time}}$
```

- Alternative (if italic style is desired):

$$offset = \frac{f_{factor}}{time}$$

```
$\textit{offset}=\frac{f_{\textit{factor}}}{\textit{time}}$
```

- Units as non-italic text:

$$v = 0.5 \frac{\text{m}}{\text{s}}$$

```
$v=0.5\,\frac{\text{m}}{\text{s}}$
```

Microtypography: Eqnarray Considered Harmful I

Spacing inconsistency

$$A = B \quad (1)$$

$$A = B \quad (2)$$

$$B = C = D \quad (3)$$

```
\begin{equation}
  A=B
\end{equation}
\begin{eqnarray}
  A&=&B\\
  B&=&C=D
\end{eqnarray}
```

Remedy: use align from the amsmath package

$$A = B \quad (4)$$

$$B = C = D \quad (5)$$

```
\begin{align}
  A&=B\\
  B&=C=D
\end{align}
```

Microtypography: Eqnarray Considered Harmful II

Eqnarray might overwrite equation numbers:

$$A = B + C + D + \text{\texttt{(6)}}$$

```
\begin{eqnarray}
A&=&B+C+D+E
\end{eqnarray}
```

No problem for align:

$$A = B + C + D + E + F \\ (7)$$

```
\begin{align}
A&=B+C+D+E+F
\end{align}
```

Another problem: silence of labels (not presented here)

Microtypography: Overfull/Underfull Hboxes

Warning message: Overfull or underfull hboxes

Margins are violated because \LaTeX failed to adjust the text

What can I do?

- 1 Manual hyphenation hints for unknown words:

`ty\pog\ra\phy`

Don't make things worse: e. g. hyphenation for behavior is correct this way: `be\hav\ior`

- 2 Reformulate your text
- 3 Use flexible spaces:

Here you can see a flexible space: It has an effect.

Here you can see a flexible space: `\hskip 0pt plus 20pt minus 1pt` It has an effect .

Microtypography: Quotation Marks

This is “English”.

This is ‘‘English’’.

Und dies hier ist ein Text
auf „Deutsch”.

Und dies hier ist ein Text auf
,,Deutsch’’.

Microtypography: Large Capitals vs. Small Capitals I

Compare this:

The MIT in the USA
has developed the robot
TUNUTA as answer to
RAVON, the robot of the
TU Kaiserslautern.

The MIT in the USA has developed
the robot TUNUTA as answer to
RAVON, the robot of the TU
Kaiserslautern.

with that:

The MIT in the USA has de-
veloped the robot TUNUTA
as answer to RAVON, the
robot of the TU Kaiser-
slautern.

The `\textsc{mit}` in the `\textsc{usa}`
has developed the robot `\textsc{tunuta}`
as answer to `\textsc{ravon}`, the robot of
the `\textsc{tu}` Kaiserslautern
.

Microtypography: Large Capitals vs. Small Capitals II

Acronyms

- Capitalized abbreviation using initial letters
- Problem: large capitals (Majuskel/Versalien/Großbuchstaben) disturb the impression (uneven gray value)

Solution: small capitals (Kapitälchen)

- Capitals of reduced size: RAVON vs. RAVON
- Maintain gray value of the text
- No inter sentence spacing \@ required (cf. slide 5)
- Problem: no bold and no italic face, therefore not suitable for titles, index, etc.

Conclusion

Macrotypography

- Fortunately, \LaTeX and the appropriate packages handle most issues

Microtypography

- \LaTeX handles most issues
- You have to take care if the meaning cannot automatically determined, e. g.:
 - Spacing
 - Hyphens and dashes
 - Small capitals
- When the document is finished, do the fine tuning, e. g. care about overfull hboxes

Tools

Tools giving hints for optimizing the microtypography

`chktex` Warning 26 in main.tex line 271: You ought to remove spaces in front of punctuation. That's wrong !

`lacheck` "main.tex", line 271: Whitespace before punctuation mark in " !"

- Find hidden errors, e. g. in formulas
- Can have problems with tikz, pstricks, lstlistings, etc.

Sources

- Lecturer's annotations of the book *Autonomous land vehicles*
- Better Typography (Marc Boulton) http://issuu.com/paulavieyro/docs/beter_thipography
- Wikipedia <http://en.wikipedia.org/wiki/Typography>
- Stuart's Soliloquy to the void: Microtypography
<http://hstuart.dk/2007/11/27/microtypography/>
- TeleRead <http://www.teleread.org/2009/05/05/kindle-page-layout-and-typography/>
- Avian's Blog <http://www.tablix.org/~avian/blog/archives/2007/09/>
- Avoid eqnarray! http://www.imf.au.dk/system/latex/artikler/avoid_eqnarray/avoid_eqnarray.pdf