Typewriter Days

A Bygone Era
That Won'T Go Away
Or
Document Layout
Using a Computer

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My course Web site includes a section on writing with some general tips on formatting. There, I have put down some formatting requirements, a sample document, a template to download and use, as well as typographical advice. Grudgingly, my students tried to follow those rules and used the *darn* template.

At the end of every semester, some students would ask me why I had all those rules, and typographical requirements like "no underlining" or "single space after a period." Although explained in the Web document, I would repeat my reasons for insisting on those rules and tell them how we carried these rules over from typewriter days. After several such inquiries, I realized that I had to provide a more detailed explanation of these principles and offer them something more substantive than a couple of Web pages.

A few years ago, when I was visiting and teaching in Istanbul, I ran a seminar on technology for the staff and teachers of an educational foundation. They requested two sessions, and left the topic selection mostly to me. I took that opportunity and prepared most of this document as a handout (and even translated it into Turkish.) I am not sure if the attendants of those sessions remember, let alone use the material today, but I am very glad that I chose this as one of the topics, since it provided the catalyst to put what had been floating in my head into writing.

Those of us, who used typewriters and learned the rules of spacing, punctuation, etc., need to forget many things learned in those days. It is not important only for our documents, but also to teach our students a better way of creating documents in the age of computers. As they learn from the people who learned how to format documents in the typewriter days, they perpetuate the bad habits we find difficult to shake.

Let's face it, the typewriter days are gone. Let us accept it and move on.

INTRODUCTION

Most documents created on a computer using word processing software look less than optimal, due primarily to old habits leftover from typewriter days. Unlearning old habits is too difficult for most users as they continue to produce poorly formatted documents and teach their ways the next generation.

Another reason for less than optimum-looking documents is a general lack of understanding of typography. In the old days, when a need arose to produce something better than that of a typewriter output, a printing house handled the printing. There, experienced designers and typesetters chose the typeface, its size, leading, weight, justification, and so on and professionally produced that document. Today, anyone with a PC has the same or better production capabilities, albeit without the necessary knowledge of typesetting and typography. This document explores some common problems in creating properly formatted documents on a computer, presents ways to unlearn old habits, and develop better ones.

The road to creating well formatted documents lies in knowing the simplified rules of good layout, understanding the nature and use of type, and some formatting and typesetting conventions. These are not hard rules to learn or

apply. The biggest challenge lies in forgetting what we learned (and continue to teach) in the typewriter days.

Elements of page layout

Good layout that is pleasing and easy to read is neither an accident nor magic. By following some simple rules, anyone can create good looking, if not outright professional documents. These rules are:

- Alignment
- Variation
- Association

Alignment

Look at a book or a magazine page that you like. Observe how the elements of the page relate to each other in terms of alignment. Positioning the parts of a page and a document aligned on clear lines creates a powerful layout. Leaving dangling elements with mixed alignments weakens the look of a page. A designer can create extremely attractive pages with unusual layouts. They may use diagonals, curves, even geometric shapes to achieve their design objectives. Those of us who have little, if any training in layout should stick to simpler and easier to use alignments that create powerful lines. What could be simpler than vertical and horizontal straight lines.

Most reports have left-aligned body text. Using this edge naturally created by what we write is the simplest, perhaps the best alignment for most users. The general rule to remember is not to mix alignments; pick one and stick with it. The rule of thumb is "one document, one alignment."

Our desire to create something different leads us to change the alignment of some page elements and the first thing that comes to mind is centering some text. This easily done change shows that the user can do something different from simple text entry. However, center alignment is quite weak and difficult to use since other similar parts of the page must align with the imaginary alignment line at the center as well. For instance, if we center the first heading of a report, and follow the "one document, one alignment" rule, we need to center all other headings too. This creates a rather boring legal document look. This is not to say that we cannot and must not use centered text. It is very suitable for formal wedding invitations and opera announcements, not to mention official government publications or court reports.

Left Alignment

This text and its heading are left-aligned. It looks crisp and clean, and the flow of reading is naturally easy.

Center Alignment

This text and its heading are center-aligned. Note how difficult it is to read the heading and then switch to the text that follows it.

Association

Elements that are related to each other should be placed close to each other. This is particularly important for headings and the text that follow. Never separate a heading from the following associated text. Many users habitually press the "Enter" key twice after a heading with the erroneous notion that this makes the heading more noticeable. One linefeed after every heading will keep the heading and the text that follows associated with each other.

This rule also applies to figures, graphics and other illustrations that have a title. We must be careful not to separate images and their titles too much. Otherwise it may look like a separate element distinct from the image it is supposed to represent.

A disassociated heading

Too much space separates the heading that identifies this paragraph from the text that follows. The visual link is broken. Yet, many users have the habit of using an extra blank line between a heading and the text that follows it with the intention

of making the heading to really stand out. What makes the heading stand out is not the separation but a properly selected and suitably sized font.

A properly associated heading

This heading visually belongs with this text. It also looks more pleasing since it forms a whole with this text that follows. The two are associated with each other.

Variation

Variation makes certain parts become more noticeable due to the tension it creates. Typically, this is achieved by changing the type, weight, slant, or color of the type. In order for the effect to be noticeable, the selected fonts should be substantially different. As a rule, use a sans-serif font (like Arial, Futura, or Humanist) with a serif font (like Times New Roman, Century Schoolbook, or Charter.)

The headings in this document, set in Avant Garde Medium, provide enough variation from the body text. This simple change separates the headings and the body text, set in Charter BT, with ease.

Rules of Typography

The switch from the old fashioned typewriter to the modern personal computer has happened on practically every desk. However, what we have learned from the typewriter usage still lingers on. Here, I will present some commonly misapplied typing habits and try to explain why and how we should make the switch to the modern day tools.

Selecting and Using Fonts

By far, the most frequently used typefaces among computer users are probably Times New Roman and Arial. This unfortunate selection is not due to their outstanding readability or their graceful lines. In the early days of Windows 1, 2, and 3, (yes, there were times when we did not use Windows 9x) most likely due to licensing restrictions, Microsoft included only a precious few type faces with its operating system. The two regular typefaces included with Windows 3.x were Times New Roman and Arial. Both fonts had been designed to conform to the TrueType standard developed by Microsoft. True to "old habits die hard" custom, users stuck with these fonts even after Microsoft began distributing substantially more fonts, and many major application software vendors bundled literally hundreds of different typefaces. Most applications select Times New Roman and

Arial as their default typefaces because of the lack of other fonts in earlier versions of Windows and users are reluctant to change them as if to avoid violating some unwritten rule.

In our daily lives, we may spend extensive time trying to find a suitable piece of clothing to match with other pieces of our wardrobe. Yet, in creating documents, we are quite content with the default choice that Microsoft and other software vendors make for us. This is akin to wearing a shirt that someone who works at Sears selected and mailed to you by, regardless of its color, style, or even size.

Typography, the art of creating and using type, tries to create a different look with a multitude of typefaces. Although they may look similar at first, a careful review of the letters, their ascenders and descenders and other attributes reveal significant differences even among similar looking typefaces. They may be elegant, modern, fun, upbeat, formal, transitional, and so on. We should try to select a typeface that contributes to conveying a desired corporate or personal image.

The purpose of use is also important in the selection of a typeface. There are two simple, but important issues in selecting type: Ease of recognition and ease of readability.

Ease of recognition

Some text needs to be recognized quickly. Style, size and other attributes of a typeface may aid or hinder recognition of short length of text. This includes street signs, newspaper headlines, as well as report headings. Readers need to recognize these parts quickly, almost without conscious reading. Research studies indicate that sans-serif type is easier to recognize than serif type. So, report headings will likely benefit from using typefaces like Futura, Humanist, or other sans-serif fonts.

Ease of reading

Reports, like books and newspapers, contain long passages of text. Here, choosing the right type will make reading long passages and pages of text easier. Do not confuse this with ease of recognition or legibility, which is important for short lengths of text like headings. Again, studies indicate that a serif font is easier for reading long passages of text. Although the real reason is still under investigation, typographers speculate that the small, thin extensions of serif type faces lead the eye from one letter to the next, making easier connections between letters and thus, making reading easier. The natural conclusion is that for long passages of text like the body of reports we should use a serif font like Bodoni, Galiard, or Garamond to name a few. This document uses Charter.

Another issue related to the font selection is the font size. Not all 12-point type will look the same because there is another dimension that many users do not

know or use: the x-height. The x-height of a typeface is the height of its lowercase letter x. Some fonts have a greater x-height that makes them appear larger when set in the same point size with others. Choose the point size to make the printed line appear "normal" whatever that may mean. While deciding on this point, consider the audience who will read the document. When writing a report that the elderly will see, using a small size will render the report difficult to read. For this purpose, select a font with a greater x-height since they have a tendency to make the text seem larger and easier to read. You may even use larger size to further help ease of reading. Take a look at the following lines, all set to 12-point type using different typefaces:

This is 12-point Galiard   Quick brown fox jumps over the lazy dog

This is 12-point Times New Roman   Quick brown fox jumps over the lazy dog

This is 12-point Bauer Bodoni BT   Quick brown fox jumps over the lazy dog

This is 12-point Georgia   **Quick brown fox jumps over the** lazy dog

This is 12-point Perpetua   Quick brown fox jumps over the lazy dog

They are all 12-point lines, honestly, no kidding. Even the same font from different typefounderies may appear different in size. The following two lines are

set in Eras Medium in 12-point. Note that the first line (type from Bitstream) is shorter than the second line (type from ITC).

Eras is a sans-serif font with some stress (Bitstream)

Eras is a sans-serif font with some stress (ITC)

Next time someone tells you to "use a normal size, 12-point font" show this document to him or her.

Underlining

Professionally typeset documents like books, magazines, and others do not use underlining since it is not a typographical element. The idea of underlining text comes from the symbols copy editor's use when editing manuscripts. When a copy editor underlines a length of text, they indicate that the underlined text must be set in italics. In turn, the typesetter changes that part of the text and sets it in italics. In the typewriter days, our primary personal typographical device did not have an additional italic font, underlining made eminent sense to replicate the copy editor's mark and underlining was born in the typewriter era. Now you know where underlining comes from. There may be a specific need, aesthetic or other, for using a line below a text line. Then a "rule" will serve this purpose with more flexibility in length, thickness, and distance from the text.

Today, there is an italic version of practically every font. Those that do not have an italic version are not suitable where italics are necessary anyway. These typefaces are not for general use where italics are commonplace. By the way, do not confuse oblique type with italic. Oblique type is the result of slanting the Roman version (upright) of the type whereas a true italic form is a design from scratch. Remember the rule, do not underline, italicize.

```
This is monospaced courier.  Underlining was the only
choice.
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This is proportional-spaced type. Using *italic text* is the preferred choice instead. Underlining looks <u>glaringly</u> strange. (Note the line going through the descenders in *glaringly*.)

Two spaces after a period

A single space after a period, with the monospace type of a typewriter, did not create a sufficient visual break between two sentences. Because of this, it was customary to use two spaces after a period. Now, in the age of proportional space fonts, a single space after a period is sufficient to create the needed separation. Professionally typeset books and magazines use only a single space after a period, yet they are perfectly legible.

```
This is monospaced courier. As you see, single space after
the period is not enough to visually break the previous
sentence.  So, we used to use two spaces, as before this
sentence.
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This is proportional spaced type. A single space after the period creates enough
visual separation and this use is desirable.

All caps

Studies indicate that text that uses all uppercase letters is more difficult to read
than the same text set in upper-lower case combination. Apparently, we recognize
the letters by their upper half and words, by the shape their outlines crate. The
tops of most uppercase letters do not offer enough clues as to the shape of the
letters and outlines of most words set in all caps are almost perfect rectangles.
Consequently, the words that are set in all capital letters do not generate different
outlines for us to recognize the words quickly. As a rule of thumb, avoid all caps
except in rare and appropriate instances, and even then, consider using "small
caps" which is a variant of some typefaces. Avoid using decorative typefaces with
all caps since they exaggerate and aggravate the problem. See the examples
below.

ALL CAPS HEADING SET IN SMALL CAPS, NOT TOO BAD

THIS IS NOT GOOD PRACTICE

THIS IS EVEN WORSE

THIS IS UNBEARABLE (can you even read this?)

A fussy user will even change the size of acronyms set in all caps in a sentence since the large size of uppercase letters will draw too much attention to the acronym. For example, in this sentence a corporate name, IBM, will appear twice to show the effect of making IBM smaller and more suitable to use in typeset documents. If you look carefully, you will see this practice in magazines and books. It takes very little time but makes the document look so much better and professional.

Using all caps on the Internet, like in e-mail or on Web pages, has an additional meaning that most readers do not appreciate. Text written in all caps on the Internet means the author is shouting these words. The recipient of the message or the reader of a Web page does not appreciate someone shouting at them from far away places. So, LISTEN TO ME AND DON'T USE ALL CAPS, YOU HEAR! Now, did you like that?

Full justification

In an effort to mimic the nicely set book pages, many users attempt to justify the text of their report on both sides. Although the attempt may be noble, its implementation is very difficult without producing unusual gaps between words. Not only does this make reading difficult, but also creates "white rivers" running through the page. Full justification, in order to appear properly, requires proper type size for the line length, use of hyphenation, and software that can distribute the extra space to create justification invisibly between words and letters. Use left-justified text unless you are willing to go through the above steps. If you really have your heart set on using full justification, find and read advice from experts on calculating the type size for the line length for a better fit. Compare the two blocks of text below for word spacing and ease of reading.

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Using the space bar to align text

Remember again that typewriters had monospace type where all the characters occupy the same amount of space, including the space occupied (or not occupied, skipped) by the spacebar character. It did not matter then if you pressed the space bar to align text. Not only did this work but it was often the only way to achieve the desired results.

Now, if we continue the same method of aligning text using the spacebar, we will be very frustrated to say the least. Different fonts and different sizes of fonts will have different widths for the space character. Since the content of every line will likely be different and have different letter sets, aligning elements in a columnar fashion using the space bar is almost impossible. Even if we succeed in lining up text using the space bar, all that work may be entirely disturbed if we add, change or remove some text from one of the lines that are part of the alignment effort.

Use tabs, left, right, center, and decimal to align columnar text as needed. If the space between the tab stops turns out to be insufficient, one adjustment in the tab settings will snap everything to attention.

Align numbered paragraphs using indents (sometimes automatically done) and double-indent block quotes on both sides. Terminating every line and starting the next one with a tab is very awkward to achieve these results. Any change in any of the lines may easily throw the entire section off-kilter.

Widow and orphan control

Leaving the first line of a paragraph on the last line of a page while the rest of the paragraph continues on the next page creates a widow. When a paragraph ends with its last line on the following page it is an orphan. There are other, more precise and detailed definitions of these concepts but for general-purpose use, the ones presented above will be sufficient. Most modern word processing software has several ways of preventing orphans and widows. Fussy users may even rewrite a part of a paragraph to prevent unusual spacing at the bottom of pages.

Our desire to create something different leads us to change the alignment of some page elements and the first thing that comes to mind is centering. It is easily done and it shows that the user can do something different.

This creates a rather boring legal

something different

This creates a rather boring legal document look. This is not to say that we cannot use it for some creative effect.

A widow line at the bottom

An orphan line at the top

Many reports contain tabular information. The common practice is to create the table in a spreadsheet program and copy and paste it to the document, or create a table using the word processing software with all the lines intact, inside and out. Lines in tables are there to guide our eyes from one cell to the next, horizontally or vertically. Unless the table is a large one, which may be better presented in another way, do not use vertical lines in tables so as not to disrupt the movement of the eye from left to right. Edward Tufte recommends using "minimum non-data ink" for charts and graphs.[1] The same principle applies to tables very nicely. Therefore, I recommend the same minimum ink principle when creating and formatting tables.

Font selection for tables

When formatting the table, set the row and column headings in different type to add contrast. Remembering the concepts of ease of recognition and ease of

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1. Edward R. Tufte, *The Visual Display of Quantitative Information*, (Cheshire: Graphic press, 1983) 93-105.

reading, we may set the headings in a sans-serif font and the cell information in a serif type, especially for numeral information. Setting the table content, including the body and the headings, in slightly smaller type will make both reading easier and page look more natural since numerals appear larger than letters. A typical table created and formatted automatically may look like the following phone list.

Name	Phone number
Cemal Ekin	401-865-2660
John Maltoon	401-234-5678
Jane Holoy	216-339-9898

The modified and improved table will look better and be easier to read

Name	Phone number
Cemal Ekin	401-865-2660
John Maltoon	401-234-5678
Jane Holoy	216-339-9898

Read the original table, then the modified one. Do you find moving your eyes in the first one more difficult as they move from the name to the phone number? The close proximity of the columns in the second one makes it easier to relate the columnar data to each other. However, there are too many lines in and around both of these tables and they interfere with the fluid movement of the eye.

Use lines sparingly in tables

Compare the ease of reading the table below to those above. The lack of vertical lines allows for smooth movement of the eye in the new table and the missing horizontal lines eliminate the clutter. I find this table much easier to read although its contents are set in smaller type.

Name	Phone number
Cemal Ekin	401-865-2660
John Maltoon	401-234-5678
Jane Holoy	216-339-9898

Formatting numerical content

When a table contains numbers, they should be right- or decimal-aligned depending on the content. Below is an example of a poorly constructed table of

regional sales figure comparisons. The cells are unnecessarily large, numbers do not line up, and the lines create extra clutter. Additionally, the font is unnecessarily large, making reading even more difficult.

Region	Team 1	Team 2	Team 3
North	12000	24000	18000
South	9000	NA	23500
East	12750	23457	5000
West	43678	7865	32978
Total	77429	31322	79481

To improve the table, format the text, and numbers, adjust the row spacing to reduce unnecessary spaces above and below each entry, and reduce extra column width. Here is the same table with these improvements. The type size is 9-points for the title row and 10-points for the rest of the table. The inside row margins have been reduced to 1-point above and below the text and column with is set at 1 inch.

Region	Team 1	Team 2	Team 3
North	12,000	24,000	18,000
South	9,000	NA	23,500
East	12,750	23,457	5,000
West	43,678	7,865	32,978
Total	77,429	31,322	79,481

The lines all over the table still interfere with the ease of reading. After minimizing the lines, the table looks much cleaner and it is much easier to read.

Region	Team 1	Team 2	Team 3
North	12,000	24,000	18,000
South	9,000	NA	23,500
East	12,750	23,457	5,000
West	43,678	7,865	32,978
Total	77,429	31,322	79,481

If there are more columns that may make reading numbers line-by-line difficult, we may add horizontal lines or shading to aid reading.

Region	Team 1	Team 2	Team 3
North	12,000	24,000	18,000
South	9,000	NA	23,500
East	12,750	23,457	5,000
West	43,678	7,865	32,978
Total	77,429	31,322	79,481