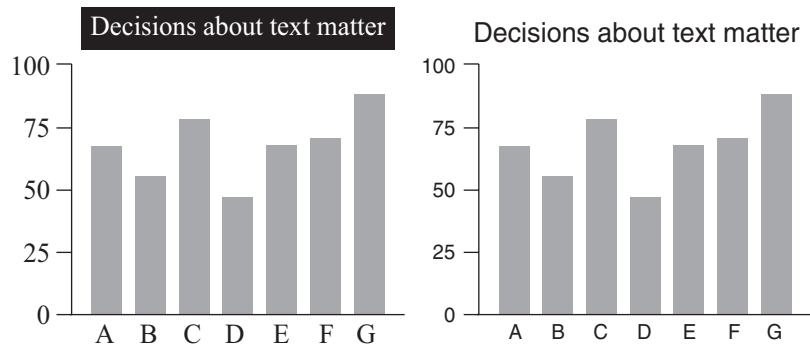# 5

Typography

Typography is the art of selecting and arranging characters to make language visible. It is hard to remember that before the 1980s, most people were limited to using one or two fonts on typewriters for all of their decisions about type. After the debut of the first Apple Macintosh, anyone could select from dozens of fonts, each with their own characteristics and personality, and make decisions about font size, line spacing, and alignment. The design decisions we make about type are tremendously important—so much so that they can ultimately affect the meaning of the words themselves.
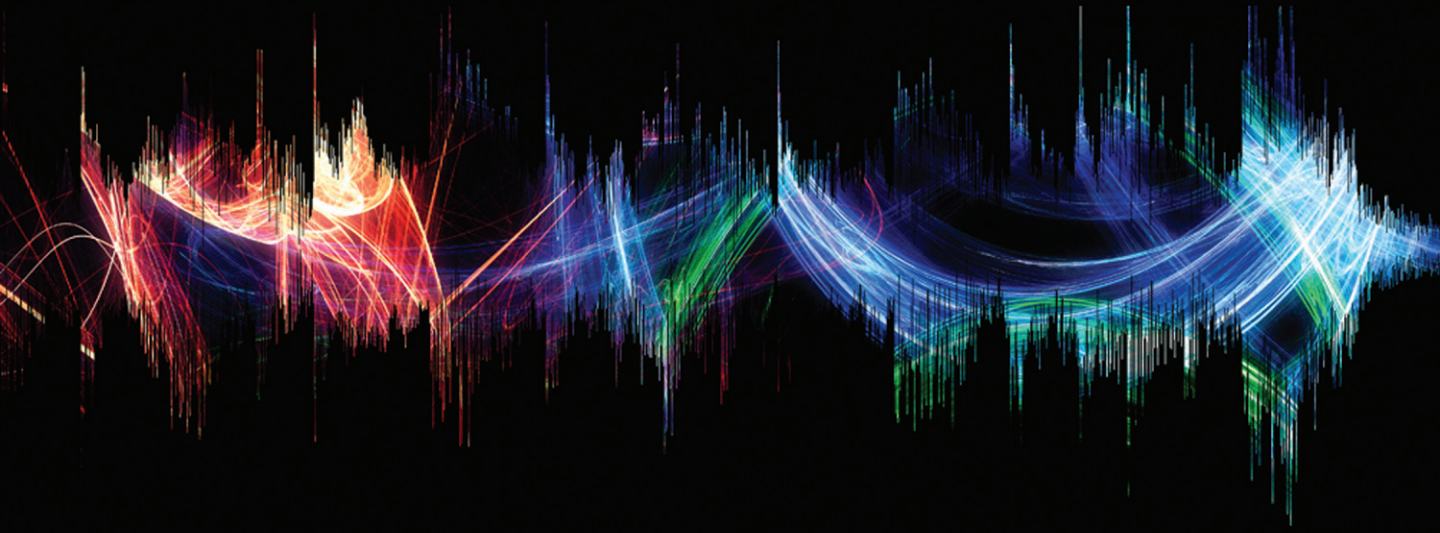
Decisions about Text Matter

We see text so often in our everyday lives that we forget that every instance of text involves choices: choices about font, character size, casing, typesetting, etc. Decisions about typography matter because they affect the legibility, meaning, and tone of the language we use.

Just as you can speak the same word in many different ways, the way you write a word can convey emotion and attitude in addition to the meaning of the word itself.

Dissection of a Font

What are the attributes of a font that confer its personality? Fonts are commonly classified as having serifs (slight projections finishing off a stroke of a letter) or not having serifs (called a *sans serif* font).

Besides the presence or absence of serifs, each font has its own height (distance from baseline to cap height), weight (thickness of lines), and counters (shape of the negative space within letters).
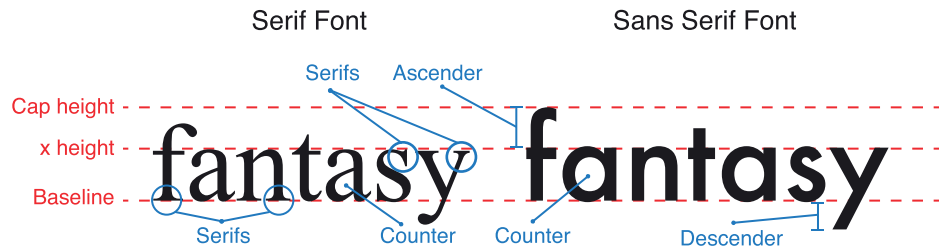
Note how different the word "fantasy" appears in these two different fonts. The serif font (Times New Roman) has a smaller cap height and line width than the sans serif font (Futura). Also notice the difference in counters in the letter "a".

Personality of Fonts

Fonts convey tone and personality. Knowing which font to use in a presentation depends on the attitude you wish to convey, as well as which will be most legible in your presentation format.

Serif fonts are good for smaller character sizes (10–14 pts) in multiple lines of type. The serifs guide the letters into one another so it is easier for the reader to follow one line at a time. Most books and magazines are written in a serif font. In general, these fonts are best for manuscripts and other written presentations.

Font	Personality
Garamond	classic, refined
Georgia	elegant, mature
Times New Roman	professional, traditional

Sans serif fonts are usually perceived as simple or pure. They are easier to see from a distance, as in billboards or theater marquees. These fonts are usually best for slide and poster presentations in which an audience must be able to read text from across a room.

Font	Personality
Calibri	formal, neutral
Century Gothic	grand, optimistic
Helvetica	simple, pure, contemporary

Some sans serif fonts convey a bit more personality than others. They are more playful and can make a presentation seem less standard or routine.

Font	Personality
Comic Sans	silly, fun
Gill Sans	warm, friendly
Myriad Pro	jovial, friendly, casual

A word of caution about **Comic Sans**

Comic Sans is one of the most popular typefaces used in slide shows and poster presentations. The people who use it feel that it adds a lighthearted, jovial tone to a presentation. However, this can also be a problem. Comic Sans is conspicuously playful in a way that can distract from a message and make a presenter come across as trying too hard to be fun. In fact, many audience members think that Comic Sans is incredibly tacky, like wearing a Mickey Mouse tie to a business meeting. If you want to strike a more lighthearted tone that isn't as noticeable, try using another sans serif font like Gill Sans or Myriad Pro. These are more friendly than traditional fonts but are less overt (and detested by some) than Comic Sans.

Non-proportional (also called **"monospaced"**) **fonts** are typefaces in which each character has the same width. This is in contrast to most typefaces, in which letters like "m" and "w" have larger widths than "i" or "l." Non-proportional typefaces were originally designed for typewriters, which could only move the same distance for any letter typed. Nowadays they are great for writing letters in a sequence, such as sequences of DNA, amino acids, or computer code.

Font	Personality
Courier	retro, nerdy
Letter Gothic	simple, elementary
Lucida Sans Typewriter	informal, quirky

Specialty fonts convey a lot of personality. They are ideal during moments when you want to conspicuously capture an audience's attention and convey an attitude. However, they can easily overshadow the message of a presentation. Therefore, they are best used in isolation, such as in title slides, flyers, or when emphasizing a major take-home point. Usually these fonts are illegible at small sizes and look best in sizes 30 pts and above.

ADVENTURE

PRINCETOWN LET

The New Yorker

Sizing Up a Font

A common misconception is that the size of a font is the distance from the bottom to the top of a character. In reality, a font size is the height of an imaginary metal block as it would appear in an old-fashioned typewriter. Even in the modern computer era, a font size is the height of the assumed equivalent of the block.

Computers specify the size of a font in "points." A point is defined as one-twelfth of a pica, which itself is about one-sixth of an inch.

1 inch

1 pica

1 point

Because the point size is the height of an imaginary block in an old-fashioned typewriter and not the height of the character itself, the only way to know exactly how large a font will appear in a particular point-size is to try it!

All of these letters are written in the same 45 point font size. The fonts, from left to right, are Gabriola, Calibri, Times New Roman, Helvetica, Futura, and Impact.

Casing

Casing refers to the degree to which you use capitalized letters. In an **ALL-UPPERCASE** format, every single letter is capitalized. This adds emphasis and weight to a title, but can be difficult to read unless the letters are very large. In a **Title Case** format, all words are capitalized except for certain subsets of words such as articles, prepositions, conjunctions, and forms of "to be." This is the format used most often for titles in American English, such as the titles of books and movies. In a **Sentence case** format, only the first letter of the first word is capitalized, along with proper nouns. This format is how most text is written (sentences you find in papers, books, magazines, etc.). Finally, in an **all-lower-case** format, no capitalization is used.

```
I LIKE TO EAT CHOCOLATES AT BURROW'S CAFE    Uppercase
I Like to Eat Chocolates at Burrow's Cafe    Title Case
I like to eat chocolates at Burrow's Cafe    Sentence Case
i like to eat chocolates at burrow's cafe    Lowercase
```

Considerations for different casing styles in various presentation media are described throughout the book, but certain guidelines apply. In general, it is usually best to avoid the all-uppercase format unless you use few words and the letters are very large (for example, subheadings on a poster). Title case is best for major heading titles, while sentence case is best for the titles of figures or figure legends.

Sometimes a scientific word needs to be in all-uppercase letters. If the word is long, it can often visually overpower a sentence. In these circumstances, try reducing the font size of the uppercase word by 1–2 pts to make the sentence appear more balanced.
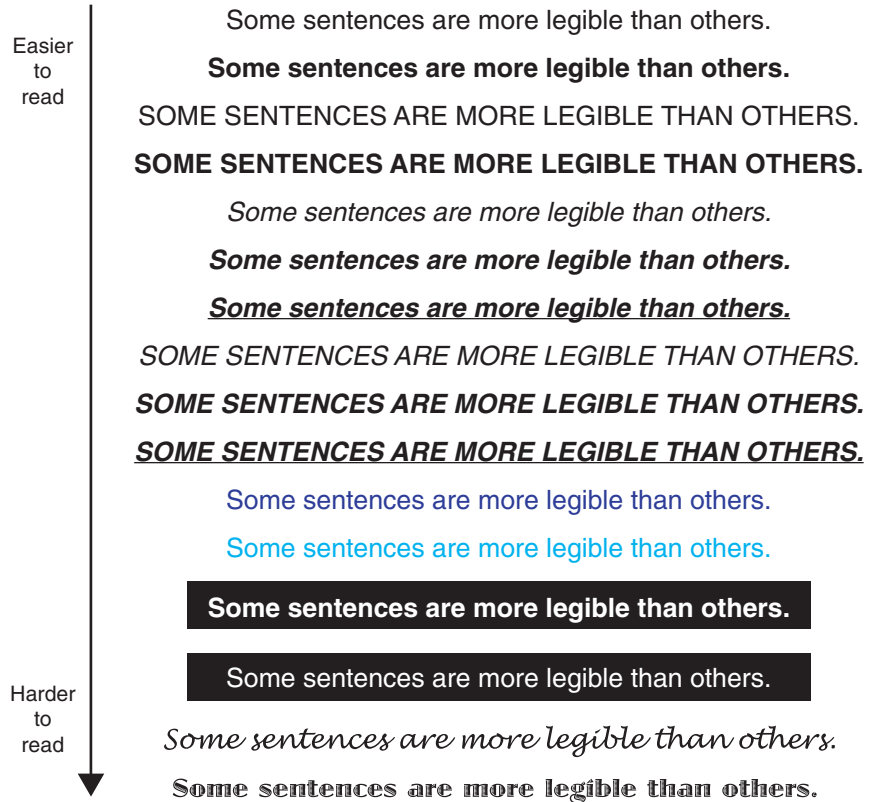
We characterized the role of CMTRPB-3 in cognitive enhancement.

We characterized the role of CMTRPB-3 in cognitive enhancement.

In the top sentence, the name of the compound in all caps, CMTRPB-3, is large and seems to overpower the sentence. In the bottom sentence, the name is reduced in size by two pts relative to the other words and the sentence seems more balanced.

Legibility

Each decision you make about type, including casing (uppercase versus lower-case), style (bold, italics, etc.), size, underlining, and color, will affect the legibility of your sentences. In general, don't use all caps. Use bold or italics only to emphasize a specific word but not to stylize an entire sentence. Don't choose colors that are hard to see or fonts that are hard to read. When designing a presentation it's fun to experiment with the available options, but in the end always choose text that is highly legible unless you have a good reason not to do so.

Easier to read

Some sentences are more legible than others.

Some sentences are more legible than others.

SOME SENTENCES ARE MORE LEGIBLE THAN OTHERS.

SOME SENTENCES ARE MORE LEGIBLE THAN OTHERS.

Some sentences are more legible than others.

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Some sentences are more legible than others.

Some sentences are more legible than others.

Harder to read

Typesetting

Typesetting refers to how characters are arranged together in a word, in a sentence, or on a page. Most people never consider changing the typesetting defaults on their computers, but sometimes changing the way words or blocks of text appear can have a powerful influence on the tone of a presentation.


**Before**   **After**

Varying the tracking (spacing) between characters can enhance the meaning of a word. Increasing the tracking makes words seem lighter and spacious; decreasing the tracking makes words seem tighter and more compact.

Changing the font height or size for specific words can enhance the meaning of those words. You can often convey the emotion of a word by literally changing how tall or big (or short and small) it appears.
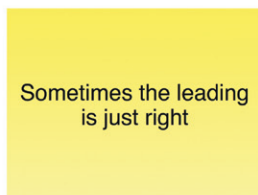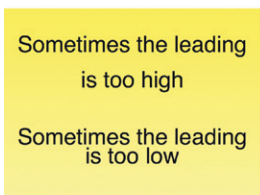
Leading (pronounced "led-ing") is the spacing between lines of text. Some fonts naturally have a default leading that can seem too high or low. Usually a leading that is 2 pts higher than the font size is ideal, but it's ultimately up to you and what you think looks best.
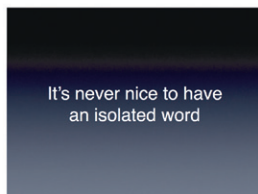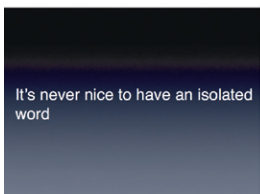
Try to avoid isolated words. Sometimes a single word at the end of a sentence can seem to exist in isolation by itself. Try resizing your lines so that no words are left alone by themselves.
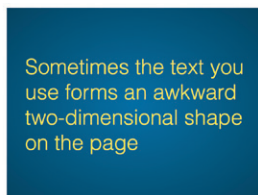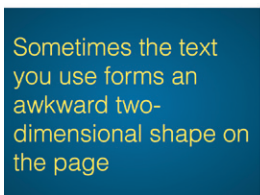
Typeset blocks of text so they form solid shapes. Arranging text into block-like shapes makes your text seem more tightly organized and easier to read compared to the random shapes that can form due to the lengths of words that fit on different lines.

Bullets

Bullets are a great way to group items into a list or sequence. Like any other visual element, their use should incorporate some simple design principles to increase clarity and communication.

Before   After

Never use a single bullet. Bullets are for lists. If you are only going to list one bullet item, just group it with the rest of the text.

Don't write wordy bullet items. The eye has a hard time following bullets after about three lines.

Increase the line space between bulleted items. This helps the audience visualize the separation between different bullet items.

Indent the text on your bullets. This not only makes your list look polished and professional but also helps the audience differentiate between different bullet items.

Before | After

Use numbers when you want to show a sequence and a symbol when the sequence is arbitrary.

Some Other Advice about using Bullets:

- Keep your bullet list brief. Try not to include more than four to six items.
- Try starting each bullet item with an active verb.
- Be consistent throughout your entire bullet list in the verb tense that you use (past, present, or future; active or passive).
- Be consistent about whether your bullets end with punctuation.
- Keep your bullet style simple. Dots are much better than any of the alternatives.

Good bullet: ●

Potentially distracting bullet: ■ ▶ ➡

Annoying bullet: ▬ ○ ✓

Numbers

1 I 1 1

When choosing fonts, be mindful about how your numbers appear. For example, the number one looks like an obvious 1 in some fonts, while in others it can look like the letter l.

Calibri	Century Gothic	Comic Sans	Courier	Garamond	Georgia	Gill Sans	Helvetica	Myriad Pro	Times New Roman
0	0	0	0	0	o	0	0	0	0
1	l	1	1	1	1	l	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

In figures, numbers in sans serif fonts are always the most legible. When in doubt, use Helvetica. It's always a good choice.
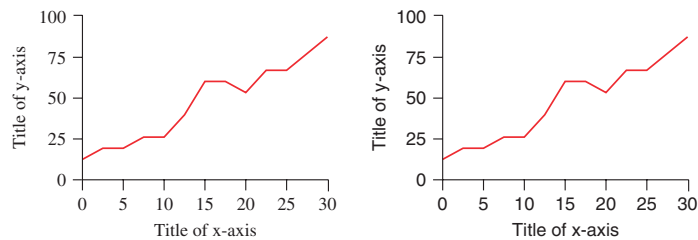
The graph on the left uses Times New Roman and the graph on the right uses Helvetica. Which do you find most legible? Which looks most professional?

Make sure that superscript or subscript numbers are legible. Sometimes, depending on the font, it is best to change the font size of superscript or subscript characters so that the numbers become easier to read.

$$1 \times 10^4 = 10^2 \times 10^2 \qquad 1 \times 10^4 = 10^2 \times 10^2$$

The equation on the left was written using the default Helvetica settings in Microsoft Word. In the equation on the right, the superscript numbers are a bit more legible because the font size was increased by 1 pt. and the superscript settings were changed to raise the numbers by 1 pt.

Summary: Don'ts and Dos

Don't ignore decisions about typography when designing a presentation.
Do deliberately make decisions that increase the legibility and clarity of your text.

Don't ignore the inherent personalities of fonts.
Do choose fonts in consideration of your presentation format and the tone you want to convey.

Don't assume that the default settings in your software ensure maximum legibility.
Do visually inspect all of your choices about text and manually change settings that aren't optimal.

Don't let your paragraphs form awkward shapes in a slide or poster presentation.
Do typeset blocks of text and prevent "dangling" words.

Don't use single bullets or ignore bullet indentations.
Do make your bullet list look crisp and professional by typesetting the entire list.