



ANATOMY OF A TYPEFACE

Lesson 3

Typefaces come in all shapes and forms. Serif and sans-serif are the two main groups but each consists of numerous styles. Old style, transitional, neoclassical, slab, clarendon and glyptic for serified typefaces; grotesque, square, humanistic and geometric for the sans serifs. Exploring these reminds me of space exploration. A vast amount of typefaces, each different from the other, each unique, each special. Just like stars and planets, despite their uniqueness, all typefaces have something in common—their anatomy. No matter how special or unique their style is, all typefaces share most of their main features. Looking at typefaces is just like gazing at the night sky and looking at the stars. Nothing special if you don't know what you're looking at but very interesting if you know where to look and recognizing unique features that define the typefaces (or stars).

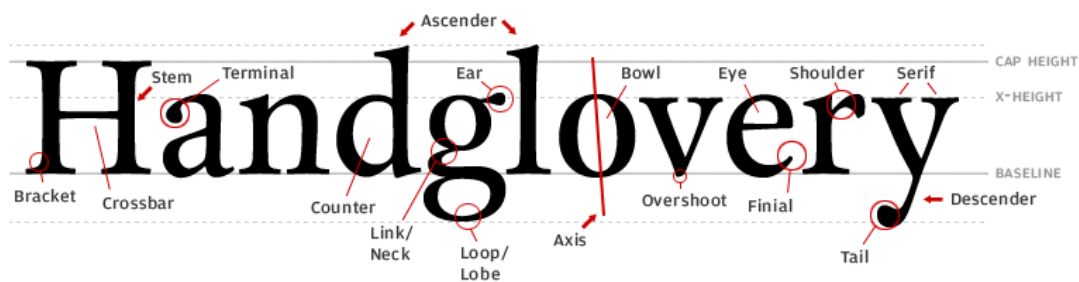


Figure 17: Anatomy of a typeface

Let's look at a few main features that will help you gaze the sky a bit better. We don't need to know all the details so we'll cover the most basic features. Ascenders and descenders are the most noticeable. They define the shapes of letters and they define the letters themselves. Ascenders are the parts of letters that lie beyond the x-height line and the descenders are the parts that lie below the baseline. Cap height marks the most upper part of the capital letters. Notice that the ascenders go beyond that line. Also notice how some letters go slightly beyond the baseline and the x-height line. Take a look at the "o" and

“e” in the figure x. Type designers do that to make the letters optically balanced. A more rounded letter needs to be a bit larger to seem balanced with the other larger and less round letters.

Type colour & weight

I mentioned type colour in the previous lesson already. If you remember, I wrote that in typography by type colour we don't mean actual colour. We mean how heavy a black typeface looks like on a white background. Let's do a quick test. We have two typefaces: Merriweather and Georgia. Both are beautiful serified typefaces. Let's set them to a size of 16px, apply a dark grey colour and put them on a white background. Let's put them side by side so we can compare them easily.

Merriweather, 16/26

Garamond worked as an engraver of punches, the masters used to stamp matrices, the moulds used to cast metal type. He worked in the tradition of what is now called old-style serif letter design, that produced letters with a relatively organic structure resembling handwriting with a pen but with a slightly more structured and upright design. Although Garamond himself remains considered an eminent figure in French printing of the sixteenth century, historical research over the last century has increasingly placed

Georgia, 16/24

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Figure 18: Paragraphs set in Merriweather and Georgia side-by-side.

Spend a few moments observing the typefaces and the features we just went through. If you spend enough time doing this, you'll notice the main difference between the two. Merriweather looks heavier. It looks darker. It even looks larger—we'll come to that soon, let's focus on the colour and weight for now. Now let's take a step backwards and look at longer paragraphs. Both are set in regular weight, at the same size and with the same line-height. Yet, they look very different. Georgia has a higher contrast than Merriweather which makes it look lighter. This, combined with other features (height and size of letters) give Georgia less presence on the page. That's what we mean when we say “type colour” in typography.

Contrast

MERRIWEATHER

Contrast

BODONI

Figure 19: Contrast is also a major contributing factor to how “heavy” a typeface looks like. Merriweather is a low-contrast typeface, while Bodoni is a high-contrast one. Take a closer look at each letter strokes. The difference is obvious.

X-height

We noticed the difference in size of type in the last example. Even though both paragraphs are set at the same size (18px), the two typefaces look very different. Let’s take a closer look.

x-height

MERRIWEATHER

x-height

GEORGIA

Figure 20: Merriweather seems heavier but also larger than the same-size Georgia.

Let’s compare the attributes of both typefaces. Spend a few minutes observing and comparing them. Done? Ok, let’s see. Let’s draw the lines: the baseline, the x-height line, the cap-height line and the line where descenders end. Let’s do that for Merriweather only as it will be easier to spot the differences.

x-height

MERRIWEATHER

x-height

GEORGIA

Figure 21: Merriweather’s x-height is larger than the one of Georgia.

The baseline lies right at the bottom edge of the lowercase x and the x-height line right at the top edge of it, hence the name x-height. I drew the lines long enough so they go all the way to the side where the word set in Georgia lies. Have you noticed the difference yet? The letters of the same word, set at the same size but set in Georgia don’t touch the x-height line coming from the same word set in Merriweather. The x-

height of Georgia is therefore shorter than the one of Merriweather. Take a look at the cap-height line and you'll notice the same. The height of letters in Georgia, both upper and lowercase, are shorter than the same letters in Merriweather. That's what makes Merriweather seem taller than Georgia.

We set type sizes on the web by specific dimensions. Whether in pixels, EMs or REMs—we always end up with type set in particular size set in pixels. But these pixels don't mean a lot in typography. It all depends on the x-height of a typeface.

Typefaces with a taller x-height are considered modern and easier to read. Merriweather, Roboto and Freight Text are great examples of modern serified typefaces with a large x-height.

Typefaces with a smaller x-height are considered less modern and classical. Great examples include typefaces like Garamond, Baskerville and Bodoni.

We'll come back to x-height in the lesson about combining typefaces so keep it in mind.

Explore further

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2. [Learn: Anatomy of a typeface](#)
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