

Assignment III  
Supplementary  
Reading  
  
Typographic  
Design  
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### The Anatomy of Typography

Our contemporary typographic forms have been forged by historical evolution. Typography evolved from handwriting, which is created by making a series of marks by hand; therefore, the fundamental element constructing a letterform is the linear stroke. Each letter of our alphabet developed as a simple mark whose visual characteristics clearly separated it from all the others.

The marking properties of brush, reed pen, and stone engraver's chisel influenced the early form of the alphabet. The reed pen, used in ancient Rome and the medieval monastery, was held at an angle, called a cant, to the page. This produced a pattern of thick and thin strokes.

Because early capital letters were cut into stone, these letters developed with a minimum number of curved lines, for curved strokes were difficult to cut. Lowercase letters evolved as reed-pen writing developed. Curved strokes could be quickly written and were used to reduce the number of strokes needed to write many characters.

Over the centuries, a nomenclature has evolved that identifies the various components of individual letterforms. By learning this vocabulary, designers and typographers can develop a greater understanding and sensitivity to the visual harmony and complexity of the alphabet.

**Baseline** An imaginary line upon which the base of each capital letter rests.

**Capline** An imaginary line that runs along the tops of the capital letters.

**Meanline** An imaginary line that establishes the height of the body of lowercase letters.

**x-height** The distance from the baseline to the meanline. Typically, this is the height of lowercase letters and is most easily measured on the lowercase x.

All characters align optically on the baseline. The body height of lowercase characters align optically at the x-height, and the tops of capitals align optically along the capline. To achieve precise alignments, the typeface designer makes optical adjustments.

**Capitals** The set of large letters that is used in the initial position

**Lowercase** The set of smaller letters, so named because in metal typesetting these were stored in the lower type case.

**Small Caps** A complete set of capital letters that are the same height as the x-height of the lowercase letters. They are often used for emphasis

### The Parts of Letterforms

**Apex** The peak of the triangle of an uppercase A

**Arm** A projecting horizontal stroke that is unattached on one or both ends, as in the letter T and E

**Ascender** A stroke on a lowercase letter that rises above the meanline.

Bowl	A curved stroke enclosing the counterform of a letter. An exception is the bottom form of the lowercase roman g, which is called a loop.
Counter	The negative space that is fully or partially enclosed by a letterform.
Crossbar	The horizontal stroke connecting two sides of the letterform (as in e, A, and H) or bisecting the main stroke (as in f and t)
Descender	A stroke on a lowercase letterform that falls below the baseline.
Ear	A small stroke that projects from the upper right side of the bowl of the lowercase roman g
Eye	The enclosed part of the lowercase e
Bracket	The contoured edge that connects the serif and stem . (Bracketed serifs are connected to the main stroke by this curved edge; unbracketed serifs connect to the main stroke with an abrupt angle without this contoured transition)
Hairline	The thinnest strokes within a typeface that has strokes of varying weights.
Leg	The lower diagonal stroke on the letter k
Link	The stroke that connects the bowl and loop of a lowercase roman g
Loop	see bowl
Serifs	Short strokes that extend from and at an angle to the upper and lower ends of the major stroke of a letterform. Serifs enhance the horizontal flow of a line of type, making it easier to read across a line. Serifs also make the individual letters easier to distinguish.
	Sans serif type means without serifs.
Shoulder	A curved stroke projecting from a stem
Spine	The central curved stroke of the letter S
Spur	A projection, smaller than a serif, that reinforces the point at the end of a curved stroke, as in the letter G
Stem	A major vertical or diagonal stroke in a letterform
Stroke	Any of the linear elements within a letterform; originally, any mark or dash made by the movement of a pen or brush in writing
Tail	A diagonal stroke or loop at the end of a letter, as in R or j.

Legibility  
Typographic legibility is widely misunderstood and often neglected by designers. Yet it is a subject that requires careful study, and constant evaluation. Legibility represents those qualities and attributes inherent in typography that make type readable. These attributes make it possible for a reader to comprehend written forms with the least amount of difficulty.

Shape of Words  
Words are recognized by their shapes, rather than by the individual letters that make them up. The shape of a word is formed by a combination of the external contour of its letters and its internal word pattern (counterform). That's why words set in lowercase letters are easier to recognize than words set in all caps. The irregular word shapes formed by lowercase letters make them more recognizable.

Terminal The end of any stroke that does not terminate with a serif.

What it is?

X-height. Simply put, x-height is the height of the lowercase letters excluding the ascenders and descenders. Unlike point size, x-height is not a unit of measurement. Rather, it's a proportional description of the lowercase letters. A typeface with a large x-height simply means the lowercase letters are proportionally large in relation to the ascenders and descenders (and the capital letters, too). In other words, the larger the x-height, the shorter the ascenders and descenders and vice versa.

Typefaces are measured and classified by point size. 10 point type-whether it's Helvetica or Garamond-simply means that the distance between the tallest part of the letter above the baseline (the ascender) and the lowest part below (the descender) is approximately 10 points. Now, just because they both measure the same doesn't necessarily mean they look the same. 10 point Helvetica looks a lot larger than 10 point Garamond simply because the x-height of the former is larger.

Why x not z?

Or how about e, m or v? after all, if you eliminate all the lowercase letters with ascenders or descenders, there are still a lot of characters left. But if you examine lowercase letters closely, you will see that all round letters go beyond the baseline and the meanline-they were designed that way for optical reasons. Same with pointed letters such as v and w; they go beyond the lines. In some faces, the angular serifs of m, n and r also go over the mean line, as well as both serifs of z. So what are you left with? Just about the only letter that indicates the true height of the lowercase letter is x.

Is bigger better or should you think small?

One of the major advantages of typefaces with larger x=heights is that you can use a smaller point size. Unfortunately, even though a typeface might have a large x-height-which can make it more legible at any given point size- it doesn't necessarily make it more readable. For example, as the x-height increases, the number of characters that can fit in a line decreases simply because the lowercase letters take up more room. So if you're working with a narrow column width, you might want to pick a typeface with a small x-height to fit more characters per line. It's more readable because the eye does not read individual words one at a time, but scans the line to read groups of words. Here's another example. In extended text settings, such as books and newspapers, the proportionally longer ascenders and descenders found in a small x-height face create

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7pt. Bodoni

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7 pt. Avant Garde

more white space between lines of type and that's essential to easy reading.

#### Typeface

A set of characters with design features making them similar to each other. The weights of thick and thin strokes must be consistent. A repetition of curves, verticals, horizontals, and serifs combined bring variety and unity to a type face.

#### Type Font

A font is a set of characters of the same size and style containing all of the letters, numbers and marks needed for typesetting. (see next page for full listing of characters) A typographic font exhibits structural unity when all the characters relate to one another visually.

#### Type Family

A type family consists of a group of related typefaces, unified by a similar design characteristics. Each face in the family of an individual font has been created by changing the visual aspects of the parent font. Early type families consisted of three fonts: the regular roman face, a bolder version, and an italic. Today a wider range of variety can be found. In addition to weight and angle changes (italics), members of a type family are created by changing proportions (expanded, extra-expanded, condensed, ultra-condensed and so on) or by design elabora-

#### Adobe Garamond Regular

abcdefghijklmnopqrstuvwxyz,;:{"'"}? 1234567890  
V fi Y fl Z æ œ J G N K H L O I M â ç ñ é è ü ô © ® † ¶ ¥ \$ ¢ £ ∂ Δ - μ ø π β √ Σ ≈ Ω  
ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz 1234567890

#### *Adobe Garamond Italic*

*abcdefghijklmnopqrstuvwxyz,;:{"'"}? 1234567890 fi fl æ œ  
ABCDEFGHIJKLMNOPQRSTUVWXYZ*

#### **Adobe Garamond Semibold**

**abcdefghijklmnopqrstuvwxyz,;:{"'"}? 1234567890 fi fl æ œ  
ABCDEFGHIJKLMNOPQRSTUVWXYZ**

#### *Adobe Garamond Semibold Italic*

***abcdefghijklmnopqrstuvwxyz,;:{"'"}? 1234567890 fi fl æ œ  
ABCDEFGHIJKLMNOPQRSTUVWXYZ***

#### **Adobe Garamond Bold**

**abcdefghijklmnopqrstuvwxyz,;:{"'"}? 1234567890 fi fl æ œ  
ABCDEFGHIJKLMNOPQRSTUVWXYZ**

#### ***Adobe Garamond Bold Italic***

***abcdefghijklmnopqrstuvwxyz,;:{"'"}? 1234567890 fi fl æ œ  
ABCDEFGHIJKLMNOPQRSTUVWXYZ***

#### Type Font

A complete font for complex typesetting, such as for textbooks, might possibly include close to 200 characters.

#### Ranging Figures

Numbers that are the same height as the capital letters and sit on the same baseline.

Xx 1234567890

#### Old Style Figures

A set of numbers that are compatible with the lowercase letters: 1, 2 and 0 align with the x-height; 6 and 8 have ascenders; 3 4 5 7 and 9 have descenders. Xx 1234567890

#### Superior and Inferior Figures

Small numbers, usually slightly smaller than the x-height, used for footnotes and fractions. Superior figures (<sup>123</sup>) hang from the capline, and inferior figures (<sub>123</sub>) sit on the baseline.

#### Fractions

Common mathematical expressions made of a superior figure, a slash mark and an inferior figure. These are set as a single character. Xx H G O

#### Ligatures

Two or more characters linked together as one unit, such as fi or fl, Y, Z. The ampersand (&) is a ligature originating as a letter combination for the Latin word *et* (and) in medieval manuscripts.

#### Digraphs

A ligature composed of two vowels which are used to represent a diphthong (a monosyllabic sound composed of two vowels). Xx æ, œ

#### Mathematical Signs

Characters used to notate basic mathematical processes. Xx + - = ≤ ≥ ÷

#### Punctuation

A system of standard signs used in written and printed matter to structure and separate units and to clarify meaning. Xx . , ; : ! ? “ ” ‘ ’ - — ( ) [ ] { }

#### Accented Characters

Characters with accents for foreign language typesetting or for indication of pronunciation.

Xx é ü ô ç ñ

#### Dingbats

Assorted signs, symbols, reference marks and ornaments designed for use with a typefont.

Xx § ¶ † ™ ® ©

#### Monetary Symbols

Logograms used to signify monetary systems (U.S. dollar and cent marks, British

## Serif vs Sans

Serifs are the little feet at the tops and the bottoms of letters. Typefaces without serifs are generally called sans serif (without serifs). There are relatively few controversies which revolve around typographic usage. There is one aspect however, which seems to have no simple guidelines and is, thus, the target of frequent and sometimes heated argument. That aspect is whether serif or sans serif designs are most conducive to effective typographic communication.

Some typographers will tell you that serif typeface designs are more legible, and contribute to higher levels of readability than sans serif styles. Another will tell you that sans serif are more functional and have greater clarity of form than serifed typestyles. Which is right? Both are. Then which is the better communicator, serif typefaces or sans serif? Read on.

Serif typefaces make up the largest group in the typographic spectrum. Many of these styles date back to the 16th, 17th, and 18th centuries. Although there are several theories, no one is exactly sure how the serif originated. Some feel that serifs were a natural outgrowth of calligraphy. Others contend that they were a deliberate and contrived addition put on letters by the ancient Roman stonecutters. Since it is difficult to cut square-edged letters in stone, some have suggested that serifs were invented to give the stonecutters an established baseline and a little “cheating room” at the edges of each character stroke.

Those who subscribe to the calligraphic theory also give Roman stonecutters credit, but the story they tell is somewhat different. They believe that the stonecutters first drew their letters with a brush before cutting them in the stone. The calligraphic brush strokes would leave serif-like terminals which were incorporated into the final work.

Regardless of how they evolved, serifs can serve a vital typographic function: they can increase the ease with which words can be read. The human eye tends to be a very lazy organ and very susceptible to the rules of gravity. The natural tendency, when looking at almost anything, is for the eye to drop to the ground, not the best trait when you consider that in most of the world we read on a horizontal axis. Serifs can serve as a guideline for the eye, connecting letters to make words, and words to make lines of copy. This guideline can increase our ability to read faster and more efficiently.

Nicholas Jenson is generally credited with creating the first serif design for type. This was in the late 15th century. Other important early serif typestyles were created by Claude Garamond in the mid 16th century; John Baskerville and William Caslon in the early 18th century. To this day we still use versions of the works of these men, even though their original designs are as much as 500 years old.

There are many different kinds of serifs. Some are just simple horizontal strokes. These can vary in weight from very fine to quite heavy; the heavier being called square, or slab serifs. With some serifs there is a filling-in (or bracketing) between the character stroke and the serif. There are full-bracketed serifs, fine-bracketed serifs, and every stage in between. Serifs can be soft and rounded, long and pointed, irregular, subtly structured, highly stylized, calligraphic, chiseled, and in some cases almost not there.

Some of the more popular serif typestyles of the last century were heavy square serif designs. They were used for headlines and advertising copy because it was felt that the fat and heavy designs attracted the readers attention. As the popularity of these designs increased they were designed still bolder (to attract more attention), and the more condensed (to allow more words per line). But the bolder and more condensed they became, the more difficult it was to incorporate serifs into the design. In order to retain the tight and

heavy image of the typeface, serifs had to be shortened. This tendency, together with the search for new alphabets, were two of the main reasons sans serif typestyles were born. The first version of a typeface without serifs was introduced in 1816 by William Caslon IV (a descendent of the Wm. Caslon who designed the important serif typestyle bearing his name). Because of the strangeness of the new style, it soon came to also be called Grotesque; A name that still survives today in England. The influence and popularity of this new typestyle spread and soon typefounders of Europe and America were developing similar designs.

There are three basic designs of sans serif letters:

Those based on strict geometric forms

Those that have their roots in Roman letter shapes

Those which are somewhere in between the two

abgh

avant garde

Sans serif typestyles based on geometric forms grew out of the experimental designs created at the Bauhaus in the 1920's. These are faces like Futura, ITC Kabel, ITC Avant Garde Gothic. Sans serif designs based on geometric forms tend to be some of the most visually simple typefaces. Their weights appear to be monotone, and characters are created out of the most basic elements. Many have the single storied "a" we are taught to draw in grammar school.

abgh

optima

The Roman, or calligraphic, sans is typified by Optima. The designer of this typeface, Herman Zapf, turned back to Roman lapidary inscriptions for his proportional inspirations. Here the letters have a more hand drawn style as contrasted with the grotesque or geometric sans serif typefaces. They almost appear to be Roman typestyles. Optima is sometimes even classified as a Roman.

Middle ground styles are the result of a natural evolution of the first 19th century grotesques. They tend to be patterned after Akzidenz Grotesk, a typeface developed by the German typefoundry of Berthold in 1898. ITC Franklin Gothic and Helvetica are perfect examples of this style. These typefaces have a more pronounced contrast in stroke weight, and more curved strokes than does the geometric style of sans.

abgh

franklin gothic

Since their beginnings, sans serif typefaces have been typographic underdogs and are still criticized by many experts. The criticisms fall into two general areas. First, and most obvious, sans serif typestyles have no serifs to guide the eye across the page. Second, some feel that the apparent monotone weight in many sans serif typefaces tends to tire the eye in lengthy text composition.

Despite the criticisms, sans serif typefaces are used increasingly. The reason? Primarily clarity of form. While the criticisms are based on fact, sans serif typestyles tend to have simpler and more recognizable letterforms than their serifed counterparts. Sans serif typefaces, therefore, can be ideal choices for typography which must be legible under adverse conditions: where space is at a premium, or at very small sizes. Also, because the numbers in sans serif typefaces are usually exceptionally legible, these designs are often the best choices for typography which is scientific or technical in nature. Parts lists and directories are additional natural applications for sans serif typestyles. And finally, to create a mood or a graphic effect, more and more text composition, normally dedicated to serif typestyles, is set in sans serif designs.

Serif and sans serif typestyles make up the bulk of the typographic resource available to the graphic communicator. They can both be effective tools if used properly, and a well-rounded type library should have examples of each. Whether they have serifs or not, the great variety of letterforms is one of the key ingredients to vitality in typography. Breadth of typographic resource is an important part of effective graphic communication.

## Basic Classification of Typefaces

An infinite variety of typestyles are available today. Numerous efforts have been made to classify typefaces, with most falling into the following major categories.

### Old Style

Garamond

Oldstyle

15-17<sup>th</sup> Centuries

The capital letterforms were based on the inscribed Roman letters. The lowercase was based on the “new” humanistic handwriting we currently use.

*Basic Characteristics:*

The weight stress of the rounded forms are at an angle, there is a diagonal stress

The serifs are bracketed

The serifs on lowercase ascenders are sloped or angled

There is not much contrast between thick and thin line weights

*examples:* Garamond, Bembo, Caslon, Sabon

### Transitional

Baskerville

Transitional

Early to late 18<sup>th</sup> Century

“These types are transitional between *old style* and *modern*.”

*Basic Characteristics:*

The stress within the rounded forms becomes less angled

The serifs are still slightly bracketed

The serifs become more horizontal

The contrast between thick and thin is greater than in *old style*

The latter forms are usually wider than *old style*

*examples:* Baskerville, Times Roman, Caledonia

### Modern

Bodoni

Modern

Middle to late 18<sup>th</sup> Century

These types, invented by Didot and perfected by Bodoni, are called *modern* although the term has no real meaning. *Modern* type faces were introduced in the mid-18<sup>th</sup> Century when improvements were made in presses and papermaking that made it possible to print hairlines.

*Basic Characteristics:*

The stress of the letter becomes vertical

The serifs become hairlines.

There is an extreme difference between the thicks and thins,

The thins becoming hairlines

The letterforms are characterized by strong geometric shapes

*examples:* Didot, Bodoni

Egyptian

(Also known as Slab or Square Serif): first developed in 1815

Introduced by the English typefounder, Vincent Figgins. At the time, there was a mania for Egyptian artifacts and other founders adopted the name *Egyptian* for their slab serif designs.

*Basic Characteristics:*

The stress is usually vertical

The serifs are rarely bracketed

The serifs become heavy square or rectangular shapes

The weight of the strokes becomes even throughout, usually

*examples:* Clarendon, Egyptian, Benton, Fortune, Stymie

(see page 346 of Digital Type Specimen )

# Sans Serif

Univers

## Sans Serif

First developed in 1816

Introduced by typefounder William Caslon, IV. The sans (French for *without*) serif seems a natural progression from the *Egyptian* types introduced the year before.

Basic Characteristics:

There are no serifs

The stress is usually vertical

There is usually little or no contrast in line weight

examples: Helvetica, Univers, Franklin Gothic, Futura

## Black Letter

(Or Gothic): The first type used in printing in Europe.

This is essentially type based on the letter forms as drawn with a wide nib, which originated in Europe north of the alps. The first moveable type by Gutenberg would fit into this category as it was based on the letterforms from monastic manuscripts of his day.

examples: Fraktur (see page 511 of Digital Type Specimen)

## Decorative

Fanciful types started appearing in proliferation in the early 1900s. Many of these types are based on the previous categories, but have the addition of bizarre serifs, shading, shadows and proportions. *Exotics* also fit into this category. Exotics are based on arabic and oriental looks.

examples: Chisel, Shatter, Bamboo, Legend, Libra, Shotgun  
(see page 528 of Digital Type Specimen )

## Scripts

Typefaces based on the *humanistic* handwriting of the 15<sup>th</sup> Century.

examples: Typo Script, Kuenstler, Commercial Script, Bank Script

# Scripts

Kuenstler

Sources of information:

*The Thames and Hudson Manual of Typography* by Ruari McLean

*Typographic Design: Form and Communication* by Rob Carter, Ben Day and Phillip Meggs