Lecture Notes

Introduction

Overview of the field

What is "Graphic Design?"
Graphic Design was defined, from a period we can reasonably begin at 1950 and reasonably end in 1994, as the practice of preparing artwork for mechanical, mass-reproduction by the offset lithography press. Here artwork was defined as the visual representation of text, and as photographic images, and as drawn or painted high-contrast images.
This definition is no longer adequate
[in the classroom there was a deconstruction of the definition abover, and a reconstruction with contemporary terms.]
The designers shapes narratives in two- three- and more dimensions.

Overview of the class and location within the field

Typography is an invisible artform that has cultiviated a tradition of transparency. The typographer has purposely tried to stay out of the way of the "message" and so very few people are accustomed to really looking at type. But typography is an integral part of what a design activity and so we must look at it closely.

Micro-aesthetics

Familiarity with type styles dictates our ability to absorb text. Thus it is the predominantly used typefaces that become the most legible ones. These preferences are everchanging, based on the evolution of the letterform.
----Emigre, 1986
Letterforms have changed through history in response to technological and to philosophical/ideological stimulii. Several systems have been brought forward to classify these changes, they have been outlined in Lawson's *Pringing Types* as well as in Bringhurst's *Elements of Typographic Style* - in detail. We will concern ourselves with the least cumbersome of these as an introduction
Before we can classify typefaces, and typeface families we will need to have command over the anatomy of letterforms.

Anatomy of a Letterform (from Lawson, p44)

font:
baseline:
x-height:
cap-height:
body-height:
ascender:
descender:
serif:
bracket:
counter (or counter-form, negative space):
stress
leading:
stem:
strokes (vertical and horizontal):
spur:
bowl:

Typeface "Style" Classification (Lawson p.66).

Blackletter
Old Style
Transitional
Modern
Square Serif
Sans Serif
Script-Cursive
Display Decorative

Low Resolution Bitmap
It should be noted that this classification system is based mostly on fine distinctions in the shapes of letterforms, they are in essence a "morphology"
To those in Lawson we have added a classification called Low Resolution Bitmap (or Low Res). Low Res typefaces have not had the opportunity to achieve the kind of longevity enjoyed by the other classifications, however their inclusion afforded us the opportunity to introduce the consequences of contemporary technology on letterforms to students.

Rules of thumb for spatial relationships among and between letterforms and lines of text

How are we going to determine appropriate spacing between letters? Between words? Jan Tshichold gave us a set of guidelines that work more often than not. The students are to be reminded that - as rules of thumb - they are not hard and fast. The student is to be encouraged to develop an intuitive feel for "rightness of fit" between two letterforms. Tschicolds rules are only the place to begin their exploration of space issues.

Tschichold's Rules:

The correct amount of space in between words is the width of a lowercase "e" of the same typeface.
The correct amount of space in between letters within a word is the width of a lowercase "i" of the same typeface.
Corrolary 1: the space between two vertical strokes should be the width of a lowercase "i".
Corrolary 2: the space between a vertical stroke and a curved stroke should be two-thirds the width of a lowercase "i".
Corrolary 3: the space between two curved strokes should be one-third the width of a lowercase "i".
A good amount of leading, at text sizes, is 120% of the point-size of the type being used. This rule of thumb has been pronounced by several typographers thoughout history and has become a default for software.

Johannes Gutenberg, Black Letter and the Invention of Moveable Type

c. 1450
broad nib pen based letter forms, textura
very vertical stress, almost no curves, very high contrast between thick and thins.
invention of movable, variable width typography
invention of printing press
invention of ink formula
Manutius and Griffo

Sans Serif

A. What is "sans serif"?

Lawson p.110

B. When was it developed?

C. Where was it developed? Popularized?

D. Why was it developed?

E. How is "sans serif" different from other letterforms?

F. What are examples of the "sans serif"

1. Futura (Carter page 172)

Drawn by Paul Renner circa 1924-1926
released by Bauer Type Foundry, Frankfurt 1927-1930
Geometric Sans Serifs were extremely popular until the 1960's, when sans serifs such as Helvetica and Univers became dominant.
It is almost a complete monoline type, based on the geometric principles of compass T-square and triangle.
Following the Bauhaus dictum that form should follow function, European designers explored elemental geometry during the 1920's.
Futura proved to be so popular that a host of type foundries rushed to market with typefaces that were meant to compete for a piece of the pie. They ranged from bald-faced copies to richly unique solutions. Metro, Tempo, Kabel, Spartan, Gill Sans.

2. Futura (Lawson page 116)

Lawson, Meggs and Carter assume Renner was influenced by Bayer and Johnston.
Futura was linked to the asymmetrical typography of the Bauhaus and of Tschichold. This combination had a tremendous impact on the appearance of German printing.
American typefounders soon issued sans serif types when the new style proved to be not simply an avant-garde innovation but a design which had solid backing of typographers everywhere.
By 1930, there were many new sans serif types available to compete with Futura, but none of them in the eyes of typographers had the élan of the Renner letter.

3. Early 20th century typeface design (Meggs 2nd ed. 301-303)

Johnston Railway type. Sans serif based on classical Roman letter forms. Inspired Eric Gill's Gill Sans.
Eric Gill's diverse activities encompass stonemasonry, inscriptional carving, sculpture, wood engraving, typeface design, graphic design and extensive writing. Believed that work has a spiritual value.
Gill argued that uneven word spacing of justified lines (of type) posed greater legibility and design problems than the use of equal word spacing and a ragged-right margin.
Bayer's universal alphabet served as an inspiration for many geometrically constructed sans serifs.
Futura was drawn by Renner. Renner believed very strongly that "designers should not just preserve the inheritance that they have been given and pass it on to the next generation unchanged; each generation must try to solve problems that were inherited and attempt to create a contemporary form true to its own time."

4. Futura (Bringhurst 2nd ed. page 241)

Old Style

A. What is an Old Style typeface?

B. When was it developed?

C. What are Examples of Old Style?

1. Garamond (Carter page 208)

16th Century French
Named for Claude Garamond
Old Style types inspired by types cut for Aldus Manutius by Francesco Griffo in Venice.
Adobe Garamond, drawn by Robert Slimbach, is one of the most faithful contemporary interpretations of Garamond's letters. The italic is based on the letters of Robert Granjon which appeared on the same specimen used by Slimbach as a source.
Many revivals and interpretations of Garamond's letters are actually based on the letters of Jean Jannon -- who in turn had based his work on Garamond's. Jannon made several significant changes. These include Garamond No. 3, ATF Garamond,

2. Garamond (Lawson page 83)

An important innovation by Garamond was the design of an italic which was a consciously formed complement of the roman. Previously, italics had been considered as independent cursive types, following the first one which was produced for Aldus in 1501.
After Garamond's death in 1561, his punches wer widely scattered - when his widow sold his punches and matrices. We can attribute the great popularity of this type to this scattering.

3. Garamond (Meggs 2nd ed. pp. 102104)

Claude Garamond was the first punch cutter to work independently of printing firms. The quality and beauty of his typefaces are credited as major reasons for the elimination of Gothic [sic Blackletter] types all over Europe.
Garamond apprenticed under Antoine Augereau and worked, briefly, with Geoffroy Tory. All three should be credited with propagating the switch to Roman letterforms begun by Griffo.
Around 1530 Garamond established his independent type foundry to sell to printers cast type ready to distribute into the compositor's case.
The influence of writing as a model diminished in Garamond's work, for typography was evolving a language of form roooted in the process of making steel punches, casting metal type, and printing instead of imitating forms created by hand gestures with an inked quill on paper.

4. Garamond (Bringhurst 2nd ed. page 218-220)

Transitional

A. What are examples of Transitional?

1. Baskerville (Carter page 30)

Baskerville established his press in the 1750's in England
As the century opened, old-style typefaces (Bembo, Garamond) were dominant; by the end of the century the modern styles of Giambattista Bodoni and Firmin Didot prevailed. Baskerville fonts from the middle of this transformation are called Transitional types.
Baskerville sought to increase the contrast between thick and thin strokes, making serifs sharper and more tapered and shifting the axis of rounded to a more vertical position. Characters are more regular and consistent in size and form.
His types were an important inspiration for Bodoni and Didot, who pushed their designs toward even greater contrast and geometric refinement.

2. Baskerville (Lawson page 93)

The term transitional describes types with characteristics based on the oldstyle fonts, coupled with features of the type style called modern.
The eighteenth-century type considered by most authorities to represent the real beginning of the transitional form was that of John Baskerville, an amateur printer who set up a printing office in Birmingham, about 1750. Baskerville introduced a number of technical innovations in his printing, most of which affected the appearance of his types.
Baskerville's press was more solidly constructed than those of his fellow printers. He used a brass plate and favored a hard impression at a time when a cushioned squeeze was preferred. He also instituted the practice of passing printed sheets through heated copper cylinders to smooth the rough-textured paper then commonly used. Typographically, Baskerville was fond of wide margins and well-leaded pages, another departure from the style of his day.
His efforts were unsuccesful in England but enthusiastically received in the rest of Europe.

3. Caslon & Baskerville (Meggs 2nd ed. pp. 119122)

Caslon's types followed English colonialism throughout the world. Caslon's types are "sturdy" and make use of irregular stress. In use they have an uneven, rythmic texture. They are considered very legible.
Baskerville types, as compared to earlier ones, are wider and the wight contrast between thick and thin strokes is increased. The placement of the thin stroke is moved from a diagonal axis to a vertical one. The serifs flow smoothly out of the major strokes and terminate as refined points.
In use, Baskerville favored economy and simplicity over ornamentation.

4. Baskerville (Bringhurst 2nd ed. page 205)

Modern

A. What are examples of Modern?

1. Bodoni (Carter page 50)

Giambattista Bodoni of Parma, Italy
1768 he became the director of the Duke of Parma's Stamperia Reale (the Royal Press -- or print-shop). There he designed his first roman types that were more geometric in appearance.
His letters are characterized by an extreme contrast between thick and thin strokes and a mathematically precise vertical stress. The ascenders and descenders appear long in relation to the x-height of the letters.

2. Bodoni (Lawson page 101)

widespread interest in copperplate engraving, encouraging types which were imitative of the fine lines of the engraver's burin.
effects of industrial revolution began to be felt. Book printing predominated up until 1820. Afterward commercial printing rose to dominance in response to the need to promote the sale of manufactured goods.
...new promotional techniques demanded new styles of type.
The swollen versions of modern faces became known as fat faces.
Modern letterforms don't work well for book typography.

3. Modern (Meggs 2nd ed. pp. 133135)

neoclassicism replaces roccoco
Bodoni defined his design ideal as cleanness, good tast, charm, and regularity. This regularity the standardization of units was a concept of the emerging industrial era of the machine. Bodoni decided that the letters in a type font should be created through combinations of a very limited number of identical units. This standardization of forms that could be measured and constructed marked the death of calligraphy and writing as the wellspring for type design. Bodoni's precise, measurable, and repeatable forms expressed the vision and spirit of the machine age. It is noteworthy that as Bodoni was constructing alphabets of interchangeable parts American inventor Eli Whitney was assembling firearms of interchangeable parts in his New Haven, Connecticut, factory, foreshadowing the mass-production techniques soon to revolutionize western society.
In Bodoni's page layouts, the borders and ornaments of the earlier decorative style that had brought international fame to the Satmpera Reale were cast aside for a severe economy of form and efficiency of function. The severe purity of Bodoni;s late graphic design style has affinities with twentieth-century functional typography. Open, simple page design with generous margins, wide letter- and line spacing, and large areas of white space became his hallmark. Lightness was increased by using a smaller x-height and longer ascenders and descenders. In some fonts, letters were cast on oversized metal so the type could not be set solid. As a result, these fonts always had the appearance of generous leading.

4. Bodoni (Bringhurst 2nd ed. pp. 123125)

Square Serif

Bracketed and Unbracketed Serifs

stroke weights vary or are uniform

A. What are examples of Square Serif?

1. Clarendon (Carter page 118)

Beasley drew the first one in 1845
The strokes in Clarendon fonts are fairly heavy, with thick-and-thin weight contrast rather than uniform stroke weight. It has subtle bracketing.

2. Typography for an industrial age (Meggs 2nd ed. pp. 133135)

Dominance of book printing, both as an industry and as amethod of dissemination of information, give way to commercial and jobbing printers creating advertising and posters. Larger scale, greater visual impact, and new tactile and expressive characters were demanded. Book typography that had evolved slowly from handwriting did not fulfill these needs.
The industrial age required that thes signs (the alphabet) be transformed into abstract visual forms projecting powerful concrete shapes of strong contrast and large size from the billboards. At the same time, letterpress printers were under increasing competitive pressure from ligthographic printers, whose skilled craftsmen rendered plates directly from an artist's sketch and produced images and letterforms limited only by the artist's imagination.
The idea of larger and fatter letters was embraced by founders, and type grew steadily bolder by the decade. this led to the invention of fat faces. A fat-face typestyle is a roman face whose contrast and weight have been increased by expanding the thickness of the heavy strokes. The stoke width has a ratio of 1:2.5 or even 1:2 to the capital height. Having a bold, machinelike feeling, these antiques [sic. square serif types] were characterized by slab-like rectangular serifs, an eveness of weight throughout the form, and short ascenders and descenders.
In 1845, William Thorowgood and Company copyrighted a modified Square Serif called Clarendon. These letterforms were condensed with stronger contrasts between thick and thin strokes and somewhat lighter serifs.

4. Clarendon (Bringhurst 2nd ed. page 211)

Low Resolution Digital (Emigre)

Preamble

On the electronic page, text and image exist as manifestations of the same media and there is no longer a distinction between illustration and type.

Designers of pre-computer eras have constructed geometric letterforms with complicated manually drawn structures based on the circle and the square.
The resolution of the bitmap is fixed. Therefore, obliquing (the "tilting" of a roman form to render an italic-like form) with bitmaps results in more distortions than with outlines (cf. Berlow), which can be scaled to a variety of sizes and resolutions.
Regardless of resolution, all digital type and images are built out of blocks on a grid structure. These building elements are called pixels and the resulting image is the "bitmap" literally the "map of bits".
Diagonals and curves are particularly difficult to resolve acceptibly in low-resolution. The availability of 8-bit grey scale and 24-bit color monitors allows type designers to create illusions of smoothness by manipulating the intensity of pixels in those areas.

A. lo-res (lecture)

In 1984 Apple introduced the Macintosh computer to the public. In 1986, together with Adobe Aldus and Canon

How many of you, when you were younger - or more recently, have put your face right up against your TV or your Computer Monitor? (response should be near universal)
What did you see when you were there? (response expected: lots of colored dots)
Lots of colored dots, and how were these dots arranged? Were they scattered willy-nilly? (response expected: no, they were organized in rows and columns)
Rows and columns make up a ... (together: grid)

bit map
bit: 1 unit of information. In computer "universe" a bit has two possible states, "on" or "off".
byte: 1 "chunk" of information. A group of bits that form a "word" of information. We can make a generalization that 8-bits = 1-byte.
Grid
Raster: a grid unit
Pixel: acronymn for picture element
Dot: generic description of pixel
Resolution: can be expressed in two ways. 1.- as an area, e.g. 640 x 480 units or pixels. 2.- as a linear density expressed in PPI or DPI, e.g. Macintosh monitors typically have a resolution of 72 dpi. (This is a rational correlation to typographic history, i.e. 72 points = 1 inch)
Cathode Ray Tube (CRT): a device consisting of a (cathode) ray gun and a surface coated with phosphorescent dots. The phosphors are arranged in a grid. The grid points can be addressed by (x,y) coordinates. The ray excites the phosphor. Initially the phosphors could only be on or off. Later the intensity of the brightness of the phosphors could be controlled in discrete units (of either voltage or luminosity).

B. What are examples of Low Resolution Digital?

1. Chicago (lecture and Meggs 2nd ed. pp. 469)

Originally drawn by Susan Kare (b. 1954). (cf Meggs)
Released in 1984 by Apple® Computers Inc. as one of a collection of twelve default typefaces included on the Macintosh® personal computer.
Chicago uses a 12-unit body-height
Chicago uses a 9-unit cap-height
Chicago uses a 7-unit x-height
Ratio of vertical stroke width to horizontal stroke width is 2:1. This is an attempt to reference historical geometries within the confines of a restricted grid. Counters are two units wide

2. Oakland 6 (lecture and VanDerLans Signs of Type handout)

Zuzana Licko for Emigre Graphics. 1996
The rationale behind them (Emigre's first release of low and high resolution fonts) is derived from that of the grid and the digital characteristics are incorporated as design elements.
The coarser the grid of the output device, the more limited is the possibility of pixel placement, and the variety of representable font characteristics is limited accordingly.
Oakland 6 uses the minimum number of pixels required to define a complete upper-case alphabet while maintaining the characteristics of its family.

3. Emperor 8 (lecture and VanDerLans Signs of Type handout)

Zuzana Licko for Emigre Graphics. 1996