

Ao  
Clarendon  
(Egyptian slab-serif)

Ao  
Akzidenz Grotesque  
(sans-serif)

## History of Graphic Design

### Chapter Nine—Graphic Design and the Industrial Revolution

#### Definitions

- *Fat face*—a Roman face whose contrasts and weights have been increased by expanding the thickness of the heavy strokes (Robert Thorne).
- Antique (Egyptian) fonts—bold, machinelike feel, slab-like rectangular serifs, evenness of weight throughout the letterform, short ascenders and descenders (p136, 137). Also slab serif, Clarendon fonts (Egyptian, 1821; Clarendon, 1845).
- *Ionic*—variation of Egyptian faces, slightly bracketed serifs, increased contrast between thicks and thins (p137, #9-6).
- *Tuscan*—fonts with extended, curved serifs, bulges, cavities, ornaments (p137, #9-7).
- *Sans serif*—1816, first developed by *William Caslon IV*; looked like Egyptian without serifs. Also known as *Doric*, *Grotesque*, *Gothic*. 1830s, sans serif received more notice; in 1832 *Vincent Figgins* coined the term, “sans serif.”
- ‘Job printer’—produced handbills, woodtype posters, broadsheets
- *Halftone*—first halftone 1880, *Stephen Horgan* (p148, #9-31, 9-32)
- *Linotype machine*—1886, *Ottmar Mergenthaler* (bottom p141–143).
- *Monotype machine*—1887, *Tolbert Lanston*. Cast single characters from hot metal.

#### Names to Know

- *Thomas Cotterell*, 12-pica high cast letters. p135
- *Thomas Figgins*, 1st designed type classified as ‘Egyptian.’
- *William Caslon IV*, designed the first sans-serif font (1816).
- *Vincent Figgins*, first coined the term, ‘sans serif’ (1832).
- *Koenig*, *Cowper*, *Applegath*, were innovators in the technology of the printing press (important: *James Watt*, 1780, steam engine).pp140, 141
- *Fourdrinier Brothers*, papermaking machine, approx. 1803 (p141).
- *Stephen Horgan*, first halftone (1880).pp147, 148
- *Ottmar Mergenthaler*, *Linotype* (1886)pp141–143
- *Tolbert Lanston*, *Monotype* (1887).p142

#### Important Information

The *Industrial Revolution*, which first occurred in England between 1760 and 1840 was a radical process of social and economic change, and the *Victorian Era* (1819–1901) was a time of strong religious belief, social convention and optimism in which technological exploitation flourished.

Approx. 1780 *James Watt* invented the steam engine, enabling steam power to replace animal and human power thus increase the amount of energy generated by one hundredfold. In the last quarter of the 18th Century, electricity and gasoline-powered engines enabled the development of the factory system with machine manufacturing and *divisions of labor*.

Cities grew at an astounding rate as people left the rural, subsistence form of life to seek factory employment. A wider distribution of wealth gradually occurred and Capitalism rapidly developed. A chain of events occurred with masses of people living in the cities and working in the factories: more good became available, more and more people had more and more purchasing power and a *cycle of supply-and-demand* was created on a large scale.

Throughout the time of the industrial revolution, especially into the 19th Century, the standard of living of people throughout Europe and North America greatly improved.

As standards of living increased, critics of the new materiality argued that people were shifting from an interest in human values towards a preoccupation with material goods. In truth, *technology lowered costs, increasing production demand and mass-produced manufactured goods almost completely replaced handcrafted items*.

Over the course of the 19th Century, *the factory system promoted specialization*. In the area of typographic printing, *design and production became separate components*. Previously, craftsmen were employed in all stages of design and production. *The nature of visual communication changed profoundly*. A huge range of typographic styles and sizes became available. Early in the 19th Century *photography* was successfully achieved and by the end of the 1800s the *halftone* process enabled printers to reproduce photographs.

The 19th Century was the most inventive and prolific time of typeface design.

**Before the 19th Century, the dominant function of typographic design had been the dissemination of information, primarily through books. Industrialization brought with it the desire of people to produce, among other things, printed materials, advertising and posters.**

**Large scale** became important, along with **visual impact and bold means of expression**.

The alphabet, which previously functioned as phonetic symbols, was transformed into a graphic element—letterforms became large, at times abstract and ornate, visual forms.

The earliest evidence of large letterform production is traced to 1765, when **Thomas Cotterell** cast bold display letters that were ...“12 pica high!” (144pt, p135).

Approx. 1821, **Thomas Figgins** first designed type that is classified as **Egyptian** (p136, 137). Speculation attributes the name of these typefaces to the early 19th Century fascination with early Egyptian culture (re: Rosetta Stone unearthed 1799, decoded 1822). Also note: **Clarendon** typefaces were developed, considered ‘condensed Egyptians with their stronger contrast between thick and thin strokes and somewhat lighter serifs. The **Egyptian and Clarendon typefaces became known as slab serif faces**.

Egyptian typefaces (Clarendon, Century Expanded)—

- bold, machinelike feel
- slab-like rectangular serifs
- evenness of weight throughout the letterform (some with little contrast between thick and thin strokes)
- short ascenders and descenders
- some, slight diagonal stress

English typefounders produced a huge variety of type designs. They modified forms and proportions and applied all kinds of decoration to their alphabets. Type was designed to show the illusion of three dimensions, and all kinds of ‘perspective variations’ were developed.

In 1816, **William Caslon IV** designed the **first sans-serif** font. Apparently based upon Egyptian styles of type, this typeface looked like Egyptian type with the serifs removed! Little notice was paid to the sans serif face, however, until the 1830s, when a variety of foundries developed their own versions of the sans serif, each with a different name (**Doric, Grottesque, Gothic**). The name ‘**sans serif**’ was coined in 1832 by **Vincent Figgins**.

Through the 1800s, as large-size type became more and more popular, problems—such as weight and unevenness—with casting large sizes became evident. A method was devised for the mass-production of large-size wood type, and the **wood-type poster became a popular 19th Century form of visual communication**. Travelling circuses, vaudeville houses, clothing stores and railroads commonly used posters to advertise their wares (p139, #9-14).

The wood-type poster began its decline approx. 1870 and was almost non-existent by 1900, as the process of **lithographic printing** surpassed the wood-type process in efficiency and quality.

At the beginning of the 19th Century, the printing presses used were basically the same as the press designed by Gutenberg over 300 years earlier. By the 1830s, the **steam-powered press** was in use, and the speed of production and sheet size of paper were greatly expanded. With the introduction of the steam-powered press in 1815, 4,000 sheets could be printed—both sides—in one hour, in comparison to 250 sheets—one side—per hour on a hand press. The new speed of production greatly decreased costs from 3¢ to 1¢ thus **bringing costs to an affordable level** for many (Koenig, 1811; Cowper, 1815 [w/Applegath, 1827]pp140, 141). Also, 1833, **Fourdrinier Brothers**, p141.

While the speed of printing was greatly accelerated in the early years of the 19th Century, the method used to set type was still in the days of Gutenberg (metal type).

In 1886, an American, Ottmar **Mergenthaler**, perfected a machine which set individual, evenly-spaced lines of type (pp141–143). Each **Linotype replaced seven to eight men**, and strikes and violence threatened many printing establishments. The linotype rapidly replaced handset type however, and as a result the proliferation of printed materials that ensued due to the linotype’s speed aided in the establishment of thousands of new jobs in printing and related fields. Book publishing expanded rapidly, and periodicals and weeklies flourished.

In 1887, Tolbert Lanston invented the monotype which cast single letters from hot metal. It took approx. 10 years for the monotype to be perfected for practical use, however, after the linotype and monotype were both in use, handset metal type faced a tremendous decline in usage. Efforts at stabilizing the metal type industry resulted in measures such as the 1892 merger of 14 foundries.

## Photography, the New Communication Tool

### Definitions

- **Camera Obscura** (p143, #9-19)
- **Heliogravure** (‘sun engraving’)
- **Daguerreotype**

- Calotype
- Photogenic drawing (photogram)
- Halftone

#### Names to Know

- Niepce
- Daguerre
- Fox Talbot
- Horgan
- Hill
- Cameron
- Nadar
- Brady and O'Sullivan
- Muybridge

#### Important Information

During the 19thC, as major innovations were occurring in the area of typography and printing, another major 19thC invention was paving the way for a process that would eventually replace the woodcut illustration or copperplate engraving.

In France in **1826, Joseph Niepce first succeeded in producing the first crude photograph** by exposing a pewter sheet, coated with a light-sensitive material, to sunlight for one whole day. Further experimentation by a colleague, Louis Jacques **Daguerre, after Neipce's death in 1833 led to his producing the first daguerrotype prints in 1839**. Daguerre's produced prints using silver-coated copper that was put through a process of polishing, sensitizing and

developing.

As Daguerre was perfecting his image-making process in France, an Englishman, William Henry Fox Talbot pioneered a process that became the basis for both photography and the process of photomechanical platemaking in printing.

In 1840, **Fox Talbot** invented the **Calotype** process, whereby a negative was used, therefore permitting the reproduction of an unlimited number of prints.

Through the 1800s, the photographic process evolved from the initial cumbersome procedure, and in 1888 **George Eastman** produced a camera which put photography into the hands of the general public. He called it the '**Kodak**.'

The successful development of photography spurred exploration into its uses in the printing industry. In 1871, John Calvin Moss produced a commercially feasible photoengraving process in New York City. In 1875, Charles Gillot opened the first photo relief printing firm in Paris, and in 1880, the **first half-tone (printed reproduction of an original photograph) was printed by Stephen Horgan in NYC** (See p148).

Photography as visual communication—see pp148-151. Especially...

- David Octavius Hill—portraiture (1843)
- Julia Margaret Cameron—portraiture (1864)
- F.T. Nadar (note especially his 1886 interview with Marie Eugene Chevreul)
- **Matthew Brady and Timothy O'Sullivan**—Civil War and American West
- **Eadweard Muybridge**—motion photography

#### Popular Graphics of th Victorian Era

##### Definitions

- **Lithography**—**Aloys Senfelder**, 'oil and water do not mix' (p153)
- **Chromolithography**—patented in 1837, especially popular 1860–1890; sometimes with five or more (up to 20!) colors, production of art prints, poster, books, magazines (p153)
- **Golden Age of American Illustration**—1890s–1940s. Even though by this time the halftone was introduced, full-color reproduction of photography was time-consuming and very expensive, therefore illustration was used because it was more economical to reproduce.

## Names to Know

- **Harper Brothers**—James, John, Wesley, Fletcher...also...
- Illustrators who worked for Harper's—
  - **Thomas Nast**—see **Tammany Tiger** and quote "policy always strangles the individual" p163.
  - **Charles Dana Gibson** —**Gibson Girl**, p163
  - **Howard Pyle**—strong influence, forerunner in the Golden Age of Illustration.
  - **Linn Boyd Benton**—designed **Century typeface**: high x-height, expanded characters, popular for childrens' books.
  - **Volney Palmer**—**opened the first advertising agency**, 1841
  - **Louis Prang**—known for meticulous chromolithography 1860s–1890s, notably trade cards, Christmas cards. Also—art materials and art instruction books. (p156, #9-45)
  - **Jules Chéret**—late 1800s—early 1900s, Chéret initially produced work in the Victorian style. As he moved into the 1900s he became an innovator in the style of Art Nouveau (more on Chéret, Ch13)
- Childrens' book illustrators...
  - **Walter Crane** (1845–1915)
  - **Kate Greenaway** (1846–1901). p161, #9-56
  - **Randolph Caldecott** (1846–1886). p160, #9-55

## Important Information

- Read paragraph under the heading 'Popular Graphics of the Victorian Era', p152
- pp153–157, chromolithography was noted for meticulous design, ornate embellishments, printing of posters, labels, advertising cards for theatre, curcuses, products (especially read Prang, view the illustrations p156)
- Editorial and advertising design pp160–165—view illustrations pp162, 163, and...
  - Harper Brothers
    - 1817 opened a printing firm in NYC
    - by mid-1800s had largest printing and publishing company in the world
    - 1840s—Harpers Illuminated and New Pictorial Bible
    - **1850s—Harpers New Monthly Magazine** (with editorial and illustration)
    - **1857—Harpers Weekly** (newsmagazine)
    - **1867—Harpers Bazaar** (for young women)
    - 1879—Harpers Young People

By the end of the 1800s—Century magazine (1881–1930), Scribners magazine (1887–1939).

Advertising—second column, second paragraph p164: persuasion, propaganda. Advertising revenues helped to cut production costs of magazines, by the 1870s advertising in magazines was plentiful.  
NB: positioning and placement of ads was in the back—this practice changed into the 20th Century!!!

The passion for ornate typography and colorful chromolithographic embellishment subsided considerably (although it did continue, to a point into the first part of the 20th C) in the 1890s with the growth in popularity of the Arts and Crafts movement.

19th Century typography—read pp165, 166