ELLEN LUPTON

thinking
with

type

theory

practice

*entertaining
economical
essential*

how

why

A CRITICAL GUIDE

FOR DESIGNERS,

WRITERS, EDITORS,

& STUDENTS

2ND EDITION
REVISED & EXPANDED

PRINCIPLES
EXAMPLES
EXERCISES
MORE { TYPE CRIMES
FONTS
FACTOIDS
FUN

A DESIGN HANDBOOK

Typography is what language looks like.

Dedicated to GEORGE SADEK (1928–2007) *and all my teachers.*

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HOOD'S SARSAPARILLA Advertisement, lithograph, 1884.
Reproduced at actual size. *A woman's healthy face bursts through a
sheet of text, her bright complexion proving the product's efficacy better
than any written claim. Both text and image were drawn by hand,
reproduced via color lithography.*

INTRODUCTION

Since the first edition of *Thinking with Type* appeared in 2004, this book has been widely adopted in design programs around the world. Whenever a young designer hands me a battered copy of *Thinking with Type* to sign at a lecture or event, I am warmed with joy from serif to stem. Those scuffed covers and dinged corners are evidence that typography is thriving in the hands and minds of the next generation.

I've put on some weight since 2004, and so has this book. For the new edition, I decided to let out the seams and give the content more room to breathe. If you—like most graphic designers—like to sweat the little stuff, you'll find a lot to love, honor, and worry about in the pages that follow. Finicky matters such as kerning, small capitals, non-lining numerals, punctuation, alignment, and baseline grids that were touched on briefly in the first edition are developed here in more detail, along with new topics that were previously omitted, such as how to style a drop capital, what you need to know about optical sizes, and when to say "typeface" instead of "font" at your next AIGA wine-and-carrot-stick party. This new book has more of everything: more fonts, more exercises, more examples, a more bodacious index, and best of all, more type crimes—more disgraceful "don'ts" to complement the dignified "do's."

I was inspired to write the first edition of this book while searching for a textbook for my own type classes, which I have been teaching at Maryland Institute College of Art (MICA) since 1997. Some books on typography focus on the classical page; others are vast and encyclopedic, overflowing with facts and details. Some rely heavily on illustrations of their authors' own work, providing narrow views of a diverse practice, while others are chatty and dumbed down, presented in a condescending tone.

I sought a book that is serene and intelligible, a volume where design and text gently collaborate to enhance understanding. I sought a work that is small and compact, economical yet well constructed—a handbook designed for the hands. I sought a book that reflects the diversity of typographic life, past and present, exposing my students to history, theory, and ideas. Finally, I sought a book that would be relevant across the media of visual design, from the printed page to the glowing screen.

I found no alternative but to write the book myself.

Thinking with Type is assembled in three sections: LETTER, TEXT, and GRID, building from the basic atom of the letterform to the organization of words into coherent bodies and flexible systems. Each section opens with a narrative essay about the cultural and theoretical issues that fuel typographic design across a range of media. The demonstration pages that follow each essay show not just *how* typography is structured, but *why*, asserting the functional and cultural basis for design habits and conventions. Throughout the book, examples of design practice demonstrate the elasticity of the typographic system, whose rules can (nearly) all be broken.

The first section, LETTER, reveals how early typefaces referred to the body, emulating the work of the hand. The abstractions of neoclassicism bred the strange progeny of nineteenth-century commercial typography. In the twentieth century, avant-garde artists and designers explored the alphabet as a theoretical system. With the rise of digital design tools, typography revived its connections with the body.

The second section, TEXT, considers the massing of letters into larger bodies. Text is a field or texture whose grain, color, density, and silhouette can be endlessly adjusted. Technology has shaped the design of typographic space, from the concrete physicality of metal type to the flexibility—and constraints—offered by digital media. Text has evolved from a closed, stable body to a fluid and open ecology.

The third section, GRID, looks at spatial organization. In the early twentieth century, Dada and Futurist artists attacked the rectilinear constraints of metal type and exposed the mechanical grid of letterpress. Swiss designers in the 1940s and 1950s created design's first total methodology by rationalizing the grid. Their work, which introduced programmatic thinking to a field governed by taste and convention, remains profoundly relevant to the systematic thinking required when designing for multimedia.

This book is about thinking *with* typography—in the end, the emphasis falls on *with*. Typography is a tool for doing things *with*: shaping content, giving language a physical body, enabling the social flow of messages. Typography is an ongoing tradition that connects you *with* other designers, past and future. Type is *with* you everywhere you go—the street, the mall, the web, your apartment. This book aims to speak to, and *with*, all the readers and writers, designers and producers, teachers and students, whose work engages the ordered yet unpredictable life of the visible word.

ACKNOWLEDGMENTS

As a designer, writer, and visual thinker, I am indebted to my teachers at the Cooper Union, where I studied art and design from 1981 to 1985. Back then, the design world was neatly divided between a Swiss-inflected modernism and an idea-based approach rooted in American advertising and illustration. My teachers, including George Sadek, William Bevington, and James Craig, staked out a place between those worlds, allowing the modernist fascination with abstract systems to collide with the strange, the poetic, and the popular.

The title of this book, *Thinking with Type*, is an homage to James Craig's primer *Designing with Type*, the utilitarian classic that was our textbook at the Cooper Union. If that book was a handyman's manual to basic typography, this one is a naturalist's field guide, approaching type as a phenomenon that is more evolutionary than mechanical. What I really learned from my teachers was not rules and facts but how to think: how to use visual and verbal language to develop ideas. For me, discovering typography was like finding the bridge that connects art and language.

To write my own book for the twenty-first century, I decided to educate myself again. In 2003 I enrolled in the Doctorate in Communications Design program at the University of Baltimore and completed my degree in 2008. There I worked with Stuart Moulthrop and Nancy Kaplan, world-class scholars, critics, and designers of networked media and digital interfaces. Their influence is seen throughout this book.

My colleagues at MICA have built a distinctive design culture at the school; special thanks go to Ray Allen, Fred Lazarus, Guna Nadarajan, Brockett Horne, Jennifer Cole Phillips, and all my students.

The editor of *Thinking with Type*'s first edition, Mark Lamster, remains one of my most respected colleagues. The editor of the second edition, Nicola Bednarek, helped me balance and refine the expanded content. I thank Kevin Lippert, publisher at Princeton Architectural Press, for many, many years of support. Numerous designers and scholars helped me along the way, including Peter Bilak, Matteo Bologna, Vivian Folkenflik, Jonathan Hoefler, Eric Karnes, Elke Gasselseder, Hans Lijklema, William Noel, and Jeffrey Zeldman, as well as all the other designers who shared their work.

I learn something every day from my children, Jay and Ruby, and from my parents, my twin sister, and the amazing Miller family. My friends—Jennifer Tobias, Edward Bottone, Claudia Matzko, and Joy Hayes—sustain my life. My husband, Abbott Miller, is the greatest designer I know, and I am proud to include his work in this volume.
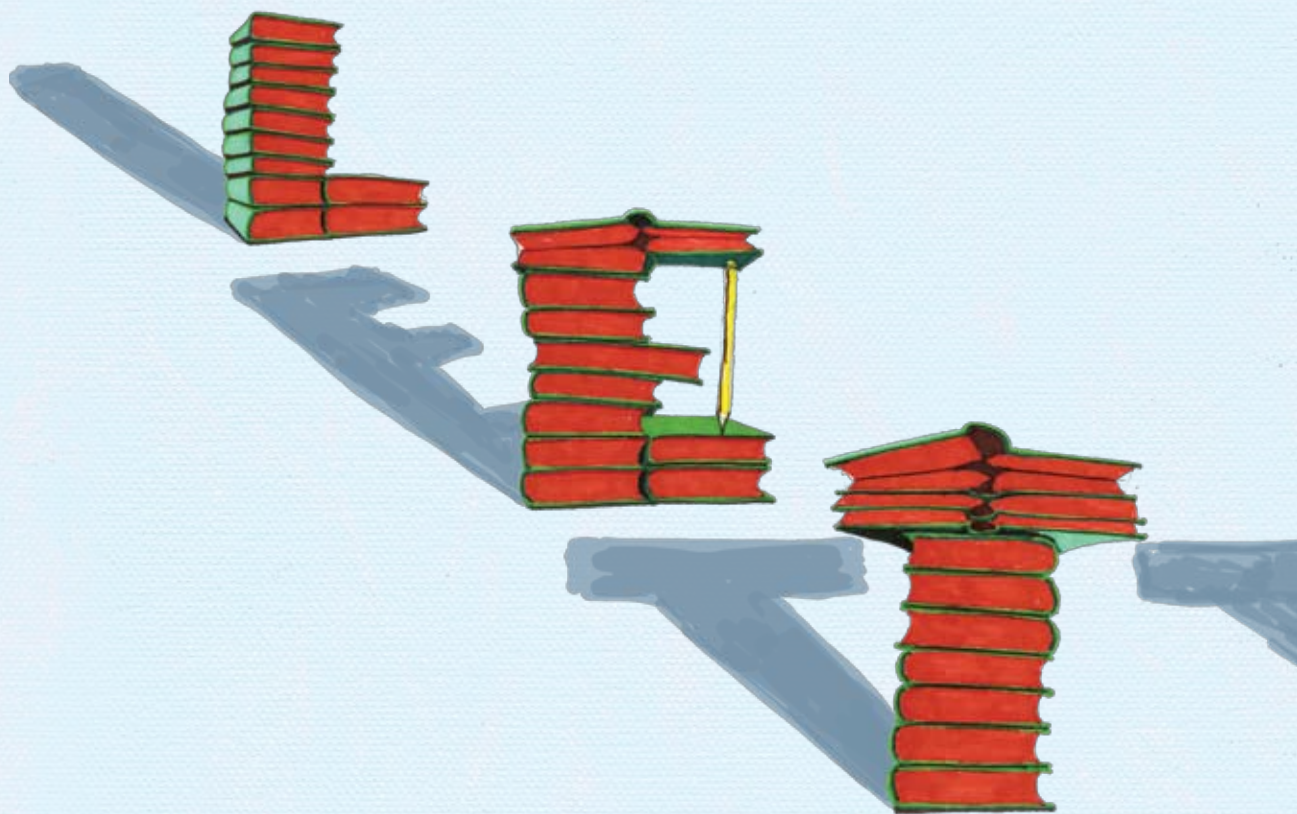
{LETTER}

Upper Case.

Lower Case.
A PAIR OF CASES.

California Job Case.
FIG. 2.—Showing Lay of Cases.

TYPE, SPACES, AND LEADS
Diagram, 1917. Author:
Frank S. Henry. *In a
letterpress printing shop,
gridded cases hold fonts of type
and spacing material. Capital
letters are stored in a drawer
above the minuscule letters.
Hence the terms "uppercase"
and "lowercase" are derived
from the physical space of the
print shop.*

LETTER

THIS IS NOT A BOOK ABOUT FONTS. It is a book about how to use them. Typefaces are an essential resource employed by graphic designers, just as glass, stone, steel, and other materials are employed by architects. Graphic designers sometimes create their own typefaces and custom lettering. More commonly, however, they tap the vast library of existing typefaces, choosing and combining them in response to a particular audience or situation. To do this with wit and wisdom requires knowledge of how—and why—letterforms have evolved.

Words originated as gestures of the body. The first typefaces were directly modeled on the forms of calligraphy. Typefaces, however, are not bodily gestures—they are manufactured images designed for infinite repetition. The history of typography reflects a continual tension between the hand and the machine, the organic and the geometric, the human body and the abstract system. These tensions, which marked the birth of printed letters over five hundred year ago, continue to energize typography today.

Movable type, invented by Johannes Gutenberg in Germany in the early fifteenth century, revolutionized writing in the West. Whereas scribes had previously manufactured books and documents by hand, printing with type allowed for mass production: large quantities of letters could be cast from a mold and assembled into "forms." After the pages were proofed, corrected, and printed, the letters were put away in gridded cases for reuse.

Movable type had been employed earlier in China but had proven less useful there. Whereas the Chinese writing system contains tens of thousands of distinct characters, the Latin alphabet translates the sounds of speech into a small set of marks, making it well-suited to mechanization. Gutenberg's famous Bible took the handmade manuscript as its model. Emulating the dense, dark handwriting known as "blackletter," he reproduced its erratic texture by creating variations of each letter as well as numerous ligatures (characters that combine two or more letters into a single form).

JOHANNES GUTENBERG Printed text, 1456.

This chapter extends and revises "Laws of the Letter," Ellen Lupton and J. Abbott Miller, *Design Writing Research: Writing on Graphic Design* (New York: Kiosk, 1996; London: Phaidon, 1999), 53–61.

learned to print in Mainz, the German birthplace of typography, before establishing his own printing press in Venice around 1465. His letters have strong vertical stems, and the transition from thick to thin emulates the path of a broad-nibbed pen.

GOLDEN TYPE *was created by the English design reformer William Morris in 1890. He sought to recapture the dark and solemn density of Jenson's pages.*

CENTAUR, *designed from 1912 to 1914 by Bruce Rogers, is a revival of Jenson's type that emphasizes its ribbonlike stroke.*

ADOBE JENSON *was designed in 1995 by Robert Slimbach, who reconceives historical type-faces for digital use. Adobe Jenson is less mannered and decorative than Centaur.*

RUIT *was designed in the 1990s by the Dutch typographer, teacher, and theorist Gerrit Noordzij. This digitally constructed font captures the dynamic, three-dimensional quality of fifteenth-century roman typefaces as well as their gothic (rather than humanist) origins. As Noordzij explains, Jenson "adapted the German letters to Italian fashion (somewhat rounder, somewhat lighter), and thus created roman type."*

SCALA *was introduced in 1991 by the Dutch typographer Martin Majoor. Although this thoroughly contemporary typeface has geometric serifs and rational, almost modular forms, it reflects the calligraphic origins of type, as seen in letters such as* a.

HUMANISM AND THE BODY

In fifteenth-century Italy, humanist writers and scholars rejected gothic scripts in favor of the *lettera antica*, a classical mode of handwriting with wider, more open forms. The preference for *lettera antica* was part of the Renaissance (rebirth) of classical art and literature. Nicolas Jenson, a Frenchman who had learned to print in Germany, established an influential printing firm in Venice around 1469. His typefaces merged the gothic traditions he had known in France and Germany with the Italian taste for rounder, lighter forms. They are considered among the first—and finest—roman typefaces.

Many typefaces we use today, including Garamond, Bembo, Palatino, and Jenson, are named for printers who worked in the fifteenth and sixteenth centuries. These typefaces are generally known as "humanist." Contemporary revivals of historical typefaces are designed to conform with modern technologies and current demands for sharpness and uniformity. Each revival responds to—or reacts against—the production methods, printing styles, and artistic habits of its own time. Some revivals are based on metal types, punches (steel prototypes), or drawings that still exist; most rely solely on printed specimens.

Italic letters, also introduced in fifteenth-century Italy, were modeled on a more casual style of handwriting. While the upright humanist scripts appeared in expensively produced books, the cursive form thrived in the cheaper writing shops, where it could be written more rapidly than the carefully formed *lettera antica*. Aldus Manutius, a Venetian printer, publisher, and scholar, used italic typefaces in his internationally distributed series of small, inexpensive printed books. For calligraphers, the italic form was economical because it saved time, while in printing, the cursive form saved space. Aldus Manutius often paired cursive letters with roman capitals; the two styles still were considered fundamentally distinct.

In the sixteenth century, printers began integrating roman and italic forms into type families with matching weights and x-heights (the height of the main body of the lowercase letter). Today, the italic style in most fonts is not simply a slanted version of the roman; it incorporates the curves, angles, and narrower proportions associated with cursive forms.

FRANCESCO
GRIFFO
designed roman and italic types for Aldus Manutius. The roman and italic were conceived as separate typefaces.

JEAN JANNON *created roman and italic types for the Imprimerie Royale, Paris, 1642, that are coordinated into a larger type family.*

On the complex origins of roman type, see Gerrit Noordzij, *Letterletter* (Vancouver: Hartley and Marks, 2000).

GEOFROY TORY *argued that letters should reflect the ideal human body. Regarding the letter A, he wrote: "the cross-stroke covers the man's organ of generation, to signify that Modesty and Chastity are required, before all else, in those who seek acquaintance with well-shaped letters."*
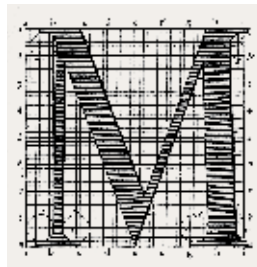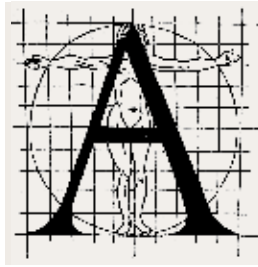
LOUIS SIMONNEAU *designed model letterforms for the printing press of Louis XIV. Instructed by a royal committee, Simonneau designed his letters on a finely meshed grid. A royal typeface (romain du roi) was then created by Philippe Grandjean, based on Simonneau's engravings.*

WILLIAM CASLON *produced typefaces in eighteenth-century England with crisp, upright characters that appear, as Robert Bringhurst has written, "more modelled and less written than Renaissance forms."*
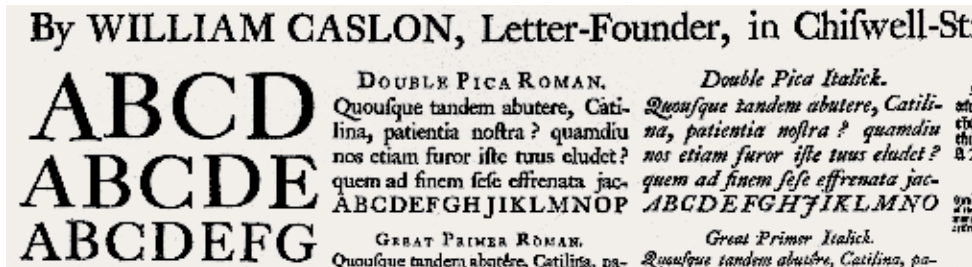
JOHN BASKERVILLE *was a printer working in England in the 1750s and 1760s. He aimed to surpass Caslon by creating sharply detailed letters with more vivid contrast between thick and thin elements. Whereas Caslon's letters were widely used during his own time, Baskerville's work was denounced by many of his contemporaries as amateur and extremist.*
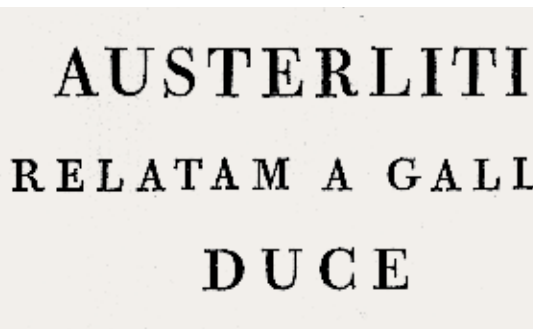
GIAMBATTISTA BODONI *created letters at the close of the eighteenth century that exhibit abrupt, unmodulated contrast between thick and thin elements, and razor-thin serifs unsupported by curved brackets. Similar typefaces were designed in the same period by François-Ambroise Didot (1784) in France and Justus Erich Walbaum (1800) in Germany.*

ENLIGHTENMENT AND ABSTRACTION

Renaissance artists sought standards of proportion in the idealized human body. The French designer and typographer Geofroy Tory published a series of diagrams in 1529 that linked the anatomy of letters to the anatomy of man. A new approach—distanced from the body—would unfold in the age of scientific and philosophical Enlightenment.

A committee appointed by Louis XIV in France in 1693 set out to construct roman letters against a finely meshed grid. Whereas Tory's diagrams were produced as woodcuts, the gridded depictions of the *romain du roi* (king's alphabet) were engraved, made by incising a copper plate with a tool called a graver. The lead typefaces derived from these large-scale diagrams reflect the linear character of engraving as well as the scientific attitude of the king's committee.

Engraved letters—whose fluid lines are unconstrained by the letterpress's mechanical grid—offered an apt medium for formal lettering. Engraved reproductions of penmanship disseminated the work of the great eighteenth-century writing masters. Books such as George Bickham's *The Universal Penman* (1743) featured roman letters—each engraved as a unique character—as well as lavishly curved scripts.

Eighteenth-century typography was influenced by new styles of handwriting and their engraved reproductions. Printers such as William Caslon in the 1720s and John Baskerville in the 1750s abandoned the rigid nib of humanism for the flexible steel pen and the pointed quill, writing instruments that rendered a fluid, swelling path. Baskerville, himself a master calligrapher, would have admired the thinly sculpted lines that appeared in the engraved writing books. He created typefaces of such sharpness and contrast that contemporaries accused him of "blinding all the Readers in the Nation; for the strokes of your letters, being too thin and narrow, hurt the Eye." To heighten the startling precision of his pages, Baskerville made his own inks and hot-pressed his pages after printing.

At the turn of the nineteenth century, Giambattista Bodoni in Italy and Firmin Didot in France carried Baskerville's severe vocabulary to new extremes. Their typefaces—which have a wholly vertical axis, sharp contrast between thick and thin, and crisp, waferlike serifs—were the gateway to an explosive vision of typography unhinged from calligraphy.

This accusation was reported to Baskerville in a letter from his admirer Benjamin Franklin. For the full letter, see F. E. Pardoe, *John Baskerville of Birmingham: Letter-Founder and Printer* (London: Frederick Muller Limited, 1975), 68.
See also Robert Bringhurst, *The Elements of Typographic Style* (Vancouver: Hartley and Marks, 1992, 1997).

The *romain du roi* was designed not by a typographer but by a government committee consisting of two priests, an accountant, and an engineer. —ROBERT BRINGHURST, 1992

P. VIRGILII MARONIS

BUCOLICA

ECLOGA I. cui nomen TITYRUS.

MELIBOEUS, TITYRUS.

Tityre, tu patulæ recubans sub tegmine fagi
Silveſtrem tenui Muſam meditaris avena:
Nos patriæ fines, et dulcia linquimus arva;
Nos patriam fugimus: tu, Tityre, lentus in umbra
5 Formoſam reſonare doces Amaryllida ſilvas.
    T. O Meliboee, Deus nobis hæc otia fecit:
Namque erit ille mihi ſemper Deus: illius aram
Sæpe tener noſtris ab ovilibus imbuet agnus.
Ille meas errare boves, ut cernis, et ipſum
10 Ludere, quæ vellem, calamo permiſit agreſti.
    M. Non equidem invideo; miror magis: undique totis
Uſque adeo turbatur agris. en ipſe capellas
Protenus æger ago: hanc etiam vix, Tityre, duco:
Hic inter denſas corylos modo namque gemellos,
15 Spem gregis, ah! ſilice in nuda connixa reliquit.
Sæpe malum hoc nobis, ſi mens non læva fuiſſet,
De cœlo tactas memini prædicere quercus:
Sæpe ſiniſtra cava prædixit ab ilice cornix.
Sed tamen, iſte Deus qui ſit, da, Tityre, nobis.
20   T. Urbem, quam dicunt Romam, Meliboee, putavi
Stultus ego huic noſtræ ſimilem, quo ſæpe ſolemus
Paſtores ovium teneros depellere fœtus.
Sic canibus catulos ſimiles, ſic matribus hœdos
                    A   Noram;

VIRGIL (LEFT) Book page, 1757. Printed by John Baskerville. *The typefaces created by Baskerville in the eighteenth century were remarkable—even shocking— in their day for their sharp, upright forms and stark contrast between thick and thin elements. In addition to a roman text face, this page utilizes italic capitals, large-scale capitals (generously letterspaced), small capitals (scaled to coordinate with lowercase text), and non-lining or old-style numerals (designed with ascenders, descenders, and a small body height to work with lowercase characters).*

RACINE (RIGHT) Book page, 1801. Printed by Firmin Didot. *The typefaces cut by the Didot family in France were even more abstract and severe than those of Baskerville, with slablike, unbracketed serifs and a stark contrast from thick to thin. Nineteenth-century printers and typographers called these glittering typefaces "modern."*

Both pages reproduced from William Dana Orcutt, In Quest of the Perfect Book *(New York: Little, Brown and Company, 1926); margins are not accurate.*

LA THÉBAÏDE,

OU

LES FRERES ENNEMIS,

TRAGÉDIE.

ACTE PREMIER.

—

SCENE I.

JOCASTE, OLYMPE.

JOCASTE.

Ils sont sortis, Olympe? Ah! mortelles douleurs!
Qu'un moment de repos me va coûter de pleurs!
Mes yeux depuis six mois étoient ouverts aux larmes,
Et le sommeil les ferme en de telles alarmes!
Puisse plutôt la mort les fermer pour jamaïs,
Et m'empêcher de voir le plus noir des forfaits!
Mais en sont-ils aux mains?

440 *Plan for the Improvement of the Art of Paper War.*

whilst a passionate man, engaged in a warm controversy, would thunder vengeance in

French Canon

It follows of course, that writers of great irascibility should be charged higher for a work of the same length, than meek authors; on account of the extraordinary space their performances must necessarily occupy; for these gigantic, wrathful types, like ranters on the stage, must have sufficient elbow-room.

For example: Suppose a newspaper quarrel to happen between * M and L.   M begins the attack pretty smartly in

Long Primer.

L replies in

Pica Roman.

M advances to

Great Primer.

L retorts in

Double Pica.

And so the contest swells to

Rascal,
Villain

* Lest some ill-disposed person should misapply these initials, I think proper to declare, that M signifies Merchant, and L Lawyer.

Coward.

Cow-
ard,

in five line Pica ; which, indeed, is as far as the art of print-
ing, or a modern quarrel can well go.

A philosophical reason might be given to prove that large
types will more forcibly affect the optic nerve than those of a
smaller size, and are therefore naturally expressive of energy
and vigour. But I leave this discussion for the amusement of
the gentlemen lately elected into our philosophical society.
It is sufficient for me, if my system should be found to be jus-
tified by experience and fact, to which I appeal.

I recollect a case in point. Some few years before the war,
the people of a western county, known by the name of Paxton
Boys, assembled, on account of some discontent, in great
numbers, and came down with hostile intentions against the
peace of government, and with a particular view to some lead-
ing men in the city. Sir John St. Clair, who assumed military
command for defence of the city, met one of the obnoxious
persons in the street, and told him that he had seen the ma-
nifesto of the insurgents, and that his name was particularised
in letters as long as his fingers. The gentleman immediately
picked up his most valuable effects, and sent them with his
family into Jersey for security. Had sir John only said that he
had seen his name in the manifesto, it is probable that he would
not have been so seriously alarmed : but the unusual size of
the letters was to him a plain indication, that the insurgents
were determined to carry their revenge to a proportionable
extremity.

I could confirm my system by innumerable instances in
fact and practice. The title-page of every book is a proof in
point. It announces the subject treated of, in conspicuous
characters ; as if the author stood at the door of his edifice,

H   calling

5

PLAN FOR THE IMPROVEMENT OF
THE ART OF PAPER WAR Satirical
essay by Francis Hopkinson, *The
American Museum*, Volume 1 (1787).
Courtesy of the Boston Public
Library. *This eighteenth-century essay
is an early example of expressive
typography. The author, poking fun at
the emerging news media, suggests a
"paper war" between a lawyer and a
merchant. As the two men toss attacks
at each other, the type gets progressively
bigger. The terms* Long Primer, Pica
Roman, Great Primer, Double Pica,
and Five Line Pica *were used at the
time to identify type sizes. The* ſ *symbol
is an* s. *Hopkinson was no stranger to
design. He created the stars and stripes
motif of the American flag.*
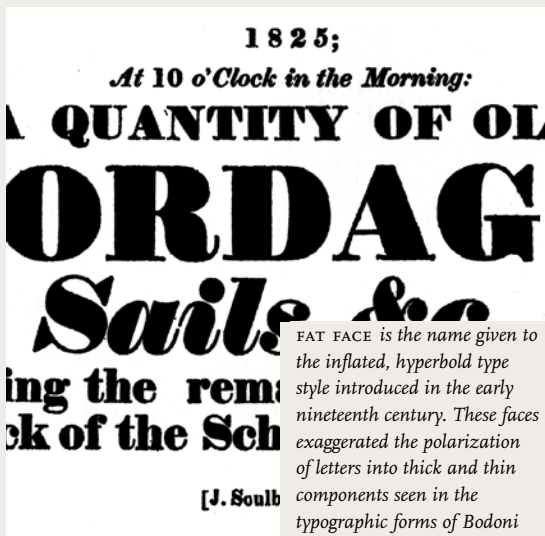
FAT FACE *is the name given to the inflated, hyperbold type style introduced in the early nineteenth century. These faces exaggerated the polarization of letters into thick and thin components seen in the typographic forms of Bodoni and Didot.*

EXTRA CONDENSED *typefaces are designed to fit in narrow spaces. Nineteenth-century advertisements often combined fonts of varying style and proportion on a single page. These bombastic mixtures were typically aligned, however, in static, centered compositions.*

EGYPTIAN, *or slab, typefaces transformed the serif from a refined detail to a load-bearing slab. As an independent architectural component, the slab serif asserts its own weight and mass. Introduced in 1806, this style was quickly denounced by purists as "a typographical monstrosity."*
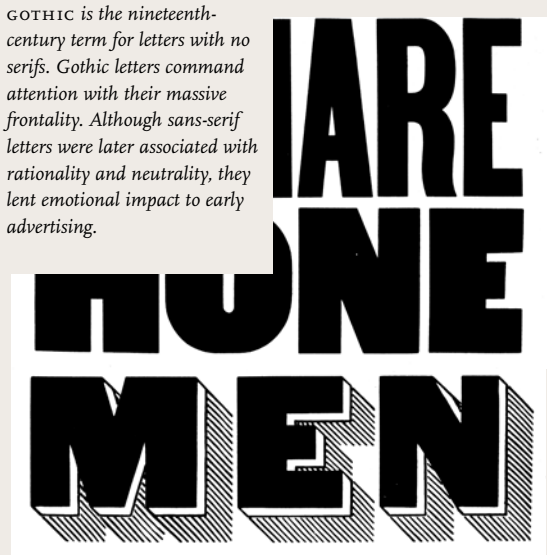
GOTHIC *is the nineteenth-century term for letters with no serifs. Gothic letters command attention with their massive frontality. Although sans-serif letters were later associated with rationality and neutrality, they lent emotional impact to early advertising.*

My person was hideous, my stature gigantic. What did this mean? Who was I? What was I?… Accursed creator! Why did you create a monster so hideous that even you turned away from me in disgust? —MARY SHELLEY, *Frankenstein,* **1831**