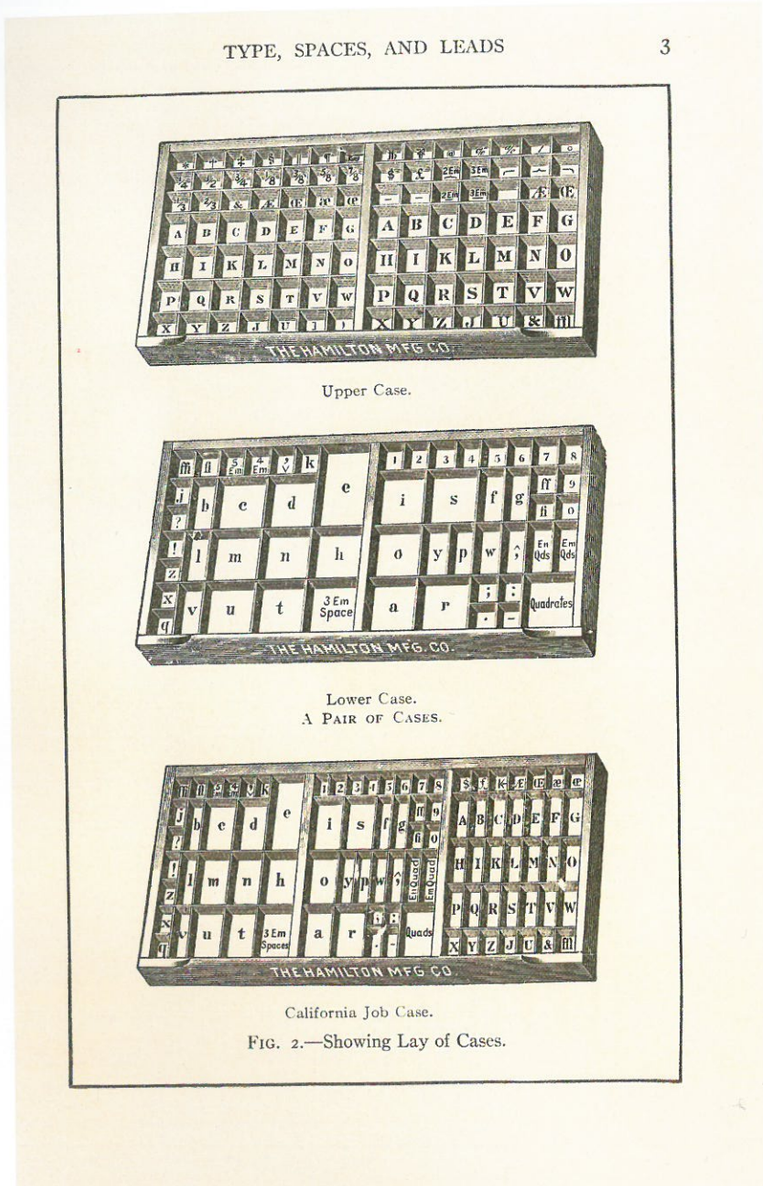


TYPE, SPACES, AND LEADS
Diagram, 1917. Author: Frank S. Henry. *In a letterpress printing shop, gridded cases hold fonts of type and spacing material. Capital letters are stored in a drawer above the minuscule letters. Hence the terms "uppercase" and "lowercase" are derived from the physical space of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

LETTER

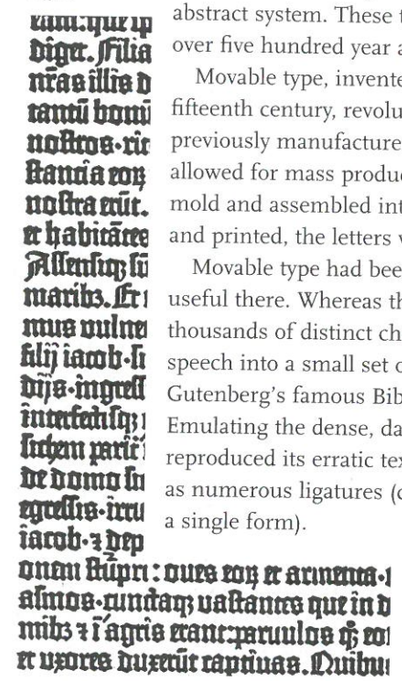
THIS IS NOT A BOOK ABOUT FONTS. It is a book about how to use them. Typefaces are an essential resource employed by graphic designers, just as glass, stone, steel, and other materials are employed by architects. Graphic designers sometimes create their own typefaces and custom lettering. More commonly, 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.

NICOLAS JENSON *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.*

ilos appellatur mariti
euir dicitur frater mar
ratriæ appellantur qu
mitini fratrum & mat
atrueles matrum fratr
ōſobrini ex duabus ed
ta ſunt in antiquis au

the iiii wekis, and how l
lord, yet the chirche mal
that is to wete, of that he
and of that he cometh t
in thoffyce of the chirc
tynges that ben in this
one partie, & that othe
cause of the comynge of
ben of joye and gladne

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.*

Lorem ipsum dolor si
consectetuer adipiscing el
Integer pharetra, nisl u
luctus ullamcorper, au
tortor egestas ante, vel
pede urna ac neque. M
ac mi eu purus tincidu

Lorem ipsum dolor si
consectetuer adipiscin
Integer pharetra, nisl
luctus ullamcorper, au
tortor *egestas* ante, vel
pharetra pede urna ac
neque. Mauris ac mi

ADOBE JENSON *was designed in 1995 by Robert Slimbach, who reconceives historical typefaces 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."*

vanum laboraverunt
si Dominus custodie
istra vigilavit qui cos
num est vobis ante lu
rgere postquam sede
i manducatis panem
m dederit dilectis sui
ALMI IVXTA LXX

Lorem ipsum dolor s
consectetuer adipisci
Integer pharetra, nis
ullamcorper, augue t
ante, vel *pharetra* pec
neque. Mauris ac mi
tincidunt faucibus. P
dignissim lectus. Nun

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.

S ed ne forte tuo carca
Hic timor eſt ipſis
N on adeo leuiter noſt
Vt meus oblito pulu
I llic phylacides iucu
Non potuit cæcis im
S ed cupidus fālſis atti
Theſſalis antiquam
I llic quicquid ero ſer
Traicit & fāti litto
I llic formoſæ uenian
Quas dedit arguti
Quarum nulla tua fu
Gratior, & tellus h
Quamuis te longæ re
Cara tamen lachry

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

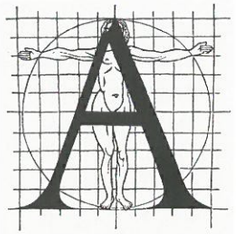
JEAN JANNON *created roman and italic types for the Imprimerie Royale, Paris, 1642, that are coordinated into a larger type family.*

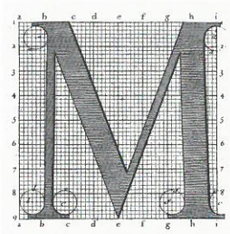
comme i'ay des-ia remarqué, [a] S. Augustin demande aux Donatiſtes en vne ſemblable occurrence : *Quoy donc ? lors que nous liſons, oublions nous comment nous auons accouſtumé de parler? l'eſcriture du grand Dieu*

[a] *Aug. lib. 33. contra Fauſt. c. 7.* Quid ergo? cum legimus, obliuiſcimur quemadmodum loqui ſoleamus? An ſcriptura Dei aliter no-

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

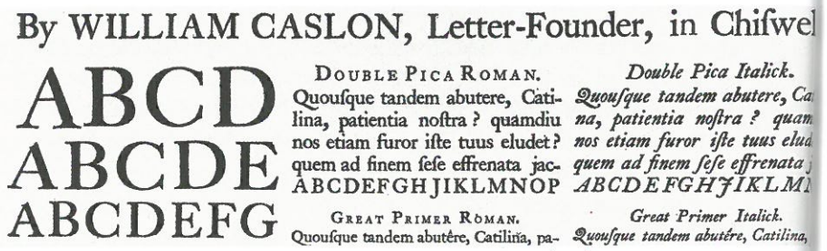
GEOFROY TORY *argued that letters should reflect the ideal human body. Regarding the letter A, he wrote: "the cross-stroke covers the man's organ of generation, to signify that Modesty and Chastity are required, before all else, in those who seek acquaintance with well-shaped letters."*

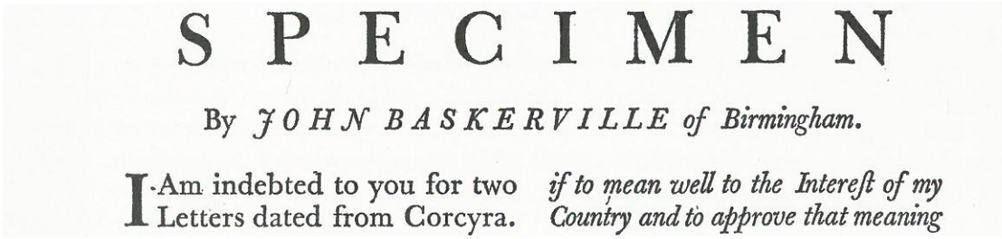




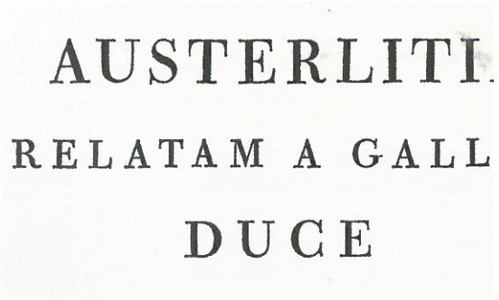
LOUIS SIMONNEAU *designed model letterforms for the printing press of Louis XIV. Instructed by a royal committee, Simonneau designed his letters on a finely meshed grid. A royal typeface (romain du roi) was then created by Philippe Grandjean, based on Simonneau's engravings.*

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."*



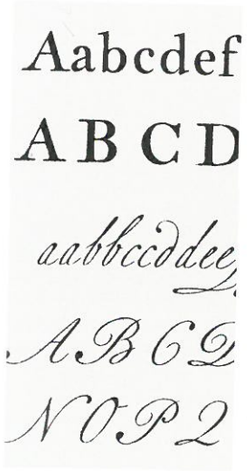


JOHN BASKERVILLE *was a printer working in England in the 1750s and 1760s. He aimed to surpass Caslon by creating sharply detailed letters with more vivid contrast between thick and thin elements. Whereas Caslon's letters were widely used during his own time, Baskerville's work was denounced by many 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



GEORGE BICKHAM, *1743. Samples of "Roman Print" and "Italian Hand."*

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 Melibœe, 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, Melibœe, 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.

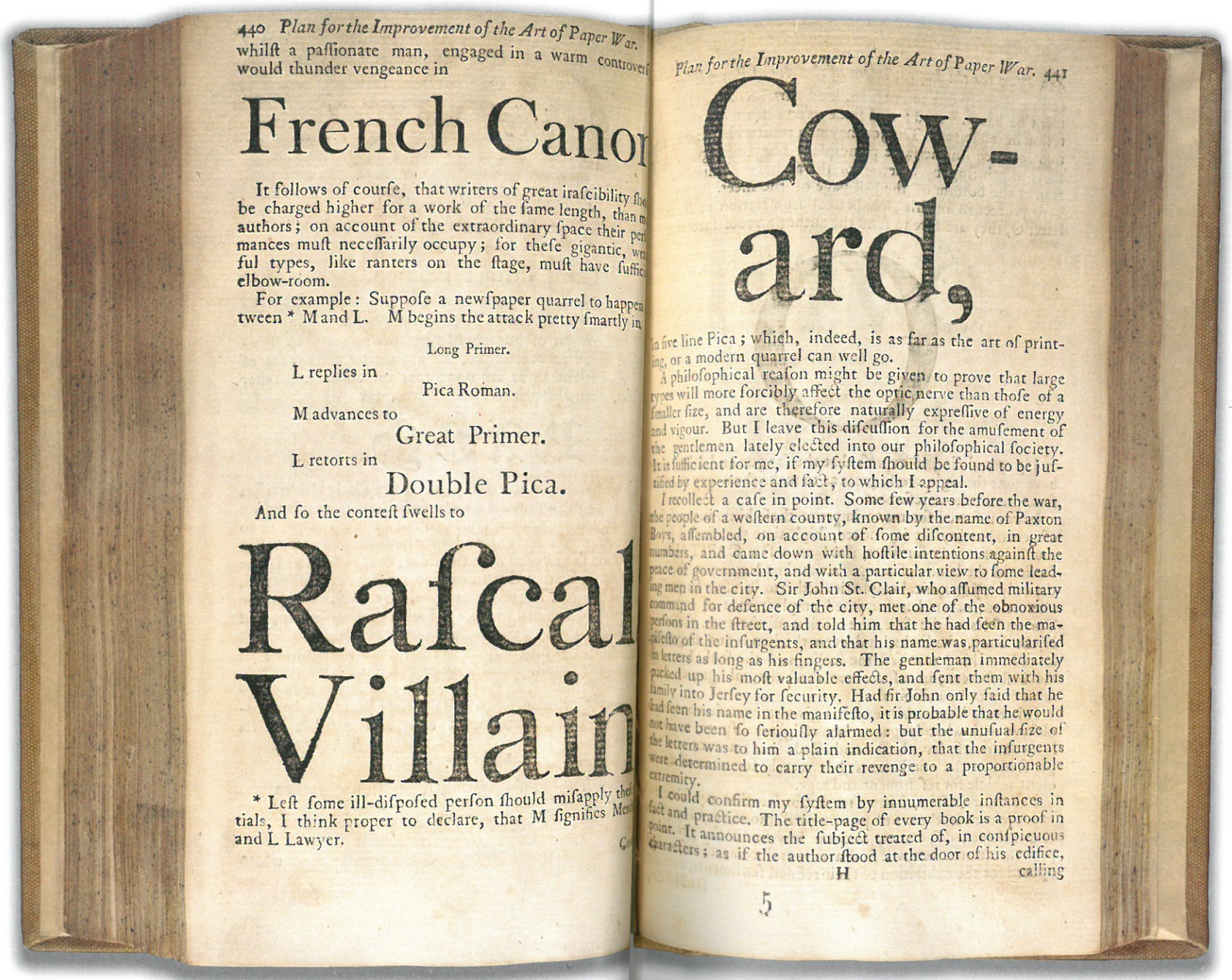
ACTE PREMIER.

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 controver
would thunder vengeance in

French Canon

It follows of courſe, that writers of great iraſcibility ſho
be charged higher for a work of the ſame length, than m
authors; on account of the extraordinary ſpace their per
mances muſt neceſſarily occupy; for theſe gigantic, wra
ful types, like ranters on the ſtage, muſt have ſuffici
elbow-room.

For example: Suppoſe a newſpaper quarrel to happen
tween * 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 the
tials, I think proper to declare, that M ſignifies Mer
and L Lawyer.

Co

Plan for the Improvement of the Art of Paper War. 441

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-
niſeſto of the inſurgents, and that his name was particularized
in letters as long as his fingers. The gentleman immediately
packed 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.

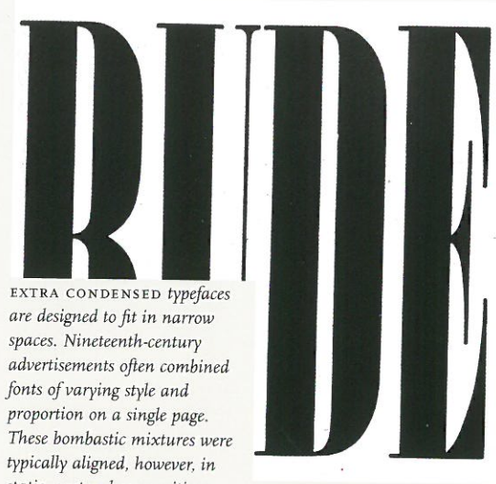
I could confirm my ſyſtem by innumerable inſtances in
fact and practice. The title-page of every book is a proof in
point. It announces the ſubject treated of, in conſpicuous
characters; as if the author ſtood at the door of his edifice,

H calling

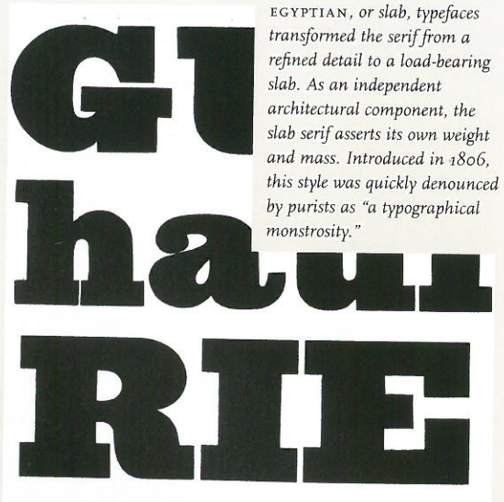
5

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.*

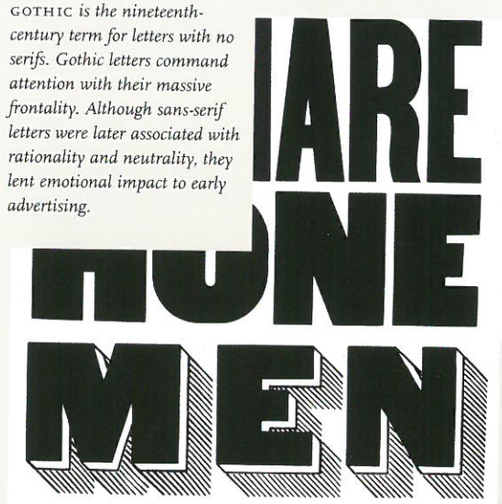


EXTRA CONDENSED *typefaces are designed to fit in narrow spaces. Nineteenth-century advertisements often combined fonts of varying style and proportion on a single page. These bombastic mixtures were typically aligned, however, in static, centered compositions.*



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

MONSTER FONTS

Although Bodoni and Didot fueled their designs with the calligraphic practices of their time, they created forms that collided with typographic tradition and unleashed a strange new world, where the structural attributes of the letter—serif and stem, thick and thin strokes, vertical and horizontal stress—would be subject to bizarre experiments. In search of a beauty both rational and sublime, Bodoni and Didot had created a monster: an abstract and dehumanized approach to the design of letters.

With the rise of industrialization and mass consumption in the nineteenth century came the explosion of advertising, a new form of communication demanding new kinds of typography. Type designers created big, bold faces by embellishing and engorging the body parts of classical letters. Fonts of astonishing height, width, and depth appeared—expanded, contracted, shadowed, inlined, fattened, faceted, and floriated. Serifs abandoned their role as finishing details to become independent architectural structures, and the vertical stress of traditional letters canted in new directions.

Type historian Rob Roy Kelly studied the mechanized design strategies that served to generate a spectacular variety of display letters in the nineteenth century. This diagram shows how the basic square serif form—called Egyptian or slab—was cut, pinched, pulled, and curled to spawn new species of ornament. Serifs were transformed from calligraphic end-strokes into independent geometric elements that could be freely adjusted.

Lead, the material for casting metal type, is too soft to hold its shape at large sizes under the pressure of the printing press. In contrast, type cut from wood can be printed at gigantic scales. The introduction of the combined pantograph and router in 1834 revolutionized wood-type manufacture. The pantograph is a tracing device that, when linked to a router for carving, allows a parent drawing to spawn variants with different proportions, weights, and decorative excresences.

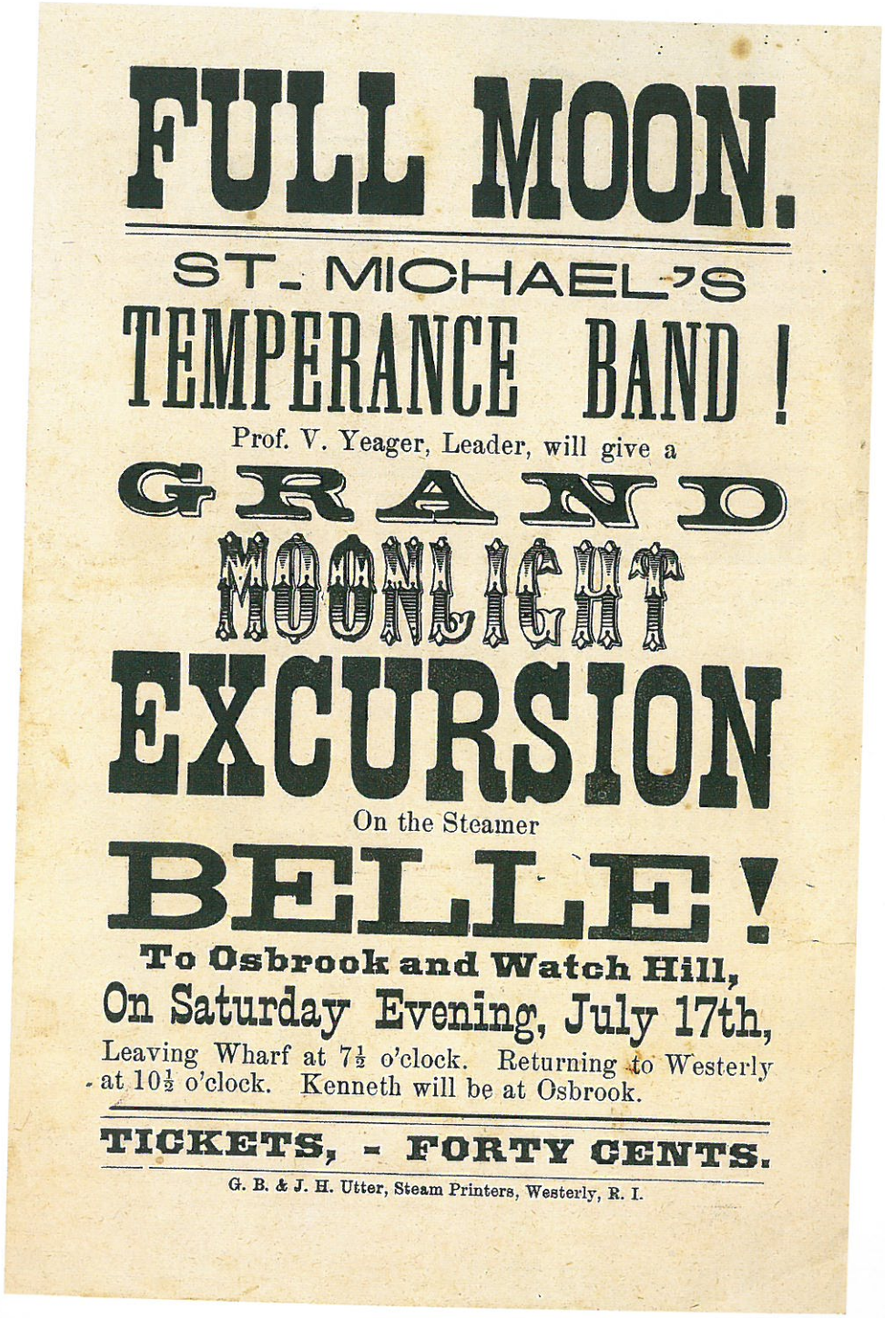
This mechanized design approach treated the alphabet as a flexible system divorced from calligraphy. The search for archetypal, perfectly proportioned letterforms gave way to a new view of typography as an elastic system of formal features (weight, stress, stem, crossbars, serifs, angles, curves, ascenders, descenders). The relationships among letters in a typeface became more important than the identity of individual characters.

For extensive analysis and examples of decorated types, see Rob Roy Kelly, *American Wood Type: 1828–1900, Notes on the Evolution of Decorated and Large Letters* (New York: Da Capo Press, 1969). See also Ruari McLean, "An Examination of Egyptians," in *Texts on Type: Critical Writings on Typography*, ed. Steven Heller and Philip B. Meggs (New York: Allworth Press, 2001), 70–76.

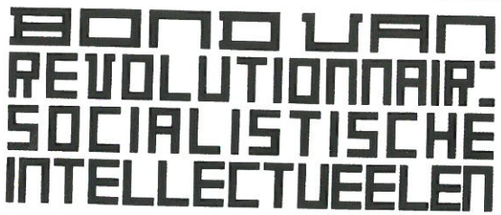
DURYEAS' IMPROVED CORNSTARCH (LEFT)
Lithographic trade card, 1878. *The rise of advertising in the nineteenth century stimulated demand for large-scale letters that could command attention in urban space. Here, a man is shown posting a bill in flagrant disregard for the law, while a police officer approaches from around the corner.*

FULL MOON (RIGHT)
Letterpress poster, 1875. *A dozen different fonts are used in this poster for a steamship cruise. A size and style of typeface has been chosen for each line to maximize the scale of the letters in the space allotted. Although the typefaces are exotic, the centered layout is as static and conventional as a tombstone.*

Printing, having found in the book a refuge in which to lead an autonomous existence, is pitilessly dragged out into the street by advertisements....Locust swarms of print, which already eclipse the sun of what is taken for intellect in city dwellers, will grow thicker with each succeeding year. —WALTER BENJAMIN, 1925



THEO VAN DOESBURG, *founder and chief promoter of the Dutch De Stijl movement, designed this alphabet with perpendicular elements in 1919. Applied here to the letterhead of the Union of Revolutionary Socialists, the hand-drawn characters vary in width, allowing them to fill out the overall rectangle. The De Stijl movement called for the reduction of painting, architecture, objects, and letters to elemental units.*

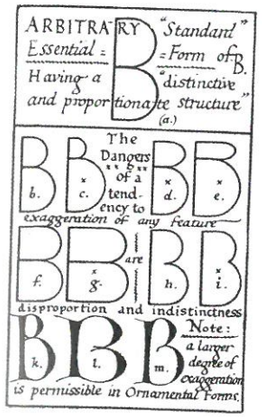


VILMOS HUSZÁR *designed this logo for the magazine* De Stijl *in 1917. Whereas van Doesburg's characters are unbroken, Huszár's letters consist of pixel-like modules.*

HERBERT BAYER *created this typeface design, called universal, at the Bauhaus in 1925. Consisting only of lowercase letters, it is built from straight lines and circles.*

PAUL RENNER *designed Futura in Germany in 1927. Although it is strongly geometric, with perfectly round Os, Futura is a practical, subtly designed typeface that remains widely used today.*

REFORM AND REVOLUTION



EDWARD JOHNSTON *based this 1906 diagram of "essential" characters on ancient Roman inscriptions. While deriding commercial lettering, Johnston accepted the embellishment of medieval-inspired forms.*

Some designers viewed the distortion of the alphabet as gross and immoral, tied to a destructive and inhumane industrial system. Writing in 1906, Edward Johnston revived the search for an essential, standard alphabet and warned against the "dangers" of exaggeration. Johnston, inspired by the nineteenth-century Arts and Crafts movement, looked back to the Renaissance and Middle Ages for pure, uncorrupted letterforms.

Although reformers like Johnston remained romantically attached to history, they redefined the designer as an intellectual distanced from the commercial mainstream. The modern design reformer was a critic of society, striving to create objects and images that would challenge and revise dominant habits and practices.

The avant-garde artists of the early twentieth century rejected historical forms but adopted the model of the critical outsider. Members of the De Stijl group in the Netherlands reduced the alphabet to perpendicular elements. At the Bauhaus, Herbert Bayer and Josef Albers constructed letters from basic geometric forms—the circle, square, and triangle—which they viewed as elements of a universal language of vision.

Such experiments approached the alphabet as a system of abstract relationships. Like the popular printers of the nineteenth century, avant-garde designers rejected the quest for essential letters grounded in the human hand and body, but they offered austere, theoretical alternatives in place of the solicitous novelty of mainstream advertising.

Assembled like machines from modular components, these experimental designs emulated factory production. Yet most were produced by hand rather than as mechanical typefaces (although many are now available digitally). Futura, completed by Paul Renner in 1927, embodied the obsessions of the avant garde in a multipurpose, commercially available typeface. Although Renner disdained the active movement of calligraphy in favor of forms that are "calming" and abstract, he tempered the geometry of Futura with subtle variations in stroke, curve, and proportion. Renner designed Futura in numerous weights, viewing his type family as a painterly tool for constructing a page in shades of gray.

On Futura, see Christopher Burke, *Paul Renner: The Art of Typography* (New York: Princeton Architectural Press, 1998). On the experimental typefaces of the 1920s and 1930s, see Robin Kinross, *Unjustified Texts: Perspectives on Typography* (London: Hyphen Press, 2002), 233–45.

The calming, abstract forms of those new typefaces that dispense with handwritten movement offer the typographer new shapes of tonal value that are very purely attuned. These types can be used in light, semi-bold, or in saturated black forms. —PAUL RENNER, 1931

WIM CROUWEL *published his designs for a "new alphabet," consisting of no diagonals or curves, in 1967. The Foundry (London) began releasing digital editions of Crouwel's typefaces in 1997.*

TYPE AS PROGRAM

Responding in 1967 to the rise of electronic communication, the Dutch designer Wim Crouwel published designs for a "new alphabet" constructed from straight lines. Rejecting centuries of typographic convention, he designed his letters for optimal display on a video screen (CRT), where curves and angles are rendered with horizontal scan lines. In a brochure promoting his new alphabet, subtitled "An Introduction for a Programmed Typography," he proposed a design methodology in which decisions are rule-based and systematic.

WIM CROUWEL *presented this "scanned" version of a Garamond* a *in contrast with his own new alphabet, whose forms accept the gridded structure of the screen. See Wim Crouwel,* New Alphabet *(Amsterdam: Total Design, 1967).*

ZUZANA LICKO *created coarse-resolution fonts for desktop screens and printers in 1985. These fonts have since been integrated into Emigre's extensive Lo-Res font family, designed for print and digital media.*

See Rudy VanderLans and Zuzana Licko, *Emigre: Graphic Design into the Digital Realm* (New York: Van Nostrand Reinhold, 1993) and *Emigre No. 70: The Look Back Issue, Selections from Emigre Magazine, 1984–2009* (Berkeley: Gingko Press, 2009).

In the mid-1980s, personal computers and low-resolution printers put the tools of typography in the hands of a broader public. In 1985 Zuzana Licko began designing typefaces that exploited the rough grain of early desktop systems. While other digital fonts imposed the coarse grid of screen displays and dot-matrix printers onto traditional typographic forms, Licko embraced the language of digital equipment. She and her husband, Rudy VanderLans, cofounders of Emigre Fonts and *Emigre* magazine, called themselves the "new primitives," pioneers of a technological dawn.

By the early 1990s, with the introduction of high-resolution laser printers and outline font technologies such as PostScript, type designers were less constrained by low-resolution outputs. While various signage systems and digital output devices still rely on bitmap fonts today, it is the fascination with programmed, geometric structures that has enabled bitmap forms to continue evolving as a visual ethos in print and digital media.

Living with computers gives funny ideas. —WIM CROUWEL, 1967

ED FELLA *produced a body of experimental typography that strongly influenced typeface design in the 1990s. His posters for the Detroit Focus Gallery feature damaged and defective forms, drawn by hand or culled from third-generation photocopies or from sheets of transfer lettering. Collection of the Cooper-Hewitt, National Design Museum.*

TYPE AS NARRATIVE

In the early 1990s, as digital design tools began supporting the seamless reproduction and integration of media, many designers grew dissatisfied with clean, unsullied surfaces, seeking instead to plunge the letter into the harsh and caustic world of physical processes. Letters, which for centuries had sought perfection in ever more exact technologies, became scratched, bent, bruised, and polluted.

Template Gothic: flawed technology

Barry Deck's typeface Template Gothic, designed in 1990, is based on letters drawn with a plastic stencil. The typeface thus refers to a process that is at once mechanical and manual. Deck designed Template Gothic while he was a student of Ed Fella, whose experimental posters inspired a generation of digital typographers. After Template Gothic was released commercially by Emigre Fonts, its use spread worldwide, making it an emblem of digital typography for the 1990s.

Dead History: feeding on the past

P. Scott Makela's typeface Dead History, also designed in 1990, is a pastiche of two existing typefaces: the traditional serif font Centennial and the Pop classic VAG Rounded. By manipulating the vectors of readymade fonts, Makela adopted the sampling strategy employed in contemporary art and music. He also embraced the burden of history and precedent, which play a role in nearly every typographic innovation.

CcDdEeFfGgHhIiJjKk

The Dutch typographers Erik van Blokland and Just van Rossum have combined the roles of designer and programmer, creating typefaces that embrace chance, change, and uncertainty. Their 1990 typeface Beowulf was the first in a series of typefaces with randomized outlines and programmed behaviors.

The industrial methods of producing typography meant that all letters had to be identical....Typography is now produced with sophisticated equipment that doesn't impose such rules. The only limitations are in our expectations. —ERIK VAN BLOKLAND AND JUST VAN ROSSUM, 2000

Although the 1990s are best remembered for images of chaos and decay, serious type designers continued to build general purpose typefaces designed to comfortably accommodate broad bodies of text. Such workhorse type families provide graphic designers with flexible palettes of letterforms.

Mrs Eaves: WORKING *woman* **seeks** *reliable* **mate**

Licko produced historical revivals during the 1990s alongside her experimental display faces. Her 1996 typeface Mrs Eaves, inspired by the eighteenth-century types of Baskerville, became one of the most popular typefaces of its time. In 2009, Mrs Eaves was joined by Mr Eaves, a sans-serif version of the feminine favorite.

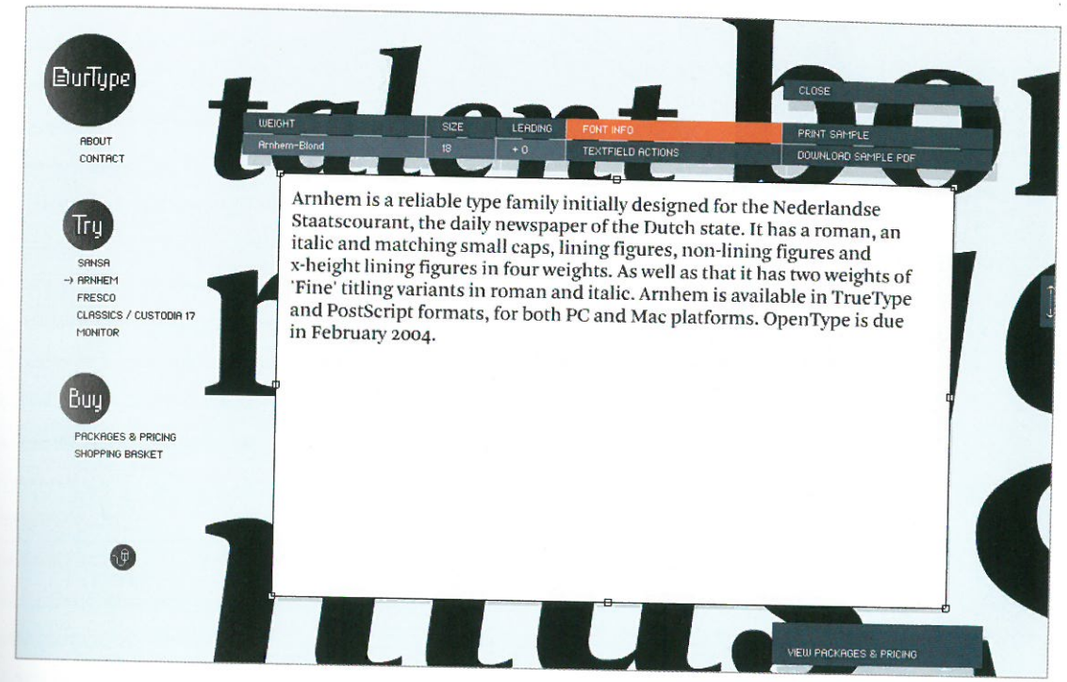
Quadraat: *all-purpose* hard**core** BAROQUE

Fred Smeijers's Quadraat (above) and Martin Majoor's Scala (used for the text of this book) offer crisp interpretations of typographic tradition. These typefaces look back to sixteenth-century printing from a contemporary point of view, as seen in their simply drawn, decisively geometric serifs. Introduced in 1992, the Quadraat family soon expanded to include sans-serif forms in numerous weights and styles.

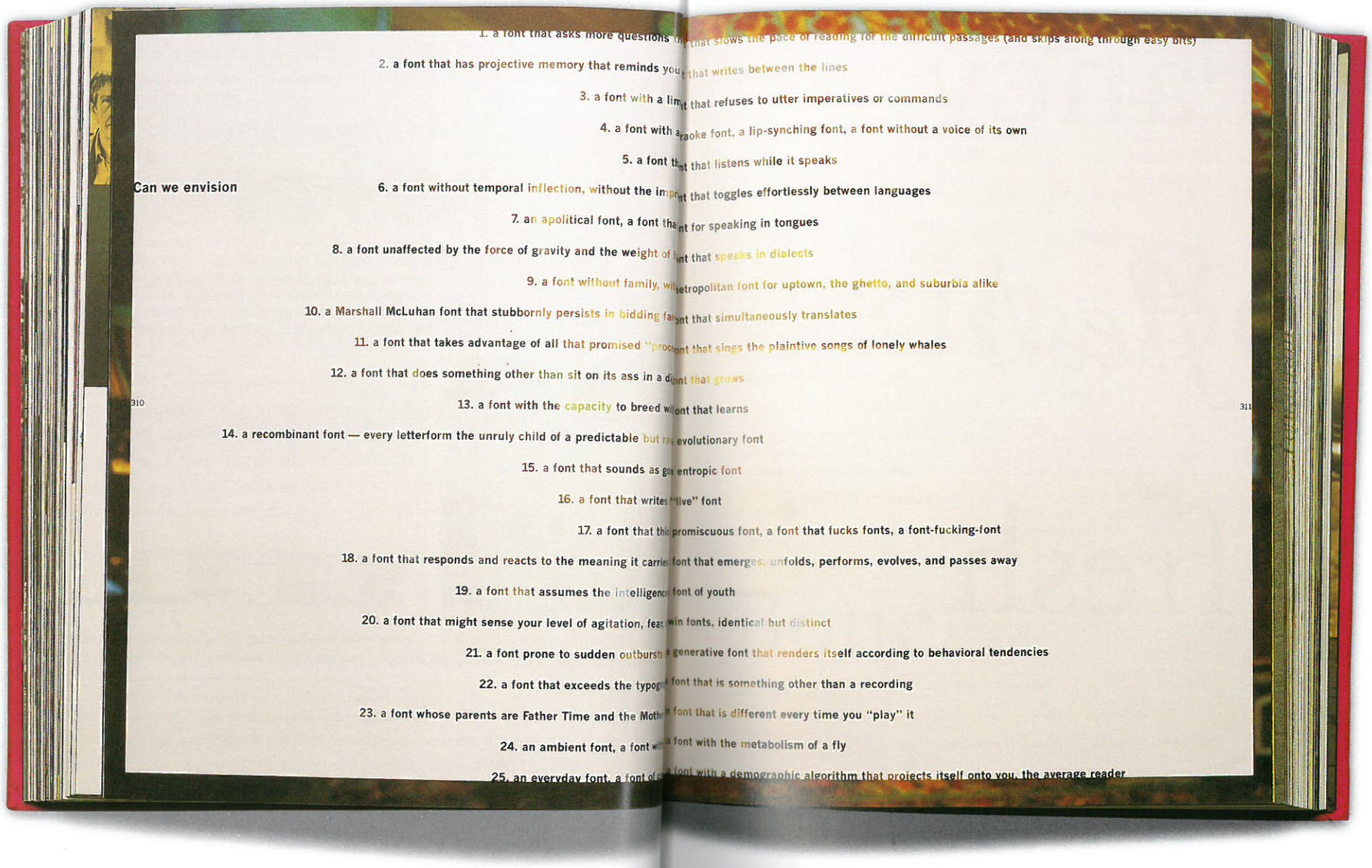
Gotham: Blue-Collar **Curves**

In 2000 Tobias Frere-Jones introduced Gotham, derived from letters found at the Port Authority Bus Terminal in New York City. With its distinctive yet utilitarian style, Gotham became the signature typeface of Barack Obama's 2008 presidential campaign. By 2009, typography's First Family had over fifty weights and styles.

When choosing a typeface, graphic designers consider the history of typefaces, their current connotations, as well as their formal qualities. The goal is to find an appropriate match between a style of letters and the specific social situation and body of content that define the project at hand. There is no playbook that assigns a fixed meaning or function to every typeface; each designer must confront the library of possibilities in light of a project's unique circumstances.



OURTYPE.COM Website, 2004. Design: Fred Smeijers and Rudy Geeraerts. *This Flash-based website for a digital type foundry allows users to test fonts on the fly. The designers launched their own "label" after creating typefaces such as Quadraat for FontShop International. Shown here is Arnhem.*



LIFE STYLE Book, 2000. Design: Bruce Mau. Publisher: Phaidon. Photograph: Dan Meyers. *In this postindustrial manifesto, graphic designer Bruce Mau imagines a typeface that comes alive with simulated intelligence.*