Review and summaries: *The History of Typographic Writing — The 20th century Volume 2 (ch. 6–8+), from 1950 to 2000*

Charles Bigelow

Histoire de l'Écriture Typographique — le XXième siècle; tome II/II, de 1950 à 2000. Jacques André, editorial direction. Atelier Perrousseaux, Gap, France, 2016, ISBN 978-2-36765-006-7, `tinyurl.com/ja-xxieme-ii`. 364 pp., 391 figures (illustrations, photos, diagrams, etc.), illustrated end papers. Also available as an ebook. The book is in French. Volume 1 (reviewed in *TUGboat* 38:1) covers the years 1900 to 1950; chapters 1–5 of volume 2 were reviewed in *TUGboat* 38:2.

Interpolated comments by the reviewer are in square brackets; the plain text summarizes and condenses the original writing, to the best of the reviewer's abilities.

6. Frank Adebiaye: The first commercial digital fonts (*Les premières fontes numériques commerciales*)

The first digital typesetting fonts were developed in the late 1960s for the Hell Digiset, the first digital typesetting machine. Digi Grotesk (1968), was a rasterized version of sans-serif Neuzeit Grotesk (c. 1930). In the 1970s, Hell produced original digital typeface families by Hermann Zapf, including Marconi (1976) and Edison (1978) for news display and text, respectively. [In the 1980s, Hell produced other original designs, including Aurelia (1982) by Hermann Zapf, and Isadora (1983) by Kris Holmes.]

American Linotype produced Bell Centennial (1976), a digital type family designed by Matthew Carter for telephone directories. Also for directories, Ladislas Mandel digitized his Galfra type in 1978.

In the 1980s, several manufacturers of digital typesetters plagiarized popular typefaces and marketed them under pseudonyms. [CB: The problem of typeface design protection is a recurrent thread in this chapter 6. For some history, see "Notes on typeface protection", *TUGboat* 7:3, 1986, `tug.org/TUGboat/tb07-3/tb16bigelow.pdf`.]

In the mid-1980s, Xerox, Adobe, and Apple licensed and produced digital versions of Times and Helvetica for laser printers and personal computers.

Several other firms developed original digital designs in the 1980s. Among them were

- Bigelow & Holmes, with Lucida (1984) and Lucida Sans (1985);
- URW, with URW Grotesk (1985) and URW Antiqua (1985), both by Hermann Zapf;

- Donald Knuth, with Computer Modern (1980–1992);
- Bitstream, with Carmina (1987) by Gudrun Zapf von Hesse, Charter (1987) by Matthew Carter, and Amerigo (1987) by Gerard Unger;
- Adobe, with ITC Stone (1988) by Sumner Stone, Adobe Garamond (1989) and Utopia (1989), both by Rob Slimbach, Trajan (1989), Lithos (1989), and Charlemagne (1989), all by Carol Twombly;
- Agfa [formerly Compugraphic] produced the Rotis (1988) super-family of serif and sans-serif faces by Otl Aicher.
- "Punk" fonts issued from several firms, including: Emigré, with Matrix (1986) by Zuzana Licko, and FontFont, with Beowulf (1989) by Just van Rossum and Erik van Blokland.
- In France in the same decade, the independent type designers of typoGabor developed original fonts for Alphatype digital typesetters.

In the early 1990s, publication of Adobe's PostScript Type 1 font format and Apple–Microsoft's TrueType format resulted in a rush of new and original typefaces for the expanding digital typography market.

From FontShop and FontFont came FF Scala (1990) by Martin Majoor, FF Meta (1991) by Erik Spiekermann, and FF DIN (1995) by Albert-Jan Pool, among many others. From Apple came TrueType fonts for New York, Chicago, Monaco, and Geneva

(1991) by Bigelow & Holmes, first created as Macintosh bitmap fonts by Susan Kare (1984).

In 1992, Microsoft released TrueType fonts of Times New Roman, Arial, and Courier New, as well as a set of fonts equivalent to the Apple LaserWriter Plus set. Also in 1992, Microsoft released a large expansion of the Lucida family with new and original designs of Lucida Bright, Sans, Calligraphy, Blackletter, Handwriting, Fax, Typewriter, and mathematical symbol fonts, all from Bigelow & Holmes.

Windows users accepted Arial as a substitute for Helvetica, evidently being similar enough in appearance (and metrically identical), but Microsoft's distribution of "Book Antiqua" by Monotype (1992) sparked criticism from typographers that the face was a plagiarism of Zapf's Palatino. [The different reactions to Arial and Book Antiqua suggest that the grotesque sans-serif genre had become a "swarm" of vaguely similar and quasi-substitutable typefaces, whereas a distinctively artistic creation like Palatino could not be copied without being called either a travesty, or a rip-off, or both.]

Digital technology not only encouraged the creation of more typefaces but also enabled more complex designs, especially in the creation of alternate characters. In some cases, the design was ahead of the technology. In France, François Boltana created Champion, a joining script in English roundhand style, incorporating thousands of alternative glyphs, but a decade before OpenType made such fonts practical. Begun in 1989, the "Champion Pro" version was released in 2007. [In the late 1990s, other scripts with extensive alternate character sets included Apple Chancery (1993) by Kris Holmes (shown in the endpapers of this volume), Kolibri (1993) by Holmes for URW, and Zapfino (1999–2001) by Hermann Zapf.]

The growing free software movement also encouraged distribution of authorized free fonts (not piracies). The earliest (except for the CRT Hershey fonts) and most extensive free font family was Computer Modern by Donald Knuth, who also published the fonts' source code in his Metafont computer language. From Knuth's typography research lab and the American Mathematical Society came Hermann Zapf's AMS Euler (1985) family, freely distributed for mathematical composition. Adobe released Utopia for free distribution in 1993, and Bitstream followed suit with Charter. The 21st century would witness many more fonts released for free distribution.

[CB: In the article "Digital Typography" in Scientific American, August, 1983, this reviewer predicted that when digital font technology matured, there would "surely be a flowering of new letterforms in the digital era." He is immensely grateful to the many industrious and imaginative type designers who subsequently created thousands of original typefaces to prove him correct. :-)]

Franck Jalleau: Third interlude: On the revival of typefaces (*Troisième pause : re-créer des caractères*)

"The revival of typefaces is an integral part of typographic evolution. It is a kind of art of heredity, of genetics, transmitted over generations, while introducing infinite variations and successive mutations."

Rehabilitation, revival, adaptation, interpretation, copy — there are many words to describe the translation of typefaces from one era to another, usually involving technological change. This includes the profound shift from handwriting to type. The process can be said to have begun with the earliest typography, when Gutenberg modeled his types on the formal handwriting of his era, and when capital letter forms based on surviving Roman inscriptions such as the Trajan column, were integrated with humanist minuscules, our lowercase. In the late 19th century, typeface revivals arose in an era of change in typesetting technology, and accelerated in the 20th century during further technological changes: a looking back to the past while questing toward the future. Each change in typographic technology imposed a need to adapt typefaces to new processes while preserving their inherent and inherited qualities created by designers of the past.

The revival of a typeface requires detailed analysis of the source materials, which may include different sizes of punches, matrices, and cast type, all preliminaries of the printed image, or, if the metal materials have been lost, the printed impression itself must be the sole guide. The shapes, their spacings, their "color" (gray tone in text) must be considered.

A revival is not a mere copy, but a new creation, an interpretation of the past. A revival in the digital era may need at least 256 characters to meet the de facto standard character repertoire, but the surviving materials of most historical typefaces have many fewer characters, so the modern designer must create new characters in the spirit of the originals. Moreover, modern typeface families often require a range of weights, but these do not exist for most classic typefaces, so again, they must be newly created in the spirit of the original. Different designers interpret classic typefaces differently. Revivals of the typefaces of Garamond, for example, differ greatly. Some are based on types of Jean Jannon, others on true specimens of Garamond, and may differ in weights, details, and proportions.

This chapter 6 concludes with illustrations of two examples of revivals with quite different approaches: Galliard (1978) by Matthew Carter, based on types cut by Robert Granjon circa 1570, and Francesco (2010) by Franck Jalleau, based on type cut by Francesco Griffo for Aldus (1499).

7. Olivier Jean: Working and office fonts from 1985 to 2000, between maturity and renewal (*Fontes de labeur et de bureautique de 1985 à 2000 : entre maturité et renouveau*)

In the 540 years of printing from Gutenberg to 1985, the craft of typography was practiced by a small number of people and the art of type design by even fewer. After 1985, however, mass marketing of personal computers and laser printers introduced typography to millions of ordinary users who became conversant with "fonts", "points", and other terms of typography. In this new era (termed "desktop publishing" in English), authors, editors, and publishers gained new freedoms as industrial obstacles fell away. As technical barriers to entry lowered, more people became authors, editors, and publishers. As the power of computer technology increased, the quality of fonts on screens and from printers improved. The path from personal computer to print media became more like a highway. [This trend did not stop with print. The vast expansion of the Internet and world wide web, along with improvements in screen resolutions and font rendering made text more readable, and more widely read, on computer screens, furthering the democratization of information compilation, organization, transmission, and reception.]

The influence of "system fonts": by 1992, Apple and Microsoft bundled families of "default" system fonts: Times Roman (or Times New Roman), Helvetica (or Arial), Courier (or Courier New). These fostered a "meme" among computer users that there were three categories of fonts: seriffed, sans-serif, and monospaced, each in a family of four variants: regular, italic, bold, bold italic.

Those basic families were initially sufficient for a majority of office workers and personal computer users, but as personal computing, printing, and publishing expanded and encompassed more applications and niches, the operating systems vendors added more and more fonts and developed fonts for other purposes, for example Lucida Console (1993) for terminal emulator windows, and Microsoft Verdana and Georgia by Matthew Carter (1996) for web usage. It is impossible to ignore Microsoft Comic Sans (1995) by Vincent Connare, which became highly popular yet widely reviled, like a beloved comic book villain, a font people love to hate.

A consequence of the lower cost of digital typography was its spread beyond the highly industrialized countries of North America and Western Europe to countries throughout the world, encouraging the development of the multilingual and multi-scriptal Unicode standard for encoding all the writing systems of the world.

When standardized font formats made typography cross-compatible, several proprietary font libraries were spun off as independent firms or were acquired by other firms. The proliferation of independent font designers and font vendors in the early days of desktop publishing began to coalesce by the end of the century, as smaller digital font firms were absorbed by larger ones. [This trend continued into the 21st century.]

In reaction to the loss of physical materials of traditional typographic heritage, some firms began programs of revival of classic typefaces. After Adobe Garamond, Adobe produced Adobe Caslon by Carol Twombly (1990). Matthew Carter revived large sizes of Caslon in Big Caslon (1994), and Adrian Frutiger reinterpreted Didot for Linotype (1991). There were also revivals of hand-written alphabets, including Adobe Trajan, Virgile (Roman rustics) by Franck Jalleau (1995), and Apple Chancery (Arrighi's chancery cursive as taught by Lloyd Reynolds).

Digital technology enabled, and the burgeoning market encouraged, development of typeface "superfamilies" more extensive than in earlier eras. Examples include Lucida, ITC Stone, Rotis, Computer Modern, Thesis (1994) by Lucas de Groot, Le Monde (1994) by Jean François Porchez [the text fonts in these books]. Adobe released a new technology called "Multiple Master", which enabled type users to modify and calibrate typefaces through a wide range of variations. This technology and its fonts were not commercially successful, however, and were cancelled before the year 2000.

Digital technology also enabled type designers to create typefaces for specific corporate clients and applications. Among many such, there were Colorado (1997) by Ladislas Mandel with Richard Southall, Telefont (1993) by Martin Majoor, and Le Monde and Parisine (1996) by Jean François Porchez.

As styles and variations expanded widely for Latin typography, digital tools in conjunction with the Unicode standard spurred expansion of non-Latin typography. Greek, Cyrillic, Arabic, Devanagari, Thai, Kanji, Chinese, Korean, and many other scripts were digitized. Lucida Sans Unicode (1994) was an early demonstration of Latin harmonized with non-Latin alphabets in a single TrueType font. The concept of integrating Latin and non-Latin scripts

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in a single font was widely adopted and extended by the end of the century.

8. Hervé Aracil: Hybridization, (de)-construction and quotation — a view of typography from 1985 to 2000 (*Hybridation, (dé)-montage et citation – Un regard sur la typographie des années 1985–2000*)

Between the advent of the LaserWriter printer with Macintosh typographic fonts, and the end of the 20th century, typeface design enjoyed a period of richness and complexity that can be characterized by the words "transposition" and "reprise". Translation from one medium to another is a form of transposition, and renewal of historical themes is a form of reprise. These interweaving tendencies in end-of-century typography, in opposition to prior movements like modernism, produced typographic phenomena equivalent to post-modernism and deconstruction in architecture, design, and music of the same period.

Digital technology, which made it easy to copy, cut, paste, and manipulate letterforms, aided these tendencies. One result was "hybridization", the combination of characteristics from two or more different and distinct typeface categories. A forerunner was a hybrid letter 'n' combining sans-serif, slab-serif, and Elzevir serifs (think Times Roman serifs) in Thibaudeau's *Manuel français de typographie moderne* (1915) [*French Manual of Modern Typography*; see accompanying figure].

Hybrid designs from the end of the century included, among many others:

- Prototype (1990) [capital + lowercase] by Jonathan Barnbrook,
- Dead History (1990) [mixed bold rounded + modern] by P. Scott Makela,
- Fudoni (1991) [Futura + Bodoni] by Max Kinsman,
- Disturbance (1993) [capitals + lowercase] by Jeremy Tankard,
- Walker (1993) (serif + ligature variations) by Matthew Carter,
- Amplifier (1995) [slab + rounded + Clarendon] by Frank Heine;
- variations of type design in coordination with literature included Quantage (1988) and Syntétik (1992) by Pierre di Sciullo.

In summary, such hybridizations, variations, and idiosyncrasies are not simply quaint experiments in typographic forms, but also constitute critical discourse on the philosophical bases of typography itself, for scholars, authors, readers, and designers to ponder and explore.

A spread from Thibaudeau's *Manuel.*

Alan Marshall: Fourth Interlude: On the preservation of typographic heritage (*Quatrième pause : La préservation du patrimoine typographique*)

The word "typography" has two meanings. Originally, it meant the composing and printing of texts with movable metal type, which stayed much the same from its invention by Gutenberg in mid-15th century to the 1970s. At the end of the 19th century, typography also came to mean publication layout or typographic design. Typography now means not only printing on paper but also text on signs, packages, media, and computer screens. Type is a fundamental element of visual communication affecting everyone in literate society, whether through ephemeral or enduring artifacts: cinema tickets, utility bills, restaurant menus, train schedules, posters, magazines, and books, printed or electronic.

The three pillars of typography are technology, aesthetics, and cognition. The technology of typography changed only incrementally from the 15th to the 19th century. but has since undergone a series of technological revolutions [described in earlier chapters of these volumes] which transformed typography into the basis of our information society.

Typographic aesthetics have also changed. The stiff typography of posters in the early 19th century became the exuberant letterforms on posters in the Belle Époque at the end of the 19th century. The graphical appearance of typographic documents comes from the co-evolution of type technology with the needs of society.

Cognition connects typographic technology to aesthetics. From the cuneiform tablet to the computer screen, text has always been interpreted by the same tools: our eyes and brain. The tools and media of visual communication are in constant evolution but perceived through our human instruments.

What is our typographic heritage, and why should we preserve it? Typographic heritage began with Gutenberg and continued in metal for centuries. Today, type is no longer metal, nor photographic, but computer data. Although type has thus been

dematerialized, it is essential to preserve as much as possible of the metal punches and matrices, as well as the negatives of the phototype era, as well as drawings, proofs, and specimens of characters, so that we can understand the ancestral processes, thoughts, aesthetics, and graphical forms that shaped our modern fonts and layouts. Type comprises not only letters, but also ornaments, fleurons, dingbats, and other graphical elements that have evolved over the centuries, tracing a rich history of abstractions and patterns, from Jean de Tournes to Giambattista Bodoni.

In addition to type itself, there are typographic manuals, catalogues, advertising, and lessons showing how type was classified, organized, understood, and intended to be used, as well as manifestos proclaiming how type should be used. These materials, publications, and documents of typographic history constitute a rich source of inspiration, information, and education for the future of typography, affected by constant reinvention not only of technology but of changes in taste, fashion, and social applications.

Typographic preservation is divided among diverse institutions, including libraries, archives, museums of paper, of printing, of computer history. Although it is impossible to preserve every sort of typographic and printing material in one establishment, such institutions prevent the total disappearance of the materials that allow us to analyze the evolution of the techniques and forms of graphic communication.

Typographic material from the pre-industrial era of typography, from Gutenberg to the 19th century, is now so rare and valuable that it is preserved without question, but more plentiful typographic materials from the 19th and early 20th century pose the question of what should be preserved with the regrettably limited funds available to museums and libraries. For the recent eras of phototype and early digital type, the question becomes evaluative — which of the now obsolete materials are more valuable and worth saving, and which can be lost? [CB: The preservation of typographic materials illustrates a fundamental problem of "disruptive" versus "sustaining" technology. "Disruptive" technology is admired because it replaces older technology and institutions based on it, with newer, more efficient and effective methods. But, in typography, the disruptive shifts from metal type to phototype, and from photo to digital type caused the collapse of traditional metal font foundries and consequent loss of priceless collections of unique punches and matrices, hand-crafted by generations of uniquely skilled type artisans. The tangible, physical results of thousands of person-years spent carving and casting the

most intricate metalwork made by mankind — equivalent to centuries of fine jewelry making — were sold off for scrap. The fonts displayed on our personal computers, tablets, and smart phone, the fuel for worldwide social media, are in large part mere shadows of a deeper cultural heritage lost in a disruptive scramble.]

Thomas Huot Marchand:
Postface: The metamorphosis of typography
(*Postface : Les métamorphoses de la typographie*)
Despite several radical changes in technology, which accelerated in the 20th century, typography has shown an amazing permanence of forms. Many of the fonts in use today are modeled on typefaces of previous centuries. Technological changes have, however, altered several principles underlying the forms. These include flattening, abstraction, fluidity, and instantiation.

"Flattening" is a dematerialization of the formerly solid typographic object. Type was three-dimensional metal for 500 years, but phototype was two-dimensional film image for 50 years. Digital type describes two-dimensional forms but is not "material" per se, but is instead computer code. Flattened 2D type enables distortions and superimpositions not feasible in metal type.

Abstraction is a reduction of a form to a set of parameters and instructions instead of a graphic object engraved, drawn, or written. In particular, in the Metafont computer language devised by Donald Knuth in the late 1970s, the description of a character is based on variable parameters of a virtual path in a plane. Changing parameters alters the form. The concept of type as a prefabricated instance of writing is therefore opposed by the variability of programmatic typefaces like Knuth's Computer Modern.

Fluidity: [CB: The French term here is "liquéfaction", evoking odd connotations in English.] Digital fonts and characters can "flow" from one computerized medium to another, e.g., pixel arrays on display screens, toner and ink arrays from laser and ink-jet printers. Digital text can be re-flowed on the screen when text block dimensions, kernings, line spacings, and other parameters are altered. Fonts and text are not bound to specific devices.

Instantiation: [CB: The French term here is "congélation", meaning freezing. Although it makes a nice contrast to "liquefaction", it doesn't have a direct English translation.] In some digital font technology, pairs or sets of structurally similar characters along some dimension can be interpolated or extrapolated to generate new characters. For example, between a light weight letter 'a' and a bold

weight 'a', many other 'a's of intermediate weights can be interpolated. Interpolation was used in Ikarus software for type production, and was marketed to users by Adobe as Multiple Master fonts, and briefly supported by Apple in GX font technology. [The concepts have recently been reinvigorated as "Variable Fonts" (OpenType Font Variations).]

Emancipation: In the 20th century, designers were emancipated from the heavy machinery of typographic production [see previous chapters in this volume on phototype, transfer type, and digital type]. Type could be designed and produced more rapidly and less expensively, and digital type could be distributed through the Internet, enabling small independent digital type "foundries" to enter the font market.

Proliferation and concentration: Although emancipation enabled small type firms to proliferate, business circumstances within the font industry led to acquisitions of smaller firms by larger ones, resulting, for example, in the Monotype firm today, which, after its acquisitions of [ITC, Linotype, Bitstream, FontShop] now offers tens of thousands of digital fonts.

Streaming: [CB: The French term here is "évaporation", which joins "congélation" and "liquéfaction" to make an analogy, whether intentional or not, between the physical states of water and fonts: solid, liquid, and vapor. My ad hoc translations do not capture this surprising analogy.] The widespread adoption of "web fonts" by most web browsers enables the streaming of fonts over the web. Adobe Typekit, Google Fonts, Monotype web fonts, and other firms provide on-the-fly downloading of fonts to documents, some for a fee, some free.

Is there a need for new fonts? Yes, more than ever. The great masterpieces of past type design should not lead us to believe there is no longer any place for invention. As Stanley Morison observed, "type design moves at the pace of the most conservative reader." Over time, new designs appear and are added to our stock of earlier faces without rendering the latter obsolete. This series of books on the *History of Typographic Writing* reveals, in addition to major typographic trends, pathways seldom followed, type styles little known, designs rarely adopted. There should be a dialogue between typographic historians, theoreticians, and practitioners to integrate research in all these areas.

Extension to other writing systems: It may seem that there are more than enough fonts for Latin typography, with its history of typeface design and variation since Gutenberg, but non-Latin writing systems and scripts, including Arabic [as well as Indic scripts, Southeast Asian scripts, and East Asian scripts, which are often more complex and comprise more characters than Latin-based alphabets, open up new horizons for typographic creativity around the world. There are today more than 120,000 fonts in 129 writing systems.

Bibliography and end materials

The bibliography for volume II contains 405 entries, subdivided into: (a) earlier volumes in the series; (b) encyclopedias, dictionaries, and inventories on typography; (c) specimens; (d) printing, typography, book arts: general history, theory, technology; (e) history of typography and graphics arts 1900–2000; plus sections with bibliographic references for each chapter and interlude. This supplements, with some overlap, the 412 entries in the bibliography of Volume I.

Illustrations. As with the first volume, this second volume is profusely illustrated, containing some 391 figures and 7 miscellaneous images and endpapers.

Indexes. There is a three page index to typefaces cited in the texts, and a six page general and typographic index.

Awards. At the 2017 Perpignan International festival of books on art, architecture, photography, cinema, and graphics, the two volumes of Histoire de l'Écriture Typographique won the prize for best book on graphics — a well-deserved honor.

In conclusion. The reviewer has provided extensive summaries of the chapters because these two volumes are unique in their extensive survey of 20th century typography and therefore merit the attention of English language readers. Depending on subject matter and potential readership, certain chapters would be worthwhile in stand-alone English translations, and a translation of the whole would greatly benefit typographic scholarship.

Explicit Liber.

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