

JAMES FELICI

FOREWORD BY FRANK ROMANO

The Complete Manual of Typography

SECOND EDITION

A GUIDE TO SETTING
PERFECT TYPE

*"The ultimate typographic tool: a concise, beautiful book
that pulls together everything you need to produce great typography."*

FRANK ROMANO

ROCHESTER INSTITUTE OF TECHNOLOGY, SCHOOL OF PRINT MEDIA

“Dangerously good book on typography. ‘Dangerous’ because there is enough well-presented information in this volume to set you on the path to typography snobbery. This book is an excellent read and reference volume for any designer, print or web.”

— N O R A B R O W N , Nora Brown Design

“Felici elegantly and painstakingly sets out to demonstrate how to set type ‘perfectly’ in a digital age. This is the book that answers all the questions you wanted to ask, but also demonstrates all the steps you need to pursue to achieve a kind of typographic perfection.”

— M A R G A R E T R I C H A R D S O N , FontShop

“Buy this book, read it cover-to-cover, then keep it handy. You’ll be surprised at what a difference it can make in the appearance of your work, both print and web.”

— P E T E R B A U E R , *Photoshop User*

“*The Complete Manual of Typography*, by James Felici, condenses timeless wisdom and timely technology into one complete guide. It explains everything about type designs and usage. If you had only one book on typography, this should be it.”

— J A Y N E L S O N , *Design Tools Monthly*

“Reading this book is like sitting down with a longtime typesetter and going over the details of a complex job. Most people will use it as a reference—which it is—but reading any section straight through is rewarding. The writing is clear and straightforward, and Felici has obviously thought long and hard about everything he deals with here.”

— J O H N D . B E R R Y , CreativePro.com

“This excellent book discusses how type should look and how to set type like a professional.”

— L I N D A B U S H Y A G E R , *HiTech Review*

“What Felici’s book does is show the importance to the reading experience of type that is well set on the page. It is copiously illustrated and elegant in design, and, I confess, I savored each of its 300 pages.”

— DAN BARNETT, Musable Blog

“This is a superb reference book and should be often consulted by those who take pride in typography.”

— PHILLIP PARR, Cider Press

“James Felici deserves a special place on every computer user’s desk because with the power to put words on paper there comes a responsibility to do it well. For the ultimate guide to setting perfect type, you’ll need *The Complete Manual of Typography*.”

— FRED SHOWKER, DTG Magazine

“If nothing else, this book will make interesting reading for people who love to read books and think about the written word. For me, I wouldn’t be without it, no matter the cost. This is one of my better reference books, and I Love Type.”

— GEORGE ENGEL, Foxwood Estates Computer Club

“While Felici has abundant experience setting type in almost every format used in the twentieth century, he takes the capabilities and possibilities of the computer as a starting point for a very lucid and practical discussion of how to get the best possible type from software. The book contains one of the few really clear explanations of hyphenation and justification settings and how best to use them, as well as very practical and contemporary advice on issues such as line length and text color.”

— FONTS ANON

“It covers all aspects of type design and applications of them in print and screen. This is like a master course in the finer points of typography. For a book that covers the historical tradition as well as digital innovations, this is a remarkable achievement.”

— ROY JOHNSON, Mantex.co.uk

The Complete Manual *of* Typography, Second Edition

The Complete Manual *of*

SECOND EDITION

Typography

A GUIDE TO SETTING PERFECT TYPE

JAMES FELICI

The Complete Manual of Typography: A Guide to Setting Perfect Type, Second Edition
James Felici

This Adobe Press book is published by Peachpit.
For information on Adobe Press books, contact:

Peachpit
1249 Eighth Street
Berkeley, CA 94710
510/524-2178
510/524-2221 (fax)

For the latest on Adobe Press books, go to www.adobepress.com
Peachpit is a division of Pearson Education.
To report errors, please send a note to: errata@peachpit.com

Copyright © 2012 by James W. Felici

Editor Rebecca Gulick
Production Editor and Compositor David Van Ness
Cover and Interior Designer Frances Baca with Mimi Heft
Copy Editor Karen Seriguchi
Proofreader Patricia Pane
Indexer Jack Lewis

This book is set in Monotype Perpetua and Linotype Syntax, both from Adobe Systems. Perpetua is a trademark of the Monotype Corporation registered in the U.S. Patent and Trademark Office and may be registered in certain other jurisdictions. Syntax is a registered trademark of Linotype-Hell AG and/or its subsidiaries.

Notice of Rights All rights reserved. No part of this book may be reproduced or transmitted in any form by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. For information on getting permission for reprints and excerpts, contact permissions@peachpit.com.

Notice of Liability The information in this book is distributed on an “As Is” basis, without warranty. While every precaution has been taken in the preparation of the book, neither the author nor Peachpit shall have any liability to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by the instructions contained in this book or by the computer software and hardware products described in it.

Trademarks Many of the designations used by manufacturers and sellers to distinguish their products are claimed as trademarks. Where those designations appear in this book, and Peachpit was aware of a trademark claim, the designations appear as requested by the owner of the trademark. All other product names and services identified throughout this book are used in editorial fashion only and for the benefit of such companies with no intention of infringement of the trademark. No such use, or the use of any trade name, is intended to convey endorsement or other affiliation with this book.

ISBN-13: 978-0-321-77326-5
ISBN-10: 0-321-77326-8

9 8 7 6 5 4 3 2 1

Printed and bound in the United States of America

for Jennifer



Foreword

Typography is what communication looks like.

But it is almost impossible to look and read at the same time because they are different perceptions. There is beauty in the language and beauty in the way it is presented. It all started about two millennia ago.

In AD 111, there was one typeface. It was the inscriptional seriffed lettering on the Trajan Column. In AD 2011, there are almost 200,000 fonts (most of them based on Garamond).

The Romans chiseled type into granite and made it monumental. Later, Jensen engraved type into metal and made it elemental. He went from columns of stone to columns of type.

There is a difference between type and typography. Typography was born because Gutenberg wanted to make his Bible appear handwritten. It was the first major publishing scam—pages reproduced as printed type at hand-calligraphy prices.

Typography is the use of type to advocate, communicate, celebrate, educate, elaborate, illuminate, and disseminate. Along the way, the words and pages become art. Type and typography fostered books, magazines, catalogues, newspapers, forms, and a plethora of promotional materials.

Type and typography—what you do and how you do it—are both science and art. There are rules, most of which are ignored. There are tools, most of which are unknown. But now you have the ultimate typographic tool: Jim Felici's knowledge at your fingertips.

As we edge toward 600 years of linear text and phase from paper to screen, the principles of good typography have not changed even as the technology of typography continues to change.

Type and typesetting went from metal to wood to film to dots. We set individual letters, lines of letters, and then pages of letters. We went from mechanical machine to mainframe to mini to desktop computer. We went from bitmaps to programmed curves and splines. We went from PostScript to TrueType to OpenType.

In only a few years we wiped out the entire typesetting industry, and typesetting became the province of the creative originator. The most demanding

type buyers became less demanding. We saw typewriter inch marks instead of real quotes and two hyphens substituting for em dashes. Forget about en dashes and real small caps and good H&J. Eventually, the industry did give us professional font sets, and programs automated many typographic processes.

There was a time when Courier, a monospaced typewriter face, was the most used typeface on the planet. Today that distinction belongs to a combination of Times and Helvetica. The most used faces are still the classics.

The letter and the numeral and the symbol begat the glyph, and the number of glyphs in a font multiplied—real small caps, old-style figures, gobs of diacriticals, and dingbats galore.

Those who work with type have to catch up with both what is old and what is new. Fortunately, you have the solution in your hands: a concise, beautiful book that puts together in one place everything you need to produce great typography. Thanks, Jim.

—FRANK ROMANO

Professor Emeritus
Rochester Institute of Technology
School of Print Media

Contents at a Glance

Foreword	ix
Introduction	xxiii

PART ONE **Typographic Basics**

1 The State of the Art and How We Got Here	3
2 Units of Typographic Measurement	21
3 About Typefaces	29
4 About Fonts	49
5 The Basics of Using Typefaces	71
6 Typesetting versus Typewriting	83
7 Setting Type on a Personal Computer	93
8 What Makes Good Type Good (and Bad Type Bad)	105

PART TWO **How to Set Type**

9 Measure, Point Size, and Leading	117
10 Controlling Hyphenation and Justification	135
11 Kerning and Tracking	167
12 Managing Indention and Alignment	179
13 Special Characters and Special Situations	197
14 Document Structures and Typographic Conventions	217
15 Tables	239
16 Language-Specific Issues	259
17 Typesetting with Style Sheets	271
18 Resolution Issues: Print, Screen, and Web	283

PART THREE **References**

Glossary	297
Index	331
Further Reading	373

This page intentionally left blank

Table of Contents

Foreword	ix
Introduction	xxiii

PART ONE **Typographic Basics**

1	The State of the Art and How We Got Here	3
	The Building Blocks of Type	3
	Bounding Boxes and Spaces	5
	Type Design as a Function of Size	5
	Evolution and Automation	6
	The Typewriter: The First Desktop Publishing Tool	7
	Escapement • Monospaced Type	
	Proportional Type	
	Monotype: Counting Character Widths	9
	The Changing Definition of <i>Font</i>	10
	Photographic Fonts • Electronic Fonts	
	Desktop Publishing Alters the Rules	13
	The PostScript Model	13
	Raster Image Processing • Device Independence	
	Postscript Fonts • Imaging PostScript Fonts	
	Output Resolution and Type Quality	16
	The Dark Side of WYSIWYG	17
	Near WYSIWYG	
	The Shadow of the Word Processor	19
2	Units of Typographic Measurement	21
	Absolute Measurements	21
	Uses for Picas and Points	22
	The Definition of <i>Point Size</i> • Notation Conventions	
	Use of English and Metric Units	24

Relative Units	24
The Em	24
Em-based Character Widths • Em-based White-Space Adjustments	
Em-based Spacing Units • The Word Space	
Other Units of Measure	27
Ciceros	27
Agates	27

3 About Typefaces 29

Definitions: <i>Font</i> versus <i>Typeface</i>	29
Type Design and the Em Square	30
The Baseline	30
x-Height	32
Type Anatomy	32
Calligraphic Influences	32
Serifs	33
Bracketed Serifs • Unbracketed Serifs	
Slab Serifs • Hairline Serifs • Wedge Serifs	
Ascenders and Descenders	36
Vestigial Features: Ink Wells	36
Optical Aspects of Typeface Design	37
Size Changes Everything	37
Master Character Designs	38
Multiple Master Fonts	
Principal Features of Typefaces	40
Seriffed and Sans Serif	40
Variations in Typeface Weight	40
Degrees of Boldness	
Romans and Italics	41
Obliques	
Variations in Typeface Width	43
Typeface Families	43
Typefaces as Role Players: Text, Display, and Decorative	44
Nonalphabetic Fonts	44
Classifying Typefaces by Historical Period	45
Old-Style Typefaces	45
Transitional Typefaces	46
Modern Typefaces	46
Typeface-Naming Issues	47
Confusing Typeface Names	47

4	About Fonts	49
	The Two Basic Kinds of Fonts: Outline and Bitmapped	49
	What's in a Font?	51
	Font Formats	52
	Postscript Fonts • Truetype Fonts • Macintosh Dfonts	
	Opentype Fonts • Web Fonts	
	Unicode: The Underlying Technology	55
	Character vs. Glyph	
	Cross-Platform Font-Compatibility Issues	56
	Font-Encoding Issues	56
	The Mac's "Borrowed Characters"	
	Finding the Characters You Need	58
	Using Windows' Character Map	58
	Using the Macintosh's Keyboard Viewer	59
	The Mac OS and Unicode	
	Application Glyph Palettes	60
	"Expert Sets" and Alternate Fonts	61
	Characters outside the Unicode Standard	61
	OpenType Layout Features	62
	Small Caps • Alternate Numerals • Automatic Fractions	
	Alternate Ligatures • Swash Characters	
	Superscripts and Subscripts, Ordinals and Superiors	
	Titling and Case-Specific Forms	
	Contextual Alternates and Positional Forms	
	Slashed Zero • Stylistic Sets	
	Identifying Font Formats	64
	Identifying Macintosh Fonts	65
	Identifying the Formats of Windows Fonts	66
	The Basics of Font Management	68
	Font-Management Programs	68
	Font-Editing Programs	69
5	The Basics of Using Typefaces	71
	Readability	71
	Traditional Roles for Serifed and Sans Serif Types	72
	Common Features of Text Faces	73
	Expressing Emphasis	75
	Uses for Bold and Other Type Weights	75
	Uses for Italics	76

Uses for Condensed and Extended Faces	77
Problems with Electronic Expanding and Condensing	77
Using Display Type	78
Using Decorative Type	79
Type in Color	79
Reverses	80
Onscreen Reverses	81
 6 Typesetting versus Typewriting	83
Page Sizes and Line Lengths	83
Word Spaces	84
Line Endings and Carriage Returns	85
Quads	86
Typeface Choice and Point Size	87
Forms of Emphasis and Highlighting	88
Unavailable Characters	89
Hyphens and Dashes	89
Quotation Marks	90
Primes	
Fractions	90
Tabs	91
 7 Setting Type on a Personal Computer	93
A Tale of Two Systems: Typesetting and the Word Processing Legacy	93
Assigning Typographic Attributes	94
How WYSIWYG Works	95
How Fonts Are Used for Screen Display	96
Type and the “Style” Menu	
Screen Rendering When Fonts Are Missing	
How Operating Systems Manage Fonts	98
Problem: Corrupted Fonts	99
Problem: Missing Fonts	100
Problem: Duplicate Fonts	101
Font Embedding	101
Embedding Subsets of Fonts	102
Font Copyright Issues	102

8 What Makes Good Type Good (and Bad Type Bad) . 105

Legibility and Readability	105
Type Color	106
Overly Tight Spacing	107
Overly Loose Spacing	109
Unbalanced Spacing	109
Long Lines and Tight Leading	111
Narrow-Measure Problems	111
Optical Effects and Alignment Problems	112
The Eyes Have It	113

PART TWO How to Set Type

9 Measure, Point Size, and Leading 117

Line Length, or Measure	117
Point Size and Measure	122
Leading	122
Automatic Leading	124
Leading in Text Frames	125
Changing Leading as Type Size Changes	126
Line Spaces and Vertical Space Bands	
The “Baseline Shift”	128
Leading in Reversed Type	129
Asymmetrical Leading in Display Type	129
Leading in Non-text Settings	130
Leading Considerations in Multicolumn Settings	130
Typeface-Specific Considerations	130
Seriffed Typefaces, Point Sizes, and Measures	131
The Effect of x-Height • The Effect of Character Width	
The Effect of Stroke Weight	
Sans Serif Typefaces, Point Size, and Measure	133
Typefaces and Leading	133

10 Controlling Hyphenation and Justification 135

What <i>Hyphenation and Justification</i> Means	135
How H&J Works	136
Character-by-Character Calculations	
Problems with Line-at-a-Time H&J	139

Hyphenating and Justifying a Range of Lines	139
Defining a Range for Multiline H&J	
Line-Break Points	141
Controlling Word and Letter Spaces	142
Controlling Hyphenation	143
Hyphenation Zones • Choosing a Means of Hyphenation	
Kinds of Hyphens • Hyphenation Style	
Adding to the Hyphenation Dictionary	
How Measure Affects H&J	147
Specifying Word-Space Ranges in Ragged-Margin Type	147
Specifying Word-Space Ranges in Text with Justified Margins	148
Specifying Letter-Space Ranges	152
Letterspacing and Forced Justification	153
Letterspacing Tricks and Problems	
Altering Character Widths during H&J	154
Testing Your H&J Values	156
About Program Defaults	156
Fixing and Avoiding Composition Problems	156
Loose Lines/Tight Lines	156
Tweaking the Hyphenation • Tweaking the Spacing	
Paragraph Color Problems	158
Widows and Orphans	159
Rescuing Widows • Helping Orphans	
Vertical Justification	161
Rivers	163
Aesthetic Rags	164
 11 Kerning and Tracking	 167
Definitions: <i>Kerning</i> and <i>Tracking</i>	167
Kerning in Practice	168
Manual Kerning	170
Manual Kerning Strategies	
Kerning Italic-Roman Character Combinations	
Algorithmic Kerning	172
Creating Custom Kerning Tables	172
Kerning Numerals	
Using Tracking Controls	174
Special Tracking Situations	175
Character Spacing and Script Faces	
Text on Curved Baselines	177

12	Managing Indention and Alignment	179
	Kinds of Indents	179
	Indents as Paragraph Attributes	180
	Running Indents	181
	Orphans and Running Indents	
	First-Line Indents	182
	First-Line Indents in Rag-Left Text • Sidestepping First-Line Indents	
	Hanging Indents	184
	Indents on a Point or Character	185
	Skews and Wraps	185
	Setting Skews	185
	The Basics of Setting Wraps	186
	Rectangular Wraps • Wrapping Irregular Shapes	
	Alignments of Characters and Text Blocks	190
	Page and Baseline Grids	190
	Text Frames and Grid Alignment	
	Vertical Alignment: Top, Center, and Bottom	191
	Top Alignment • Center Alignment • Bottom Alignment	
	Hanging Characters	193
	Visual Alignment	193
	Troublesome Alignments with Ragged Margins	194
	Problems with Centered Text	
	Aligning Oversized Characters	195
13	Special Characters and Special Situations	197
	Extended Character Sets	197
	Small Capitals	199
	Uses for Small Caps	200
	Old-Style Numbers	201
	Ligatures, Logotypes, and Diphthongs	201
	Automatic Ligature Substitution	202
	Ligatures in Display Type	203
	Swash Characters	203
	Superiors, Inferiors, and Ordinals	204
	Fractions	205
	Building Fractions by Hand	206
	Fraction Form	206
	Dashes	207

Points of Ellipsis	208
Points of Ellipsis and Line Breaks	208
Common Pi Characters	209
Hard-to-Find Characters	210
Primes • Minus and Multiplication Signs	
Accented Characters	211
The Dotless <i>i</i>	211
Character-Specific Spacing Issues	212
Initial Capitals	213
Drop Caps	213
Difficult Drop-Cap Characters • Readability Issues with Drop Caps	
Standing Initial Capitals	215

14 Document Structures and Typographic

Conventions	217
Structural Elements	217
Headings	219
Subheadings	219
Subhead Spacing Issues • Subhead Indention • Cut-In Subheads	
Extracts	223
Outline Formats and Tables of Contents	223
Outline Form • Table-of-Contents Form	
Navigation Tools	226
Page Numbers, or Folios	226
Running Heads	227
Jump Lines	228
End Marks	
Independent Text Units	229
Captions and Legends	229
Footnotes and Endnotes	230
Footnote Point Size and Leading	
Footnote Alignment • Footnote Symbols	
Indexes	233
Index Typefaces and Point Sizes	234
Index Indention Styles	234
Run-In Index Style • Indented Index Style	
Page-Break Issues in Indexes	235
Bibliographies	236

15	Tables	239
	The Structure of Tables	239
	How Table Structures Are Specified	241
	Problems with the Spreadsheet Table Metaphor	
	Typeface, Point Size, and Leading Specifications	245
	Alignments in Tables	245
	Indentation in Tab Entries	
	Rules in Tables	247
	Table-Setting Techniques	247
	Balancing Column Widths and Gutters	248
	Leading in Tables	249
	Specifying the Leading of Rules • Centering Text between Rules	
	Aligning Heads and Tab Entries	252
	Alignment Issues in Numeric Tables	254
	Hanging Characters in Numeric Tables	
	Aligning Currency Symbols in Tables	
	Void or “Missing” Entries	257
16	Language-Specific Issues	259
	Character Sets	259
	Hyphenation	260
	Time Expressions	260
	Currency Symbols	261
	British English versus American English	262
	American and British Quotation Styles	262
	American and British Abbreviation Styles	263
	American and British Temperatures	263
	French Typographic Conventions	263
	French Punctuation Style	263
	French Quotation Style • French Punctuation Spacing	
	French Accents	265
	French Capitalization	265
	French Numeric Expressions	266
	Spanish Typographic Conventions	266
	Italian Typographic Conventions	267
	German Typographic Conventions	267

17	Typesetting with Style Sheets	271
	How Style Sheets Work	271
	Printing Style Sheets	272
	Paragraph versus Character Styles	273
	Follow-On Paragraph Styles • Nested Style Sheets	
	Object Style Sheets • Table-Cell Style Sheets • Grep Styles	
	Creating Style Sheets	275
	Parent-Child Style Sheets	276
	Creating Style Sheets from Existing Text	277
	Using Style Sheets	278
	Removing Style Sheets	279
	Setting Overrides	279
	Using Style Sheets to Create Overrides	
	Searching and Replacing Styles	280
	Paragraph Style Sheets and Document Structures	281
	Importing Style Sheets	281
18	Resolution Issues:	
	Print, Screen, and Web	283
	The Advantages of High-Resolution Output	283
	Other Factors That Influence Print-Type Clarity	284
	Adapting to Low Print Resolutions	284
	Avoid Small Point Sizes • Avoid Reverses and Type over Backgrounds	
	Avoid Angled Type at Text Sizes and Below	
	Type Onscreen	286
	Typefaces for Screen Display	287
	Other Onscreen Legibility Enhancements	288
	Typography and the World Wide Web	290
	The Promise of Cascading Style Sheets	291
	What Cascading Style Sheets Can Do	

PART THREE References

Glossary	297
Index	331
Further Reading	373

Introduction

This book is about how type should look and how to make it look that way. It primarily covers type in print, which is where the art of typography reaches its highest form of expression. But people who read on computers, e-book readers, or any other electronic device need all the typographic help they can get, so setting type for screen display also gets its due.

The book is organized so that you can approach it in two ways: as a text-book to read from cover to cover, or as a reference guide to jump into at any point as need dictates. It has a wonderful index.

This is not a style guide, but an execution guide. It doesn't explain why you might choose to use the typeface Bembo over Garamond, but rather, having made that choice, how you can set Bembo in the best possible way.

The rules of typography are centuries old, and although the technologies have changed, the goal has always remained the same: a beautiful setting in the service of a pleasant and fruitful reading experience. So while this book explains in very practical terms how to use today's computerized tools, I've written it to outlast them. It's been completely updated since the first edition appeared in 2003, and as in the original, references to specific programs have been kept to a minimum (although the capabilities of all the major programs have been taken into account). Programs change, but the lessons in this book will be just as applicable to version 20.0 of your software as they are to the version you use today.

Not all of the capabilities discussed in this book exist in every program or system. But none of them are fantasies—they all exist somewhere. Every typographer and typesetter has to hope that they all will converge in one program as soon as possible. In the meantime, I've included scores of workarounds to wring good type out of uncooperative programs.

Beautiful type comes from attention to myriad tiny details. It's built up a fraction of an em at a time, through hundreds of decisions whose geometry belies their gravity. It requires, as a colleague once wrote, a heart hardened against accusations of being too fussy.

This page intentionally left blank



CHAPTER 4 About Fonts

TWO KINDS OF FONTS: OUTLINE AND BITMAPPED
FONT FORMATS: POSTSCRIPT, TRUETYPE, AND OPENTYPE
CROSS-PLATFORM COMPATIBILITY ISSUES
FINDING THE CHARACTERS YOU NEED
IDENTIFYING FONT FORMATS (MAC AND WINDOWS)
FONT-MANAGEMENT BASICS

Typefaces are what you get to admire after your work is finished, but fonts are the tools you have to wrestle with in the meantime to get the job done. Computer operating systems and applications have made it much easier to work with fonts, but the process is still quite technical. Working with fonts forces you to learn more about your computer than you probably want, but everything you need to know is in this chapter.

The Two Basic Kinds of Fonts: Outline and Bitmapped

Digital devices—computer monitor screens, desktop printers, imagesetters—create images out of dots. The simplest way to create type for one of these devices is to draw a picture of every character as an array of dots and store these drawings in a font. Then all a device has to do to image the type is to copy those dots into place on the screen or page. When this technology was first figured out, each one of those dots was represented by one *bit* of computer data—a simple yes/no choice of whether to image a dot or not. Images created from these predrawn, prearranged arrays of dots were called *bitmaps*, and fonts using this trick were called *bitmapped* fonts.



FIGURE 4.1 In a bitmapped font, each dot in the drawing of a character is mapped against one pixel of the output device. As the device's resolution increases, the dots of the bitmapped font become smaller and smaller, and the character follows suit. In this illustration, a character bitmapped for the screen appears at left. If this bitmap is imaged on a desktop printer, it shrinks to the size in the center. At a typical imagesetter resolution, it shrinks to the size on the right.

Bitmaps are a clever and simple approach, but the more dots a bitmap contains, the more computer data it requires. As the resolution of the device increases or the size of the character images increases, the number of dots grows geometrically: Doubling the size of a character quadruples the number of dots. You also need a separate set of bitmaps—a separate font—for every size of type you want to create. And the bitmaps designed for one resolution will appear much smaller when imaged on a device with a higher resolution, where the dots are much smaller (see Figure 4.1). To image a single typeface at the same range of sizes on a computer screen, a desktop printer, and an imagesetter, then, would require hundreds of bitmapped fonts.

The solution is to store the descriptions of the characters as a set of outline drawings. *Outline fonts*, which do just this, store character images as outlines described mathematically as a series of curves and straight-line segments. (These line segments are sometimes called *vectors*; and the fonts based on them, *vector fonts*.) These outlines can be mathematically scaled to any size without distorting the shapes or proportions of the characters. The scaled outlines are then colored in with dots of the size created by the device that the type is being imaged on: around 100 dots per inch (dpi) for a computer screen, approximately 600 dpi for a desktop printer, and well over 1,000 dpi for imagesetters.

While it was once common for operating systems to use bitmapped fonts for screen display, they now generate screen type from the same outline fonts used for high-resolution printing. Some fonts may contain sets of hand-tuned bitmapped screen fonts for use at small sizes because they're more legible than those generated by your computer. But these embedded screen fonts are not apparent to the user, and you don't have to concern yourself with them.

onscreen**True roman***True italic***True bold*****True bold italic*****True roman***Synthesized italic***Synthesized bold*****Synthesized bold italic*****in print****True roman***True italic***True bold*****True bold italic*****True roman***Synthesized italic***Synthesized bold*****Synthesized bold italic***

FIGURE 4.3 In this illustration, the top four lines of screen type were generated from their actual fonts. The computer generated the second set of four lines by interpolating the outlines of the plain roman font. You can see that the “italics” are simply obliques roman characters.

The high-resolution lines at the bottom show what you get if you try to print the two samples. With all the fonts available, printing proceeds normally. But without the outlines for the other three members of the family, the printer uses the plain roman font for all four lines.

Font Formats

Ultimately, what’s inside a font depends on its format. The word *format* has two meanings in computer type. First, it can refer to the platform for which the font was designed. For example, two fonts with the same data for the same typeface may have different file formats depending on whether they’re designed for use on an Apple Macintosh or a Windows PC. Until the development of the OpenType font format, fonts were created to meet the data-structuring needs of one platform or the other, and a font designed for one machine would not work on the other. A single OpenType font file will work on either a Mac or a PC.

Another kind of font format reflects how the typographic information itself is described and organized. The three leading font formats today are PostScript, TrueType, and OpenType.

POSTSCRIPT FONTS

PostScript fonts are written in the PostScript page description language, and they need to be processed by a PostScript interpreter before they can be imaged. (See “The PostScript Model” in Chapter 1 for more information on PostScript interpreters.) For high-resolution printers and imagesetters, this interpreter is generally built into the device itself; it’s a separate onboard computer dedicated to turning PostScript code into printable output. For lower-resolution devices, such as computer monitors and desktop printers, PostScript fonts can be imaged by a PostScript interpreter built into the operating system. PostScript fonts are generally accompanied by a set of bitmapped fonts for screen display, and unless these screen fonts are installed alongside the outline fonts, your computer cannot image their type. Even though your computer may not use the screen fonts’ bitmapped images, it relies on the font metrics contained within the screen fonts to compose type using their companion outline fonts. This is an artifact of older technology, but it continues to function perfectly well.

The several kinds of PostScript fonts are distinguished from one another by number. The only one you’re likely to come across is *Type 1*, and it’s only mentioned here because of references you may come across to “PostScript Type 1” fonts. In publishing and typesetting contexts, when you talk about a PostScript font, it’s assumed you’re talking about the Type 1 variety.

Until the advent of the OpenType font format, PostScript fonts were the standard of the publishing industry. Today the PostScript format has been completely overtaken by OpenType, and most type vendors, including Adobe, have converted their entire libraries of PostScript fonts into the OpenType format. PostScript fonts continue to be fully supported by applications and operating systems, which is a good thing, because there are literally millions of them still

in circulation and daily use. They are, however, platform specific, and different versions of a font are required for Macintosh and Windows.

TRUETYPE FONTS

For a few years in the late 1980s, the typesetting world had in PostScript a single, standard *font format* for the first time in its history. It wasn't to last. For a combination of primarily commercial but also technological reasons, Apple Computer and Microsoft collaborated to create a new font format: TrueType. The new format enabled both companies to build outline font-imaging capabilities into their respective operating systems without being beholden to Adobe.

TrueType introduced many improvements over the PostScript format. The most prominently touted was its *hinting*, instructions added to the font that tell the character outlines how to reshape themselves at low and medium resolutions in order to create character images of maximum clarity. (For more on hinting, see “Imaging PostScript Fonts” in Chapter 1.) Because of the high quality of these hints, TrueType fonts were and still are typically delivered without any hand-drawn, bitmapped screen fonts. Screen type generated from the font's character outlines is generally quite legible even in small point sizes.

TrueType also allowed for larger character sets. The PostScript font format had used a numbering system to identify the characters in its fonts based on a single byte of computer data, yielding a maximum of 256 distinct ID numbers. (Fonts of this kind are still referred to as *single-byte fonts*.) TrueType introduced a two-byte numbering system, which allowed much larger character sets by creating over 65,000 unique ID numbers.

This made plenty of room for alternate forms of characters as well as allowing languages that rely on huge character sets (such as Chinese, Japanese, and Korean) to be supported by a single font. TrueType fonts are still included as a part of major operating systems, but most independent digital font foundries have shifted to OpenType because it allows a single font file to work under multiple operating systems. TrueType fonts are still platform specific, and a TrueType font created for use on a Mac will not work on a Windows PC, and vice versa. TrueType fonts use a different technology than PostScript fonts do for describing the outline shapes of characters, but any system that can image type from PostScript fonts can also image type from TrueType fonts.

MACINTOSH DFONTS

Many Macintosh-specific fonts use a file structure that predates OS X. In this structure, the file contents are divided into two parts: a *data fork* and a *resource fork*. Older versions of the Mac OS used data in the resource fork to tell (among other things) what application created a specific file. Mac OS X does

this by reading a file's filename extension, such as .doc. Dfonts are a variety of TrueType font that have no resource fork, and they are included in OS X for the sake of font compatibility with other computers running the UNIX operating system. (OS X, like Microsoft Windows, is based on UNIX.)

You can use dfonts just as you would any other Macintosh TrueType font. Documents formatted with them will not, however, display correctly on Macs running operating systems that predate OS X.

OPENTYPE FONTS

OpenType is a hybrid font format created by Adobe and Microsoft. It reconciles the differences in the PostScript and TrueType formats, allowing them to exist together in a single file. OpenType fonts are also written in a file format that allows the same font file to be used on either a Macintosh or a Windows PC. Crudely put, an OpenType font is a TrueType font with a “pocket” for PostScript data. An OpenType font can contain TrueType font data, PostScript font data, or (theoretically) both. Thus it has the potential to combine the best of both formats in a transparent way. The operating system of your computer will sort out the data in an OpenType font and use what's appropriate for it. A problem with OpenType fonts, as with the TrueType fonts that preceded them, is that from the outside there's no way to know what's inside. The original generation of PostScript fonts generally contained a standard character set with standard features. The TrueType format and, to an even greater extent, the OpenType format offer a wide range of optional features that may or may not be built into every font, although the core character set used in the original PostScript fonts has generally been retained. An OpenType font can contain anywhere from a handful of characters to more than 65,000. There's no way of knowing what a particular font contains or what it can do unless the features of the font are documented in some way.

OpenType fonts also enable a variety of so-called *layout features*, which give a typesetting program the ability to automatically substitute one character for another. Using an appropriate OpenType font, for example, a program can automatically convert the keystroke sequence $\frac{1}{2}$ into a proper fraction: $\frac{1}{2}$. Layout features are discussed in detail on pages 62–64.

WEB FONTS

The term *web font* does not refer to a specific font format but to fonts that have been extensively hinted for optimum legibility when displayed on computer screens and other electronic devices. Some have been designed from scratch for electronic display, while others have been adapted retroactively.

Popular web standards permit designers to specify the use of particular fonts when their pages are displayed, even though these fonts are not embedded in the file or necessarily available on the device displaying it. In this sense, web fonts are also understood to be those that exist on web servers for real-time use for imaging online documents that call for them. Some of these are available for free, but others are available only under license, with a fee paid for their use; they are, in effect, rented.

Web fonts are also discussed in Chapter 17, in the context of the Cascading Style Sheet standard used to structure many web documents.

Unicode: The Underlying Technology

All computer programs identify characters by number. International standards correlate every number to a unique character, so that a computer file from Europe, for example, can be properly typeset in Asia. It took decades before a single standard international numbering system was established: Unicode. Both TrueType and OpenType fonts use Unicode numbers to identify their constituent characters.

The goal of Unicode is to assign a unique ID number to every character, linguistic symbol, or ideogram in all of the world's languages, living or dead. The number of such IDs now exceeds 100,000.

To facilitate backward compatibility, and to support legacy documents, today's computing systems still suffer from vestiges of earlier numbering systems. The first of these was ASCII (the American Standard for Computer Information Interchange), which used the numbers 0 through 127, as shown in Figure 4.4. The original desktop computing systems—including Microsoft DOS and Windows and the Apple Macintosh OS—used one-byte numbering systems that were consistent through the ASCII range but differed in the ID numbers assigned to the other 128 characters a font could contain. This made communications between the two platforms needlessly complicated, with characters often incorrectly displayed on a nonnative system.

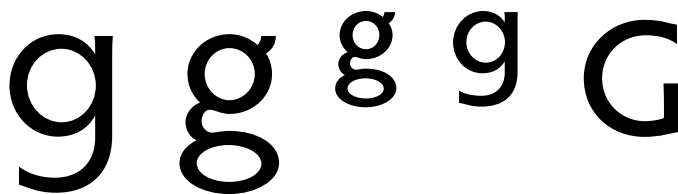
For technical reasons, the ID numbers assigned by Unicode are written in *hexadecimal* format. Hexadecimal, in addition to using the numerals 0 through 9 to express numbers, also uses the letters A through F. This allows 16 values to be expressed with a single character, like so: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F. The letters following 9 represent 10, 11, 12, 13, 14, and 15, respectively, in our everyday counting system. In hexadecimal, the value expressed as 0010 (Unicode values are always expressed using four “digits”) is the equivalent of 16 in our normal base-10 system.

Fortunately, you don't need to know anything more than this about hexadecimal notation, and even the preceding paragraph is added only to explain

32	(space)	64	@	96	`
33	!	65	A	97	a
34	"	66	B	98	b
35	#	67	C	99	c
36	\$	68	D	100	d
37	%	69	E	101	e
38	&	70	F	102	f
39	'	71	G	103	g
40	(	72	H	104	h
41	)	73	I	105	i
42	*	74	J	106	j
43	+	75	K	107	k
44	,	76	L	108	l
45	-	77	M	109	m
46	.	78	N	110	n
47	/	79	O	111	o
48	0	80	P	112	p
49	1	81	Q	113	q
50	2	82	R	114	r
51	3	83	S	115	s
52	4	84	T	116	t
53	5	85	U	117	u
54	6	86	V	118	v
55	7	87	W	119	w
56	8	88	X	120	x
57	9	89	Y	121	y
58	:	90	Z	122	z
59	;	91	[	123	{
60	<	92	\	124	|
61	=	93	]	125	}
62	>	94	^	126	~
63	?	95	_	127	(delete)

FIGURE 4.4 Computers identify characters by numbers, and all systems agree on the meanings of 0 through 127, the so-called ASCII character set. The numbers 0 through 31, not shown here, are either unassigned or assigned to nonprinting commands such as return and backspace. The ASCII character set is printed on most English-language computer keyboards.

FIGURE 4.5 A single character with a single Unicode ID number can have several forms, each represented by a unique *glyph*. Here, a lowercase *g*—Unicode number 0067—from the typeface Hypatia Sans Pro can be represented by any of five alternate glyphs.



why Unicode character numbers look so peculiar when seen in a font browsing window.

Both Windows and the Mac OS now support Unicode as well as continuing to support the numbering schemes used in older font formats. This happens more or less transparently, although how you access certain characters in certain fonts will vary according to their format. This is described in detail later in the chapter, in the section “Finding the Characters You Need.”

CHARACTER VS. GLYPH

An important aspect of Unicode is that it recognizes that a single character may have several forms, each one of which is represented by a distinct *glyph*, as shown in Figure 4.5. Unicode’s main concern is clear communication, not typography per se, so it does not distinguish between a simple roman *A* and a decorated *A* used for design purposes. For Unicode, the goal is simply to accurately depict a capital *A* as a capital *A*. All capital *As*, then, have the same Unicode number—0041—although they may be represented by alternate *glyphs*. Tracking which glyph you’ve chosen to use is the job of your typesetting or page layout application.

For this reason, computer tools used for browsing the contents of fonts are often called *glyph palettes*, and a given font’s glyph set can be far larger than its character set.

Cross-Platform Font-Compatibility Issues

The legacy left by evolving font standards continues to bedevil the movement of document files between different computer systems. The only way to be sure that a typeset document appears on one platform exactly as it was designed on another platform is to create it using the same OpenType fonts from the same vendor on both platforms.

Font-Encoding Issues

How numbers are assigned to the characters within a typeface is referred to as a font’s *encoding*. Before they supported Unicode, the Macintosh and Windows operating systems used different encoding schemes.

Not only did the pre-Unicode operating systems use different character-numbering schemes, but they also used different subsets of the basic Latin 1 character collection as their standard character sets. The Macintosh set and encoding scheme were called MacRoman; the Windows character set and encoding scheme were called Win ANSI. Although a vendor might sell identical fonts for both platforms, the Mac would allow its users to access one group of characters within a font, and Windows another. Figure 4.6 shows the characters that were unique to each platform.

Today's operating systems on both platforms allow access to all of these characters. But both the Mac and PC lack keystroke combinations that allow you to easily type their formerly inaccessible characters. For the sake of backward compatibility, and in respect for people's keyboarding habits, both operating systems act as if their old encoding schemes were still in use. To get access to the Unicode characters, you have to use special techniques (discussed in the next section).

Although Unicode is not a font encoding per se, it does provide applications on any platform with a standard way of indicating which characters to use. To assure the accurate representation of text as it travels through other computer systems, using Unicode-based fonts is a must.

FOOTNOTE: THE MAC'S "BORROWED CHARACTERS"

When you're working with PostScript fonts (and many TrueType fonts) on a Macintosh, the MacRoman encoding borrows certain characters from the Symbol font (see Figure 4.6). Such characters seem to be a part of every font you use. The keystroke combination Option-D, for example, always yields a lowercase Greek delta; δ . But the numbers assigned to these characters in the MacRoman encoding scheme point to blank "slots" in a Mac font. Calls for these numbers are diverted by the operating system to the Symbol font. That explains why these characters never match the style of the typeface you're working in (unless it happens to be Times Roman, upon whose design the serifed Symbol characters are based).

This curious situation is unique to the Mac and unique to this small handful of characters. It's been largely corrected in most OpenType equivalents of older PostScript fonts through the incorporation of these formerly borrowed characters into their expanded character sets. The Mac OS now explicitly shows that it's using the Symbol font when you use the original keyboard commands to set these characters.

Win ANSI only

Ð ð Þ þ Š š Ÿ
 ý Ž ž ¼ ½ ¾ ¹
 ² ³ ´ µ ×

MacRoman only

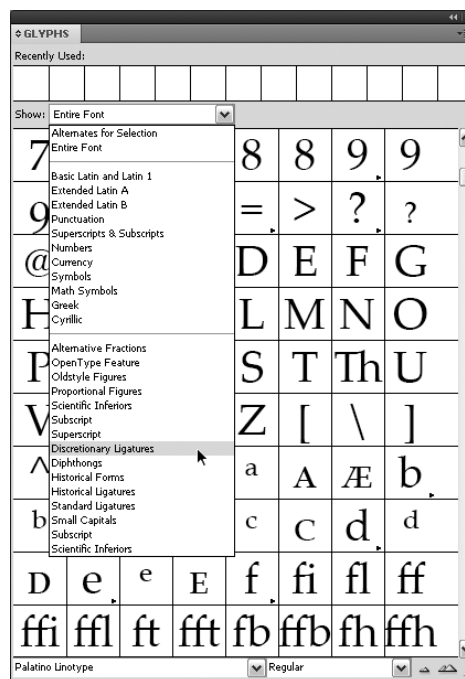
/ fl fi ı ˘

MacRoman only, from Symbol

∫ ∂ Δ π Π √
 Σ Ω ≈ ◇ ∞ ≠
 ≤ ≥ Ⓐ

FIGURE 4.6 Of the basic PostScript Type 1 character set shown in Figure 4.2, only Windows programs have direct keyboard access to the group of characters shown at the top here. Only Macintosh programs can use the keyboard to access the ones in the middle group. The bottom group includes characters in the basic MacRoman encoding that appear to be in every Mac font, but they are actually borrowed from the Symbol font.

FIGURE 4.7 Adobe InDesign has its own glyph browser built in, and a pull-down menu lets you isolate classes of characters for faster searching amid extended character sets. These categories are specified inside the font itself, in this case TrueType Palatino from Linotype.



Finding the Characters You Need

Windows and the Mac OS offer tools to see exactly which characters are in a particular font. Applications themselves are beginning to offer the same services (see Figure 4.7). These font-browsing tools are indispensable in the absence of standard character sets and are the only way to get many of a font's glyphs into your documents.

Using Windows' Character Map

Windows' Character Map (found in the Programs > Accessories > System Tools menu) shows all the characters in a font in the form of a scrollable grid. From here you can select and copy a character or group of characters into your document. Selecting a character also indicates if there is a keystroke sequence you can use to access the character directly from the keyboard.

There are two kinds of such keystroke sequences. The first is based on the old Win ANSI font encoding used in older versions of Windows. These involve holding down the Alt key while you type the Win ANSI ID number of the character you want. For example, Alt-0233 yields a lowercase *e* with an acute accent: *é*. When you release the Alt key, the character will appear in your text.

Some applications—notably those from the most recent versions of the Windows Microsoft Office suite—use a similar technique based on the character's

Unicode number. In this case, you type the four-character Unicode ID for a character followed by Alt-x. This causes the program to reinterpret the previous four keystrokes and substitute the correct character. The keystroke sequence `o o B D Alt-x`, for example, creates the fraction $\frac{1}{2}$. Note that the alphabetic characters in the Unicode ID can be typed in either upper or lower case.

Using typed commands to set specific characters is much faster than copying them out of the Character Map display, and making a written list of the character IDs you commonly use will save you a lot of time. Because there can be so many characters in a TrueType or OpenType font, the Character Map gives you the option to display only certain groups of characters at a time: those used for particular languages, for example, or numeric characters, including fractions and the characters for building them.

You can also use the Character Map's Search tool by using plain-English descriptions of the character you're after, such as *dash*, *fraction*, or *bullet*.

Using the Macintosh's Keyboard Viewer

The Macintosh's Keyboard Viewer displays a keyboard to show what characters are assigned to which keys. By default, this utility is buried away in the operating system. To make it easily available, open Language & Text within System Preferences (located in the Apple menu). Click the Input Sources tab, and in the pane, select the checkboxes next to Keyboard & Character Viewer and (near the bottom) "Show Input menu in menu bar." This causes a new icon (which looks like a flag, indicating your operating language) to appear on the right-hand side of the menu bar. The Input menu will give you access to the Keyboard Viewer utility.

With Keyboard Viewer open, holding down the Shift key changes the display to indicate which characters are available from each key with the Shift key held down. The same happens when you hold down the Option key or the Option and Shift keys simultaneously. With the four options—no Shift or Option, Shift, Option, and Option-Shift—the Mac OS enables each alphanumeric key to access four characters. As with Windows' Character Map, any characters you select in Keyboard Viewer can be copied into your documents.

The Mac OS also uses more complex keystroke combinations to access accented characters. In this process you hold down the Option key while you press a key that represents the accent you want to use: acute, grave, dieresis (umlaut), tilde, or circumflex. Then, in a separate action, you press the key of the letter over which you want to place the accent. At this point the accented character appears onscreen. To see where these accent characters are located, hold down the Option key with the Keyboard Viewer window open. You'll see that five keys appear with highlights. These are the accent keys.

In the Input Sources pane of the Language & Text System Preferences pane, you can choose which languages or keyboard layouts you'd like to include as alternate choices in the Input menu. If you add Russian, for example, and select it from the Input menu, Keyboard Viewer will show a Cyrillic keyboard layout. The same is true for French, British, or any other language- or nationality-specific keyboard layout.

THE MAC OS AND UNICODE

For Unicode fonts with large character sets, Mac OS has two principal tools: Font Book and Character Viewer. Font Book (found in the Applications folder) is a font manager, which you can use to control which fonts on your Mac are active at any time. Only active fonts appear in your programs' Font menus. By selecting Repertoire from Font Book's Preview menu, you can see the entire character set of any font currently installed on your Mac, a list of which appears on the left. You can't use Font Book to add characters to your documents, just to browse the contents of fonts.

Adding specific characters to documents is the job of Character Viewer. Character Viewer displays all of the characters in all of the fonts installed on your system. To find a particular character, you can browse by category or use the Search field. Character Viewer will show samples of your target character in all the installed fonts on your system. Double-clicking on the one you want inserts it into your text.

You can also use the Unicode ID number of a character to access it directly from your keyboard. To do this, once again open the Language & Text pane from within System Preferences and click the Input Sources tab. In the selection list put a check mark next to Unicode Hex Input, which adds this option to the Input menu. With Unicode Hex Input selected in the Input menu, holding down the Option key and typing a character's Unicode ID adds that character to your document. The downside of Hex Input is that when this input option is activated, you lose the ability to use the familiar Option and Shift-Option keyboard character-access commands. Nevertheless, if you maintain a list of commonly used Unicode numbers for hard-to-access characters, switching options in the Input menu is faster than finding the characters using a glyph palette.

Application Glyph Palettes

Page layout programs offer their own tools for browsing the contents of fonts and copying selected characters into document text. These are similar in concept to Windows' Character Map, but they offer easier access to alternate

glyphs where they exist for certain characters. You can usually create collections or sets of commonly used characters for which you have no direct keyboard access.

“Expert Sets” and Alternate Fonts

Before Unicode and OpenType came along, most fonts were restricted to 256 characters, and Latin-based alphanumeric fonts all contained a standard character set. (TrueType fonts have long been able to have larger character sets, but most font vendors—for the sake of compatibility—matched the character sets of their TrueType fonts to the sets of the PostScript fonts.) Those restrictions, though, were without historical precedent, and some typefaces had many characters for which there was no room in the standard font layouts.

The solution to the problem was to create companion fonts for certain typefaces, fonts that contained alternate characters. These companion fonts are called *expert sets* or *alternate fonts*. They include such characters as old-style numerals (which have varying heights, and some of which have descenders) and small capitals (scaled-down versions of capital letters made to be used amid lowercase type, where they are less obtrusive than full-size capitals). Other common expert-set or alternate characters include ligatures (tied letter combinations) and swash characters (with exaggerated terminals). Examples are shown in Figure 4.8.

The layouts of these fonts are not standard, so they’re usually sold with a chart showing which keystrokes yield which characters. Unfortunately, Unicode-based character-locating utilities won’t help, since most of these fonts predate Unicode, and many of the characters do not have standard Unicode numbers assigned to them in any case.

Expert-set fonts are also troublesome to use because they require a change of font, often for a single character. Macro programs or utilities—which enable you to program a key or screen button to execute a series of commands—are indispensable for dealing with expert-set fonts, as well as with pi fonts, for which you also need two changes of typeface to set a single character.

Fortunately, most typefaces with such extended character sets have been re-released in OpenType format, with their alternate sorts now rolled into a single font.

Characters outside the Unicode Standard

The encoding issue brings up a murky side of Unicode: namely, if Unicode assigns specific numbers to specific characters, what happens when a type designer creates characters that aren’t accommodated in the Unicode list?

old-style numerals

I 2 3 4 5
6 7 8 9 o

small capitals

A B C D E F G
H I J K L M N
O P Q R S T U
V W X Y Z

swash characters

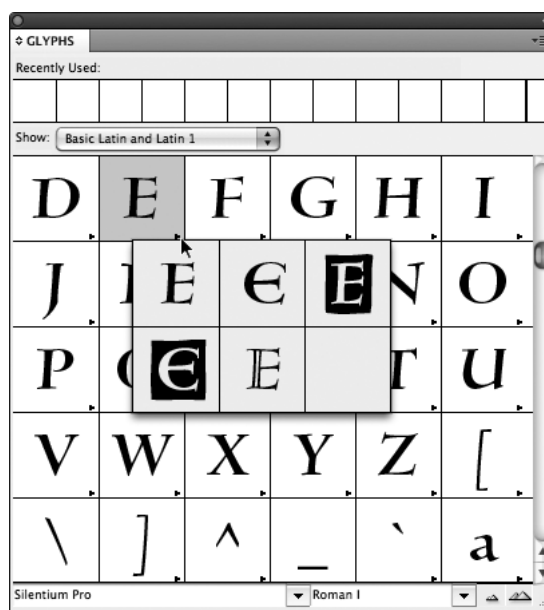
Œ B C D E F
G H I J K L
M N O P Q R
S T U V W X
Y Z

ligatures

ff ffi ffl Rp &t

FIGURE 4.8 Expert-set fonts and alternate fonts contain characters that belong to a typeface but for which there’s no room in the face’s principal font. The characters shown here are drawn from the alternate and expert-set fonts for Adobe Garamond. With the larger character sets made possible by the TrueType and OpenType font formats, alternate fonts will eventually fade away, and these kinds of characters will be united with the font’s standard characters in a single font.

FIGURE 4.9 One Unicode number can point to several alternate versions of a single character. Here, four alternate forms of the *E* have been added to Adobe's *Silentium Pro* OpenType font, and they pop up from the basic character display grid in InDesign's character browser.



Such characters include many of those normally found in expert-set and alternate fonts.

The answer is that the Unicode scheme contains a range of numbers designated for “Private Use,” and here a type designer can add customized characters. The meaning of these Unicode numbers, then, will vary from font to font. To simplify the arrangement, OpenType fonts can also contain links among characters to make it clear to an application or operating system that a particular character is actually an alternate form of one of the characters in the standard Unicode encoding. Figure 4.9 shows how an application can offer the choice of alternate characters to the user. By adding several planes to each character slot, the size of the total onscreen character grid is cut down to more manageable proportions, and characters can be found in logical places.

Look forward to the day when keyboards have illuminated readouts on the keys, so that when fonts change, keyboard layouts will change and the new character assignments will appear on the keys themselves. With the advent of large-character-set Unicode fonts, no one will be able to be a touch typist all the time anymore.

OpenType Layout Features

The OpenType font format was designed with internal structures that allow a type designer to populate a font with alternate forms for certain characters. These *layout features* allow you to have OpenType-savvy programs automatically substitute alternate characters when they’re available. These substitutions can

be restricted to a selected passage of text or applied globally to entire documents. The more common layout features are listed here. The uses of such alternate glyphs are discussed in detail in Chapter 13.

SMALL CAPS

Reduced-size capital letters are used for setting certain kinds of type, including acronyms (NATO) and certain abbreviations (A.M., P.M.). Capital letters that have been electronically scaled down in size are ill proportioned in this role, so specifically designed small capitals should be used when available. With the OpenType small caps option turned on, any capital letters in the text will be converted to small caps, so this control should be applied locally only, to specific capitals that need to be set in reduced size.

ALTERNATE NUMERALS

The standard numerals contained in most typefaces all sit on the baseline and all have the same width. These are called *tabular lining numerals*. Alternate forms with proportional, varying widths—*proportional lining numerals*—may also be available in a font. Other alternate forms include old-style (or lower-case) numerals, in both tabular and proportional styles. Leaving the OpenType option set for Default Figure Style will set numerals in the preferred style designated by the typeface designer.

AUTOMATIC FRACTIONS

When this option is enabled, OpenType fonts that contain the necessary numerator and denominator glyphs can be used to automatically generate fractions. The keystroke sequence 12/25, for example, will be converted to $\frac{12}{25}$.

ALTERNATE LIGATURES

Ligatures are fused characters designed to alleviate certain awkward character-shape interactions and sometimes used for historical or linguistic reasons. All text fonts include the common *fl* and *fi* ligatures, but some fonts contain many more. These can be made to appear in the text by turning on this layout feature. In most cases, this will be a global selection, affecting the entire document.

SWASH CHARACTERS

Swashes are exaggerated extensions to the strokes of certain characters, both upper- and lowercase. Selecting this option substitutes them for their normal undecorated forms.

SUPERSCRIPTS AND SUBSCRIPTS, ORDINALS AND SUPERIORS

Superscripts and subscripts are reduced-size letters and numerals used in mathematical and scientific notation, such as $E = MC^2$ and H_2O . Ordinals are alphabetic characters used for indicating numeric values such as 1st (in English) and 1^o (in Spanish). How superscripts, subscripts, and ordinals align relative to each other and to full-size text varies from typeface to typeface.

TITLING AND CASE-SPECIFIC FORMS

Titling characters are designed for use in large display sizes. Sometimes they are available only in uppercase forms. Case-specific alternates include characters such as elevated hyphens for use in all-caps material.

CONTEXTUAL ALTERNATES AND POSITIONAL FORMS

In some settings, principally non-English and particularly Arabic text, the shape and alignment of a character vary according to where in a word it appears. In such cases, contextual alternate forms are used.

SLASHED ZERO

When available, a slashed zero (Ø) can be substituted for a normal zero to avoid confusion with a capital O.

STYLISTIC SETS

Some alternate glyph categories are essentially “none of the above.” These sets are designated by the typeface designer and may consist of a single glyph, such as the historical medial *s*: *f*. They may also include sets of lowercase characters with longer or shorter ascenders and descenders. Their contents can be viewed from within application glyph palettes.

Identifying Font Formats

If you’ve read this chapter from the beginning, you’ll realize that not all fonts behave the same way. PostScript fonts, TrueType fonts, and OpenType fonts all have their own idiosyncrasies, not to mention some major functional differences. It’s important to be able to tell them apart.

If you’re looking in the folders where the operating system stores them, you can distinguish among the three formats relatively easily. Some applications display icons alongside the entries in their Font menus, but such displays are

not standardized and not always perfectly clear. In general, it's better to know the formats of the fonts you use before you install them in your system and to create a method for keeping track of what's what. Fonts in different formats may appear with identical names in your Font menus, and having two such fonts listed side by side is something you want to avoid. Furthermore, it's entirely possible for an operating system to fail to distinguish between two fonts of the same name in different formats and to list just one of them in an application's Font menu. Not only won't you know that there are two fonts with the same name on your system, but you also won't know which one you're getting.

At one time, only OpenType fonts containing PostScript font data (so-called PostScript-flavored OpenType fonts) ended with the filename extension .otf. This is no longer the case. The .otf filename extension simply means that it is an OpenType font file that can be used on either a Mac or a PC. While TrueType fonts normally carry the filename extension .ttf, a TrueType font file that will work on either platform gets the .otf extension.

Fortunately, it no longer matters whether a given OpenType font contains TrueType or PostScript font data. Both work equally well on all computers and output devices, and all incompatibilities between the two ways of programming fonts have been ironed out. Nevertheless, if you want to, you can see what kind of font data a particular OpenType font contains. On the Mac, choose Show Font Info for a selected font from Font Book's Preview menu. On a Windows PC, this information is generally shown as part of the font file names in the Windows/Fonts folder. If this display is ambiguous, select the font file name and choose Properties from the File menu.

Identifying Macintosh Fonts

The Mac icon for an OpenType font is shown in Figure 4.10, both as it appeared before OS X 10.5 and after. Starting with OS X 10.5, all font icons show a small preview of the typeface itself.

PostScript Type 1 fonts typically appear in Mac Finder windows without any filename extensions. That's because most of them predate OS X, which introduced the need for filename extensions on the Mac as a means of identifying file types. Using Get Info will reveal whether a font is a PostScript font. In the PostScript regime, each member of a font family is a separate file, so their names can become long enough that they have to be abbreviated into forms—such as *OfficSerBoolta* (*Officina Serif Book Italic*)—that may make them nearly unrecognizable. The weirdness of the names is often a giveaway.

In early versions of OS X, icons for PostScript fonts bore the label **LWFN**, short for LaserWriter Font (in homage to Apple's first laser printer). The icons of the companion collections of screen fonts were labeled **FFIL** (Font File).

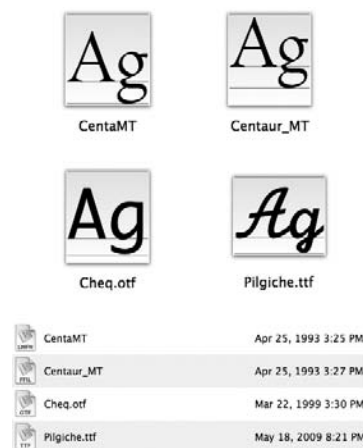


FIGURE 4.10 Beginning with OS X 10.5, Mac font icons display a sample of the typeface the font represents, as shown above. If you choose, OS X will also display filename extensions, although this may not work on older PostScript fonts, as shown on the top here. Of these two Centaur font icons, the one on the left is the outline (printer) font, and the one on the right, its bitmapped (screen) complement. For more information about the format of a font file, select the file and choose Get Info from the Finder's File menu. In the Finder's large-icon list view of the same font files below, barely visible on the icons are the legends **LWFN**, **FFIL**, **OTF**, and **TTF**.

These can still be seen in the Finder's large-icon list view, as seen in Figure 4.10. The FFIL label may also be applied to TrueType fonts that include embedded bitmaps for screen display at particular sizes. In certain Finder views, a TrueType font may be referred to as a *font suitcase*, a term usually reserved for a collection of bitmapped screen fonts associated with a PostScript Type 1 font.

TrueType fonts are most commonly displayed in the Finder with one of two possible filename extensions. One is .ttf (TrueType font) and the other .ttc (TrueType Collection). TrueType Collections are single fonts that contain character outline data for several typefaces. The font AmericanTypewriter.ttc, for example, can generate type in six typefaces: Light, Regular, Bold, Light Condensed, Condensed, and Bold Condensed. The icon for such a font is a small preview of the regular roman member of the family.

If you use the Finder's List view instead of the Icon view, you will have to rely on the file names alone, as the tiny icons that precede individual file names are too small to decipher. If you opt for the Column view, you have the option of displaying a preview column that for any selected font shows a typeface sample in addition to information on the font's format.

Identifying the Formats of Windows Fonts

In versions of Windows prior to Windows 7, if you look at fonts in their folders, you'll see them all identified with unique icons that distinguish PostScript from TrueType from OpenType fonts (see Figure 4.11).

In versions of Windows through XP, the filename extensions of font files are displayed in the Fonts folder. In later versions, only checking Properties in the File menu will reveal the filename extension. TrueType font names have the extension .ttf (TrueType font) or .ttc (TrueType Collection; a single font representing multiple typefaces), although these extensions can also be used for "TrueType flavored" OpenType fonts. As far as Windows is concerned, those formats are virtually identical, varying only by their character sets. Not all OpenType fonts, then, will have an .otf filename extension. Those that do will also work on a Macintosh.

If you're using Windows 7 or later, you should choose the Details view for the Font menu. Once you've turned on the option to display Font Type (by right-clicking in the column-titles bar) this view will show you each font's format plus other useful information. For most fonts you install, you can also right-click on their file names and select Properties from the pop-up menu that appears. This panel displays a range of information about each font. The Properties option is not available, however, for many of the fonts included with Windows 7.



FIGURE 4.11 Versions of Windows before Windows 7 clearly identify the formats of all fonts. In the Fonts window at left, the large-icon view clearly marks the file icons with the *TT* that stands for TrueType, an *O* for OpenType, or a lowercase italic *a* for PostScript fonts. The icon with a capital *A* indicates a bitmapped font. On the right, the view has been switched to Details, which explicitly lists each font's formats under the heading *Font type*.

PostScript Type 1 fonts have the filename extension *.pfb* (for the font files containing the character outline data; the *b* stands for *binary*) and *.pfm* (for the corresponding file containing the bitmapped screen fonts and *metrics*—that is, character-width—data). Because at the time of these fonts' manufacture most versions of Windows were based on DOS (disk operating system), the length of older font file names were limited to eight characters plus a filename extension (after a punctuating dot) of three more characters. This makes the names of most PostScript fonts completely unintelligible. It's not apparent, for example, that *VARG____.pfb* is actually Viva Regular. Fortunately, when they're placed in the Windows/Fonts folder (where installed Windows fonts are normally stored), Windows reads the true name of the typeface from within the font and displays it in readable form. In addition, it's common for Windows applications to indicate in their Font menu the formats of the fonts listed. Here, ideally, is where you want to know this information, and it would be preferable if all programs on all platforms performed this useful service (see Figure 4.12).

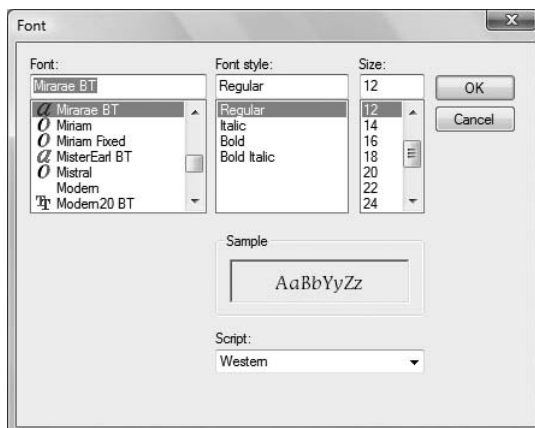


FIGURE 4.12 The Font menus of Windows programs often identify the formats of fonts with small icons. In this window, Windows Notepad distinguishes between TrueType, PostScript, and OpenType fonts in its scrolling font list. The Windows system's bitmapped Modern font appears without an icon.

The Basics of Font Management

For operating systems to be able to use them, font files need to be stored in specific places. On a Windows PC, the principal font storehouse is the Windows/Fonts folder. From here, using a command from the File menu, you can install new fonts. You can also drag font files into this folder from other sources.

On the Mac, font files are stored in Fonts folders in each of the Library folders on the computer. The fonts in the Library found in the root folder are available to all users of that Mac. Fonts stored in the Libraries of individual users (found in the Users folder) are available only to those users. The fonts in the Library inside the System folder are used by the operating system and shouldn't be touched.

Certain application programs—generally those that come with their own collection of fonts—will store fonts in their own folders, where they alone can have access to them. This is a way of assuring that other applications can't use them, as they are generally licensed to the user only for use with the host application.

Font-Management Programs

There is a breed of utility program called a *font manager*, whose job it is to help organize and manage the huge numbers of fonts that can come to populate your computer. Having too many fonts installed on your computer at the same time creates two main problems: First, it slows down your computer, which has to constantly keep track of all of those fonts. (Too many installed fonts may in fact cause your computer to freeze.) Second, it creates a Font menu that's too long to manage, requiring endless scrolling to find the font you're after. The main thing a font manager does is enable you to keep the number of fonts in your system at a minimum with very little effort.

The principal way it does this is by allowing you to install or remove fonts from active service individually or en masse at any time. You can build *font sets* to make this easier. You can have a certain set of fonts for a specific job, or a certain set of fonts that are associated with a particular program. Fonts can belong to two or more of these sets. Some font managers can automatically install whatever fonts are needed by a document that you open.

In addition, font management programs can help you organize your fonts in logical ways. Whereas an operating system would throw them in a single heap (or, worse, several hard-to-locate heaps), a font-management program can organize them according to any criteria you like: font format; historical style; text, display, or decorative use; or whatever else.

Mac OS X includes its own font-management program: Font Book, located in the Applications folder. Windows has no such utility, although there are several available from independent software developers.

Font-Editing Programs

Font-editing programs are the tools that type designers use to create fonts from scratch. They include tools to draw character outlines as well as to edit those outlines later. Font editors can be useful to the nondesigner as well, as they can add characters to a font (a digitized corporate logo, for example). They are also sometimes used by demanding typographers to improve the quality of the kerning information within a font.

Creating customized fonts can have its advantages, but its disadvantages are very serious. Edited fonts become unique fonts, and unless they have been given unique names, they can become confused with existing retail fonts. Fonts that have had their kerning information altered, for example, will cause text to compose in a unique way, and these differences are enshrined in the font, not in the document. If that document travels to a place where the custom font that created it is unavailable, it will not compose correctly, line endings will change, and whole layouts can become disrupted.

Because font files are mobile, a customized font that escapes its handlers can cause havoc if it becomes confused (or used) with its unedited forbear. Edited fonts, then, have to be employed with great care and control.



Index

Symbols

Accents

- ´ (acute accent), 58, 210
- ˘ (breve), 210, 260
- ¸ (cedilla), 211, 260
- ^ (circumflex), 59, 260
- ¨ (dieresis or umlaut), 59, 211, 260
- ˆ (double acute), 210, 211, 260
- ` (grave accent), 59, 211, 260, 265
- ˇ (haček), 211, 260
- ˉ (macron), 211, 260
- ˙ (ogonek), 211, 260
- ° (ring), 211, 260
- ˜ (tilde), 59, 146, 211, 260

Currency symbols

- ¢ (cent sign), 212
- \$ (dollar sign), 27, 128, 212, 261–262
- € (euro), 261
- £ (British pound-sterling sign), 261
- ¥ (Japanese yen sign), 261

Footnote reference symbols

- * (asterisk), 193, 212, 233
- † (dagger), 193, 233
- ‡ (double dagger), 233
- § (section mark), 212, 233
- ¶ (paragraph mark), 212, 233

Mathematical symbols

- ≈ (approximately equal to sign), 212
- ° (degree symbol), 212, 263
- ÷ (division sign), 212
- = (equals sign), 23, 212
- > (greater than sign), 212
- ≥ (greater than or equal to sign), 212
- < (less than sign), 212
- ≤ (less than or equal to sign), 212

- (minus sign), 212
- × (multiplication sign), 212
- ≠ (not equal to sign), 212
- % (percent sign), 212
- +
- ± (plus or minus sign), 212
- × (powers of magnitude), 212
- ' " (primes), 212. *See also* primes
- / virgule, 91, 141, 205–206

Punctuation

- ' (apostrophe), 76, 155, 171, 267
- (en dash). *See* en dash
- (hyphen). *See* hyphenation
- () parentheses. *See* parentheses ()
- , (comma). *See* commas (,)
- . (period). *See* periods (.)
- ... (ellipsis, three-dot). *See* ellipsis, three-dot (...)
- (ellipsis, four-dot), 209, 318
- / virgule, 91, 141, 205–206
- ; (semicolon), 76, 89, 234, 236
- [] (brackets), 90, 171, 192, 300
- _ (underscore), 88–89, 327
- { } (braces), 192, 299
- ‘ ’ “ ” (quotation marks). *See* quotation marks
- « » (guillemets). *See* guillemets (« »)
- (em dash). *See* em dashes

Other symbols

- & (ampersand), 212
- @ (at sign), 212
- (bullet). *See* bullets (•)
- © (copyright symbol), 212
- # (number or pound sign), 212
- ® (registered trademark), 212
- ™ (trademark), 212

A

a.m., conventions for, 260–261

abbreviations

a.m., p.m., 63, 200, 260–261

acronyms, 200

American or British styles, 263

B.C., B.C.E., A.D., 200

in French, 204, 263

of Latin terms, 76

n/a or N.A., 257

with periods, 200

small caps and, 63, 200

absolute measurement, 21–24, 297, 307

accented characters

accessing in glyph browser, 58, 259

accessing in Macintosh, 59, 259

accessing in Windows, 58, 259

escapement for, 7

in extended character sets, 198–199

French typographic conventions, 265

overview of, 211

Spanish typographic conventions, 267

used by major European languages, 261

acronyms. *See also* abbreviations

preventing hyphenation of, 146

small caps for, 63, 200

acute accent ('), 58, 210

Adobe Garamond typeface, 61, 74, 97,

133, 232

Adobe InDesign, 58, 96

Adobe Portable Document Format, 291

Adobe Systems, Inc.

development of OpenType, 51–52, 54

development of PostScript, 13, 15,

21–22

font hinting, 16

advertising type

agates in, 27

decorative typefaces in, 44, 79

display advertising, 73, 304

dotless *i* in, 211

as norm in advertising, 108–109

sans serif fonts used in, 40

top alignment of superior figures in, 192

aesthetic rags, 164–165

agates, 27, 297

Akzidnez Grotesque typeface, 73

Aldines typeface, 42, 76, 297

algorithm, defined, 297

algorithmic (optical) kerning, 172, 297, 317

algorithmic hyphenation, 144–145, 297

alignment

baseline shifts correcting, 129

captions and legends and, 230–231

currency symbols in tables and,

256–257

defined, 179

drop caps and, 213

footnotes and endnotes and, 232

hanging characters and, 193

of heads and tab entries, 252–254

of numeric tables, 254–257

old-style numerals and, 201

optical effects and, 112–113

outline form and, 224

oversized characters and, 195

page and baseline grids and, 190–191

vertical, 191–193

visual, 193–195

void or missing entries and, 257

alphabetic indicators, outline form, 224

alphanumeric fonts, 51, 297

Alt key, Windows' Character Map, 58

alternate characters

for alternate fonts, 61–62

defined, 297

designing into typeface, 199

old-style numerals available as, 201

OpenType layout using, 62

alternate fonts, 61–62, 297

alternate ligatures, 63

alternate numerals, 63

alternate sorts, 199

American English

British English vs., 262–263

rules of hyphenation, 260

American point, 22, 297

American Standard for Computer

Information Interchange. *See* ASCII

(American Standard for Computer

Information Interchange)

- American Type Founders. *See* ATF
(American Type Founders)
- Americana typeface (Kingsley ATF), 32
- ampersand (&), 212
- angled type, and low resolutions, 286
- anti-aliasing (font smoothing)
- defined, 297
 - how fonts are used for screen display, 96
 - legible screen type with, 18–19
 - onscreen legibility with, 289–290
 - onscreen legibility with loose tracking and, 175–176
 - screen display and, 287
 - using grayscale in, 309
- Antique #3 typeface, 47
- Antique Olive typeface, 32, 47
- antique typeface
- confusion of name, 47
 - defined, 298
 - Egyptian typefaces, 305
 - x-height of Antique Olive, 32
- apex, of character, 23, 298
- apostrophe (')
- character widths in H&J, 155
 - Italian, 267
 - kerning italics-romans, 171
 - possessive “s” in italic words and, 76
- Apple
- creating OpenType with Microsoft, 54
 - creating TrueType with Microsoft, 53
 - pioneering WYSIWYG, 95–96
- Apple Systems, Inc., 53, 210
- applications
- character browsers for, 62, 211
 - finding characters, 60–61
 - font storage, 68
 - font-browsing tools, 58
 - PostScript font support, 52–53
- Arabic numerals, in outline forms, 224
- Arial Unicode MS typeface, 197
- arm, of character, 33, 298
- Arno Pro Open-Type font family, 39
- Arrighi, Ludovico, 42
- arrows, as pi fonts, 210
- ascender line
- defined, 298
 - point size and, 318
 - rectangular wraps and, 188
 - superiors and, 204, 325
 - text frames and, 191, 308
 - top alignment using, 191–192, 246
- ascenders
- defined, 298
 - and leading, 133
 - and leading in display type, 129
 - overview of, 36
 - rectangular wraps and, 188
 - screen display and, 288
- ASCII (American Standard for Computer Information Interchange)
- character sets, 55
 - defined, 298
 - typewriter-style quotation marks, 90, 298, 327
- asterisk (*), 193, 212, 233
- asymmetrical leading, display type, 129
- ATF (American Type Founders)
- Americana, 32
 - defined, 298
 - Goudy Old Style, 36, 74
- author's name
- bibliographies and, 236–237
 - running heads and, 227
- auto-activation, 298
- automatic fractions, OpenType, 63
- automatic kerning
- character width and, 132
 - defined, 298
 - turning off for kerning algorithm, 173
- automatic leading, 124–125, 298
- automatic ligature substitutions, 202–203
- Avant Garde Gothic, ITC, 32, 47, 308
- axis, 191, 298, 300

B

- background
- low-resolution printing and, 285
 - tracking and, 175
- balanced columns, and orphans, 161

- ballot boxes, setting, 210
- bar, of character
 - defined, 298
 - illustrated, 33
 - old-style typefaces, 45
- base alignment
 - baseline grids for, 190
 - of characters and text, 193
 - defined, 298
 - of fraction bar, 206
 - of fraction denominators, 192, 204
 - of leading in text frames, 125
 - of lining figures, 201
 - of quotation marks, 268
 - spreadsheet-style tables and, 243
- baseline grid
 - defined, 298
 - footnote point size and, 231
 - jump lines and, 228
 - leading legends/captions and, 230–231
 - overview of, 190
 - rectangular wraps and, 188
 - text frame object style and, 275
 - text frames and, 125, 190–191
 - vertical justification and, 163
- baseline shift
 - accent over capitals and, 211
 - defined, 298
 - overview of, 128–129
 - top alignment and, 192
- baselines
 - defined, 298
 - descenders and, 36
 - inferiors centered on, 204–205
 - leading and, 122, 125–126
 - optical aspects of design, 37
 - rectangular wraps and, 187–188
 - spreadsheet-style tables and, 245
 - table rules and, 251–252
 - text set on curved, 177
 - type design with em square and, 30–31
- Baskerville typeface, 46, 74–75
- Baskerville, John, 41
- batch pagination, 161–162, 299
- Bauhaus design school, 40
- beak, or beaked serif, 299
- Bell Centennial typeface, 37
- Bembo typeface, Monotype, 46, 74, 296
- benchmark documents, H&J and, 156
- Bézier curves, 15, 299, 326
- bibliographies, 236–237
- bitmapped fonts
 - identifying, 67
 - overview of, 49–50
 - PostScript fonts and, 52
 - screen display and, 287, 322
- bitmaps
 - defined, 299
 - history of, 14
 - overview of, 49
 - screen display and, 96
- bits, of computer data
 - creating bitmaps, 14, 49
 - defined, 299
 - high-bit ASCII, 310
- Bitstream typefaces
 - Cheltenham, 97
 - Clarendon, 35
 - Incised 901, 97
 - OpenType character set, 51
- black letter typeface
 - confusing name of, 47
 - defined, 299
 - readability of, 72
- blocks of type, 4–5
- Bodoni typefaces
 - Baskerville text face vs., 75
 - family, 43
 - hairline serif of, 308
 - modern faces and, 46–47
 - naming issues, 47
 - resolution and, 17
 - tracking and, 175
 - x-height and, 32
- Bodoni, Giambattista, 47
- bold type. *See also* semibold typefaces
 - in bibliographies, 236
 - in Cascading Style Sheets, 292
 - defined, 299
 - degrees of, 41
 - display type and, 78
 - for emphasis, 75–76

- index entries and, 234
 - jump lines and, 228
 - and low resolutions, 284
 - run-in subheads and, 221
 - screen rendering with missing fonts
 - and, 97–98
 - setting, 96–97
 - for subheads, 220
 - in tables, 245–246
 - typeface weight and, 40–41
 - typewriting vs. typesetting, 88–89
 - book weight, 132, 299
 - Bookman Antique typeface, *ITC*, 47, 298
 - Bookman Italic typeface, *ITC*, 42
 - Bookman Light typeface, *ITC*, 41, 132
 - books
 - display type and, 78
 - folios of, 307
 - French capitalization and, 266
 - metric measurements for, 24
 - multiline H&J and, 140–141
 - page setup and, 118
 - point size in, 122
 - running heads and, 227
 - seriffed roman types for, 72
 - text faces for, 44
 - transitional typefaces and, 46
 - bottom alignment
 - defined, 191, 299
 - of multiline column headings, 249
 - with page grid, 190
 - in tables, 246
 - vertical, 193
 - bottom rules, tables, 247
 - bounding boxes
 - aligning oversized characters, 195
 - defined, 299
 - kerns and, 168
 - narrow-measure and, 111–112
 - optical effects and alignment, 111–112
 - point size and, 23
 - in serif typefaces, 131–132
 - text frames as. *See* text frames
 - type design and, 5
 - bowl, of character
 - counter inside, 302
 - defined, 299
 - loop of g as lower, 313
 - type anatomy, 33
 - boxed sidebar text, 228
 - braces { }, 192, 299
 - bracketed serifs, 34–35, 300
 - brackets [], 90, 171, 192, 300
 - British English typographic conventions
 - American English vs., 262–263
 - French text using quotation mark style
 - of, 264
 - rules of hyphenation, 260
 - broadside orientation, of tables,
 - 240–241, 300
 - browsing tools, fonts, 58–64
 - bullets (•)
 - balancing column widths and
 - gutters, 249
 - center alignment and, 192
 - followed by spaces, 210
 - as pi characters, 209, 280
 - searching Character Map for, 59
 - sidestepping first-line indents, 183
- ## C
- calligraphy
 - as basis for Gutenberg's system, 5
 - swash characters and, 203
 - typeface letterforms deriving from,
 - 32–33
 - cancellaresca lettering, 42
 - cap height
 - ascenders and descenders and, 36
 - bullets and, 192
 - centering text between rules and,
 - 251–252
 - defined, 300
 - in old-style numerals, 316
 - page layout and, 125
 - screen display and, 288
 - type size and, 131
 - capital line, defined, 300
 - capitalization. *See also* uppercase
 - alignment in outline forms, 224
 - bibliography entries, 236

- capitalization (*continued*)
 - caps-and-small caps style. *See* caps-and-small caps
 - captions, 229
 - center alignment, 192
 - centering text between rules, 251–252
 - chapter headings, 219
 - for emphasis, 88
 - French conventions, 265–266
 - German conventions, 267
 - initial capitals. *See* initial capitals
 - kerning letter pairs, 168–169
 - placing accents, 211
 - small caps. *See* small caps
 - swash characters, 203
 - in titling faces, 78
- caps and small caps
 - author's name in bibliography in, 236
 - straddle heads in, 245
- caps-and-small caps
 - captions in, 229
 - of cut-in subheads, 222
 - of running heads, 227
 - of subheadings, 219–220
- captions
 - defined, 300
 - legends vs., 229
 - multiple master fonts for, 39
 - style sheets for, 277, 281
 - in tables, 247
 - typographic conventions for, 229–230
- carriage returns. *See also* Return key
 - defined, 300
 - hard return as, 310
 - line endings and, 85–86
 - return command derived from, 321
- Carta font, Adobe, 44
- Carter, Matthew, 287
- Cascading Style Sheets (css), 291–293
- Caslon typeface, 45–46, 74, 78
- Caslon, William, 46
- catalogs
 - leading in, 130
 - nested style sheets for, 274
- cathode-ray tube (CRT), 12–14, 302
- CD-ROM manuals, tracking for, 175
- cedilla (¸), 211, 260
- cell style sheets, tables, 275
- cells, table
 - alignment of, 246, 254–255
 - defined, 300
 - hanging characters in numeric, 255–256
 - leading of rules and, 250–252
 - spreadsheet-style, 243–245
 - style sheets and, 275
 - typesetting, 242, 247–248
- cent sign (¢), 212
- Centaur typeface, 32, 78
- center alignment
 - of characters, 192
 - defined, 191, 300
 - German conventions, 267
 - problems with centered text, 194–195
 - of subheads, 222
 - of tables, 246, 251–252
- centered text
 - aesthetic rags and, 164
 - aligning heads and tab entries, 252
 - defined, 300
 - problems with, 194–195
- Century typefaces
 - Century Expanded typeface, 43, 77
 - Century Old Style typeface, 43, 73
 - Century Schoolbook typeface, 301
 - New Century Schoolbook typeface, 30
- chancery italic typeface, 42, 300
- chapter headings, 218–220, 224–225
- character attributes
 - defined, 128, 300
 - style sheets and, 272, 278–279
- Character Attributes dialog box, 94
- character browsers, 62, 211
- character fitting, 79, 301
- Character Map, Windows, 58–59, 211, 258
- character sets. *See also* special characters
 - ASCII backward compatibility, 55
 - bounding boxes and, 5
 - defined, 51, 301
 - expert sets, 61
 - extended, 197–199
 - figure space in, 26
 - font encoding and, 57

- fraction bar. *See* fraction bar (/)
- glyph sets compared to, 56
- hanging characters in tables and, 255
- language issues, 259–260
- Latin, 258–259
- Macintosh, 60
- Monotype, 9, 11
- OpenType, 51, 54
- PostScript, 51, 54
- TrueType, 53–54
- unavailable characters, 89–91
- underscore and, 88
- Unicode, 55, 62
- character spacing
 - defined, 301
 - em-based character widths and, 24–25
 - onscreen legibility and, 289
 - script faces and, 176
 - specific issues, 212–213
 - wysiwyg computing and, 95
- character styles. *See also* style sheets
 - applying with existing formatting, 278–279
 - assigning to style sheets, 273
 - creating style sheets from existing text, 278
 - embedding within paragraph styles, 274
- character switching, contextual, 301
- Character Viewer, Mac OS X, 60, 258
- character width
 - altering during H&J, 154–155
 - of condensed and extended faces, 77–78
 - defined, 301
 - effect of, 132
 - em-based, 24–25
 - expressing in relative units, 30
 - how wysiwyg works, 95
 - kerning numerals and, 173
 - legibility and, 43
 - monospaced type and, 8–9
 - Monotype fonts and, 11
 - Monotype systems and, 9–10
 - of old-style numerals, 201
 - of PostScript Type 1 fonts, 67
 - proportional type and, 9
 - type size and, 131
 - varying, 131
- character-based leading, 128–129
- character-by-character calculations, in H&J, 138–139
- characters. *See also* special characters
 - aligning oversized, 195
 - alignment. *See* alignment
 - vs. glyphs, 56
 - handset metal type, 4
 - hanging, 193
 - indents on, 185
 - outlines for, 15–16, 51–52
 - top alignment of, 192
 - type design using em square, 30–32
 - typeface as collection of, 29–30
 - typewriting vs. typesetting, 89–91
 - visual alignment of, 193–195
- characters, font-browsing tools
 - application glyph palettes, 60–61
 - characters outside of Unicode standard, 61–62
 - expert sets and alternate fonts, 61
 - Mac OS and Unicode, 60
 - Macintosh's Keyboard Viewer, 59–60
 - OpenType layout features, 62–63
 - Windows' Character Map, 58–59
- Cheltenham typeface, Bitstream, 97
- children. *See* parent-child style sheets
- Chinese language, 53
- ciceros, 27, 301
- circumflex (^), 59, 260
- Clarendon typefaces, 35, 47, 301
- closed-up characters
 - defined, 212, 301
 - footnote symbols set as, 233
 - fractions set as, 206
 - temperatures in American style set as, 263
 - types of, 213
- color, type. *See* type color
- colored type, setting, 79–80
- columns
 - aligning heads and tab entries, 252–254
 - Cascading Style Sheets and, 292–293
 - gutters between, 130, 248–249

columns (*continued*)

- hanging characters and, 193
- measure in, 117–118
- measuring depth in agates, 27
- measuring width in picas, 23
- narrow-measure problems, 112
- orphans in, 160–161
- outlines as, 224
- page grids defining, 190
- parent-child style sheets and, 276
- ragged margins and, 194
- rectangular wraps and, 188–189
- setting, 248
- single-column in typewriters, 83–84
- specifying, 241–242
- structure of, 239–241
- table of contents and, 225
- vertical justification of, 162
- vertical space bands and, 127–128
- visual alignment and, 113

columns, in tables

- balancing column widths and gutters, 248–249
- defining, 239–241
- jump lines and, 228
- page-breaks in indexes and, 235–236
- specifying, 241–242
- stub column and, 323

comma-delimited text, tables, 247

commas (,)

- American English quotations, 262
- currency symbols and, 257
- French numeric expressions, 266
- French punctuation style, 265
- French quotation style, 264
- hanging punctuation and, 193, 310
- inverted, 327
- monospaced, 8
- punctuation after italics, 76
- Spanish conventions, 266

compatibility issues

- with fonts, 56–58
- with numbering systems, 55

composition problems

- loose lines/tight lines, 156–158
- paragraph color, 158–159

- rivers, 163–164

- vertical justification, 161–163

- widows and orphans, 159–161

- wrapped margins, 186

compound modifiers

- hard hyphens in, 207

- when to use en dash instead of hyphen in, 207

compressed typefaces. *See* condensed typefacescomputer typesetting systems. *See also* typesetting

- corrupted fonts, 99–100

- duplicate fonts, 101

- font copyright issues, 102–103

- font embedding, 101–102

- how fonts are used for screen display, 96–98

- how operating systems manage fonts, 98–99

- how WYSIWYG works, 95–96

- missing fonts, 100–101

- overview of, 91

- typesetting and word processing legacy, 93–95

concave baselines, text set on, 177

condensed typefaces

- defined, 43, 301

- drop caps and, 214

- legends and, 230

- legibility and, 110

- letter spaces and, 142–143

- synthesized by computer, 77–78

- text on curved baselines using, 177

- uses for, 77

- word spaces and, 27, 142–143, 208

content signposting, 221

contextual character switching, 301

continued from statement, 228

contrast

- colored ink, 79

- defined, 301

- Dutch typefaces, 304

- Egyptian typefaces, 305

- Garaldes typefaces, 308

- modern typefaces, 46–47, 72, 315

- old-style typefaces, 45, 316
- overall color of type and, 106–107
- reversed type, 80
- sans serif faces, 77, 322
- text faces, 74, 326
- between thick and thin portion of
 - strokes, 39, 45–47
- transitional typefaces, 46, 72
- Venetian typefaces, 327
- control characters, defined, 301
- convex baselines, 177
- copy-fitting, not adjusting tracking for, 175
- copyright issues, fonts, 47, 102–103
- copyright symbol (©), 212
- core font set, defined, 302
- corrupted fonts, 99–100, 302, 308
- counter, of character
 - defined, 302
 - illustrated, 33
 - in low print resolutions, 285
 - master character designs and, 38
- Courier typeface, 8–9, 83, 101
- crossbar, of character
 - defined, 302
 - em-based white-space adjustments and,
 - 25–26
 - illustrated, 33
 - old-style typefaces and, 45
- cross-platform fonts
 - compatibility issues, 56–58
 - OpenType as, 54
 - Unicode and, 55–56
- crotch, of character
 - defined, 302
 - illustrated, 33
 - as ink wells, 36–37, 310
- CRT (cathode-ray tube), 12–14, 302
- CSS (Cascading Style Sheets), 291–293
- curly quotes, 90, 302
- currency symbols
 - aligning in tables, 256–257
 - aligning in text, 192
 - language-specific conventions, 259–260
- cursiva humanistica, 42
- cursive typefaces, 42, 302
- cursor keys, 91

- curved baselines, 177
- customized fonts, 69
- cut-ins, 222–223, 302
- cutline, 229

D

- dagger (†), 193, 233
- dashes
 - center alignment and, 192
 - centered text and, 194–195
 - overview of, 207–208
 - searching for, 59
 - typewriting vs. typesetting, 89–90
- data fork, Macintosh fonts, 53–54
- decimal places, French conventions, 266
- decimal-alignment, 254–255, 302
- decorative initial capitals, 200
- decorative typefaces
 - defined, 302
 - initial capitals and, 213–215
 - overview of, 44
 - readability of, 72
 - using, 79
- dedicated typesetting systems. *See also*
 - typesetting
 - aesthetic rags and, 164
 - assigning typographic attributes with,
 - 94–95
 - baseline shift and, 128–129
 - defined, 302
 - desktop computers altering rules
 - of, 13
 - escapement and, 7
 - extinction of, 94
 - indents as paragraph attributes vs., 180
 - keyboard shortcuts on, 270
 - quadding commands and, 86–87
 - tables, tools for setting, 17
 - vertical space bands and, 128
 - word processing and legacy of, 93–95
 - word processors compared to, 19
 - word spacing and, 84
- default settings
 - automatic leading, 124
 - defined, 303

- default settings (*continued*)
 - text frames and grid alignment, 191
 - tracking values, 174
- default values, H&J program, 156
- degree sign (°), 212, 263
- de-install, digital fonts
 - defined, 302
 - en masse, 308
 - overview of, 98
- deleting style sheets, 279
- denominator glyphs, OpenType, 63
- denominators, in fractions, 204–206
- depth, of paragraph indents, 182–183
- descender line
 - bottom alignment and, 193
 - center alignment along, 192
 - defined, 303
 - expressing point size, 317
 - rectangular wraps and, 188
 - table alignment and, 246
- descenders
 - bottom alignment and, 193
 - defined, 303
 - illustrated, 33
 - and leading in display type, 129
 - old-style numbers and, 201
 - overview of, 36
 - rectangular wraps and, 188
 - screen display and, 288
- desktop computers, 13
- desktop printers, 284–286
- desktop publishing
 - dark side of WYSIWYG, 17–18
 - PostScript model, 13–16
 - revolutionizing typesetting, 13
 - typewriter as first tool for, 7–11
- Details view for Font menu, Windows 7 or later, 66–67
- device independence, 13–15, 303
- dfonts, Macintosh, 53–54, 303
- diagonal fractions, 205, 303
- dialog boxes
 - assigning typographic attributes
 - with, 94
 - style sheets and, 271–272
 - as typesetting interface, 18
- dialogue, punctuation of
 - American English conventions, 262
 - British English conventions, 262
 - French conventions, 264–265
 - German conventions, 267–268
 - Italian conventions, 267
 - Spanish conventions, 267
- dictionary-based hyphenation. *See* hyphenation dictionary
- didot points, 27, 205
- dieresis (¨), 59, 211, 260
- digital fonts
 - bounding boxes and, 299
 - defined, 303
 - de-installing, 302
 - em-based character widths, 25
 - em-based white-space adjustments, 25–26
 - master designs, 38, 315
 - outline technology of, 12–13
 - point size of, 23, 38
- dingbats
 - common pi characters, 44, 209–210
 - defined, 303
 - in OpenType, 198–199
- diphthongs, 201–202, 303
- DirectWrite, 96
- discretionary hyphens
 - aesthetic rags and, 164–165
 - defined, 90, 303
 - hyphenation and, 157–158
 - overview of, 145
 - widows and, 160
- display advertising
 - defined, 304
 - sans serif as standard for, 73
- Display PostScript, 303
- display typefaces
 - asymmetrical leading in, 129
 - bolding for emphasis, 75–76
 - center alignment and, 192
 - condensed faces for, 77
 - decorative faces vs., 79
 - down capitalization style in, 303
 - extended faces for, 43, 77
 - graphic strength of, 44

- headline style for, 310
 - letterspacing in, 153
 - ligatures in, 202–203
 - manual kerning for, 170
 - negative leadings in, 123
 - onscreen legibility of, 289
 - overview of, 44
 - positioning folios and, 226
 - sans serif as standard for, 73
 - sentence style for, 321
 - three-dot ellipsis in, 208
 - tight spacing in, 108–109
 - tightening tracking in, 174
 - up capitalization for, 327
 - using, 78
 - division sign (÷), 212
 - document structures
 - bibliographies, 236–237
 - captions and legends, 229–230
 - chapter headings, 219
 - cut-in subheads, 222–223
 - extracts, 223
 - footnotes and endnotes, 230–233
 - indexes, 233–236
 - navigation tools, 225–229
 - outline formats and tables of contents, 223–225
 - overview of, 217
 - paragraph style sheets and, 281
 - structural elements, overview, 217–219
 - subhead indentation, 222
 - subhead spacing issues, 221–222
 - subheadings, 219–221
 - tables of contents, 225
 - documents. *See* structure, of documents
 - dollar sign (\$), 27, 128, 212, 261–262
 - dotless *i*, 211, 304
 - double acute ("), 210, 211, 260
 - double dagger (‡), 233
 - double guillemets. *See* guillemets (« »)
 - double hyphens, 89, 146
 - double rules, tables, 247
 - double word spaces, ending sentences, 84–85
 - double-byte fonts, 304, 326
 - down capitalization style
 - chapter headings and, 219
 - defined, 304
 - legends and, 229
 - magazine and book titles, 266
 - down style. *See* sentence style (down style)
 - dpi (dots per inch)
 - defined, 304
 - high-resolution output and, 283–284
 - raster image processing and, 14
 - resolution and, 16
 - type onscreen and, 286–287
 - drop caps
 - alignment of, 195, 213
 - difficult characters for, 214
 - overview of, 213–214
 - readability issues, 214–215
 - separating text with, 218
 - dropout, pixel, 16, 304
 - dropped folio, 226, 304
 - dropped initial capital. *See* drop caps
 - duplicate fonts, 101
 - Dutch typefaces, 261, 304
 - dynamic font updating, 99, 304
- ## E
- ear, of character, 33, 305
 - Eastern European languages
 - accented characters, 211
 - Latin characters, 313
 - e-books, tracking for, 175
 - editing programs, font, 69
 - Egyptian typefaces, 73, 305
 - electronic condensing and expanding, of
 - typefaces, 77–78
 - electronic fonts
 - condensing/expanding type and, 77–78
 - fractions in, 90
 - kerning adjustments in, 25
 - overview of, 12–13
 - ellipsis points. *See* points of ellipsis
 - ellipsis, four-dot (...), 209, 267, 318
 - ellipsis, three-dot (...)
 - defined, 318
 - em width in, 24
 - French conventions, 263–264

- ellipsis, three-dot (*continued*)
 - Italian conventions, 267
 - overview of, 208–209
 - Spanish conventions, 266–267
- em
 - character width and, 24–25, 155
 - defined, 24, 305
 - kerning calibrations based on, 167–168, 170
 - letterspacing multiple-word lines and, 154
 - in lowercase text, 73, 132
 - paragraph indents and, 182–183
 - tracking calibrations based on, 158, 174
 - white-space adjustments, 25–26
 - word space and, 26–27
- em dashes
 - in bibliography, 237
 - French conventions, 263
 - German conventions, 268
 - as line-break points, 141
 - set closed up, 213
 - spacing problems of, 207–208
 - Spanish conventions, 267
 - as typographical dash, 89
 - for void or missing entries, 257
- em fractions, 205, 305
- em space
 - defined, 305
 - en space vs., 26
 - letterspacing and forced justification, 154
 - subheads, 221
 - table of contents and, 225
- em square
 - ascenders and descenders and, 36
 - baselines and, 30–31
 - defined, 305
 - type design and, 30
 - typeface width and, 43
 - x-height and, 32
- embedded fonts, 101–102, 290, 307
- emphasis
 - expressing, 75–76
 - typewriting vs. typesetting, 88–89
- en, 205, 305
- en dash
 - defined, 304
 - French punctuation style, 263
 - as line-break points, 141
 - overview of, 207
- en fraction, 198–199, 205, 305
- en space
 - defined, 305
 - as em-based spacing units, 26
 - following bullet with, 210
 - gutters in columns sharing straddle head and, 249
 - letterspacing multiple-word lines, 154
- encoding, font
 - characters outside Unicode standard and, 61–62
 - defined, 305
 - issues, 56–57
 - MacRoman, 57, 315
 - Unicode, 60
 - WIN ANSI, 58, 202, 327
- end marks, 229, 305
- end-line command, 86
- endnotes
 - alignment of, 232
 - defined, 230–231, 306
 - point size and leading, 231–232
 - symbols, 232–233
 - typographic conventions, 230–231
- end-of-line decisions
 - character-by-character calculations, 138–139
 - defined, 305
 - H&J process, 136–138
 - line-at-a-time H&J and, 139
 - line-break points and, 141
 - multiline H&J and, 139–141
- end-paragraph command, 86, 305
- English measurements, 22, 24
- English ordinals, 204–205
- English typefaces. *See* Dutch typefaces
- English typographic conventions
 - abbreviations, 263
 - chapter headings, 219
 - quotations, 262
 - temperatures, 263

entry-a-line index, 235, 306

equals sign (=), 23, 212

escapement

- defined, 306
- monospaced type and, 8
- Monotype machine and, 10
- overview of, 7
- proportional type and, 9

eszett (ß), 268, 306

euro (€), 261

European languages. *See also* by specific languages

- accented character issues, 260
- accented character used by major, 261
- euro (€) sign and, 261

exception dictionary, 146–147, 306

exclamations, Spanish conventions, 267

expanded typefaces. *See* extended typefaces

expert sets

- in Cascading Style Sheets, 292
- defined, 306
- as extended character sets, 197–199
- ligatures in, 203
- in new fonts, 199
- overview of, 61
- style sheets and, 280
- style sheets overrides and, 280

extended character sets, 197–199, 203

extended typefaces

- defined, 43, 306
- legibility and, 110
- synthesized by computer, 77–78
- uses of, 77

extra lead

- asymmetrical leading in display type and, 129
- baseline grids and, 190
- bibliographies and, 236
- calculating, 123–124
- defined, 123, 306
- extracts with, 223
- footnotes and, 231–232
- jump lines and, 228
- legends and captions and, 230
- paragraphs starting with drop caps and, 214

- running indents and, 181–182
- subheads and, 126–127, 221–222
- table of contents and, 225
- tables and, 236
- typefaces and, 131

extracts, as quoted text, 223

F

faces. *See* typefaces

family

- font. *See* font families
- typeface. *See* typeface families

feathering leading, 162, 306

feet, indicating with primes, 90

Fenice typeface, 35

FFIL label, Macintosh fonts, 65–66

54/50, negative leading, 123

figure space

- currency symbols and, 257
- defined, 306
- em basis of, 26–27

file formats

- defined, 306–307
- font compatibility and, 54
- native, 248
- packaging formatted documents, 291

filename extensions, 65–66

fillet, bracketed serifs, 34–35, 307

financial tables

- alignment of currency symbols, 256–257
- centering text between rules, 251–252
- hanging characters, 255–256
- void or missing entries, 257

Finder, Mac OS, 65–66

finials, 198–199, 307

first-line indents

- defined, 180, 307
- footnotes and, 232
- hanging indents as, 184–195
- overview of, 182–183
- rag-left text and, 183
- relative indents and, 321
- sidestepping, 183–184
- standing caps and, 215
- tables and, 246

- fixed measurement, 307. *See also* absolute measurement
- fixed spaces. *See also* em space; en space; thin spaces
 - em-based, 26
 - figure space, 26–27, 257, 306
 - hanging characters in tables and, 256
 - in letterspacing, 154
 - for paragraph indents, avoiding, 183
- fixed-width typefaces, 307. *See also* monospaced type
- fleurons
 - defined, 307
 - in extended character sets, 198–199
 - as pi fonts, 210
- flexing word spaces
 - with H&J program, 142–143
 - specifying in ragged-margins, 147–148
- floating palettes, 272
- flourished characters, 203
- flush space, 153, 307
- folders, font management in, 68–69, 98–99
- folios
 - defined, 307
 - dropped folio, 226, 304
 - jump lines and, 228
 - page grid and, 190
 - positioning, 226–227
 - running heads and, 227
 - table of contents and, 225
- follow-on paragraph styles, 274
- Font Book, Mac OS, 60, 69, 102
- font editors
 - customizing kerning, 172–173
 - defined, 307
 - font use and, 69
 - revealing baselines, 31
- font embedding, 101–102, 290, 307
- font families
 - defined, 307
 - finding small caps with semibold weight in, 200
 - fonts containing width tables for members of its, 51–52
 - installing fonts with complete, 98
 - style menu and, 96–97
 - typeface, 43
- font formats
 - identifying, 64–67
 - Macintosh dfonts, 53–54
 - OpenType fonts, 54
 - overview of, 52
 - PostScript fonts, 52–53
 - TrueType fonts, 53
 - web fonts, 54–55
- font ID, 308
- font ID conflict, 308
- font manager
 - defined, 308
 - Font Book, 60
 - overview of, 68
- font metrics, 30, 52, 308
- font sets. *See* font manager
- font smoothing. *See* anti-aliasing (font smoothing)
- font suitcase, Mac Finder, 66
- fonts
 - bitmapped, 49–50
 - browsing tools, 58–64
 - changing definition of, 10–11
 - contents of, 51
 - copyright issues, 102–103
 - corrupted, 99–100
 - cross-platform, 56–58
 - defined, 307
 - dotless *i* feature, 211
 - duplicate, 101
 - editor. *See* font editors
 - electronic, 12–13
 - embedded, 101–102
 - fractions in, 204
 - kerning information for, 172–173
 - Macintosh, 53–54
 - management of, 68–69, 98–101
 - missing, 97–101
 - multiple master, 39
 - nonalphabetic (pi), 44
 - OpenType, 54
 - outline, 50
 - photographic, 12

- PostScript. *See* PostScript font
- screen display and, 96
- three-dot ellipsis in all, 208
- TrueType. *See* TrueType font
- type design, 30–32
- typefaces vs., 29–30
- Unicode and, 55–56
- web, 54–55
- wysiwyg and, 95–96
- Fonts folder
 - Macintosh, 68, 100
 - Windows, 66–68, 99, 102
- fonts, Macintosh
 - cross-platform encoding and, 56–57
 - dfonts, 53–54
 - finding characters, 59–60, 211
 - identifying, 65–66
 - ligatures and, 202
 - management of, 68–69
 - screen display and, 96
 - Unicode and, 60
- fonts, Windows OS
 - accessing quotation marks in, 90
 - Character Map, 58–59, 211
 - encoding issues, 56–57
 - font management, 98–101
 - Fonts folder in Windows
 - through XP, 102
 - identifying font formats, 66–67
 - screen display, 96
 - screen rendering when fonts are
 - missing, 97–99
 - storage of, 68
 - viewing data for OpenType, 65
 - wysiwyg and, 95–96
- footers, 226, 308
- footnotes
 - alignment of, 232
 - defined, 230–231
 - hanging characters and, 193, 255–256
 - jump lines in, 228
 - low resolutions and, 285
 - point size and leading for, 231–232
 - superior numerals in, 204
 - symbols, 232–233
 - in tables, 255–256
 - top-aligning numbers in, 192
 - typographic conventions for, 230–231
- forced justification, 153–154, 181, 308
- foreign languages. *See* language issues
- format converters, 247
- formats, font
 - identifying, 64–65
 - identifying formats of Windows fonts,
 - 66–67
 - identifying Macintosh fonts, 65–66
 - Macintosh dfonts, 53–54
 - OpenType, 54
 - overview of, 52–55
 - PostScript, 52–53
 - TrueType, 53
 - using embedded fonts, 101–102
 - web, 54–55
- four-dot ellipsis (...), 208–209
- Fournier typeface, 46
- fraction bar (/)
 - compared to virgule, 206
 - defined, 308
 - in em fraction, 205
 - for horizontal fraction, 309
 - as kerning character, 168, 313
 - typewriting vs. typesetting, 91
 - in Windows, 91
- fractions
 - as alternate characters, 199
 - baseline shifts and, 129
 - building by hand, 206
 - as closed up, 206–207
 - denominators in, 204
 - diagonal, 205, 303
 - en, 198–199, 305
 - extended character sets with,
 - 198–199
 - forms of, 206–207
 - hanging characters and, 255–256
 - horizontal, 205
 - numerators in, 192, 204
 - overview of, 205
 - searching for, 59
 - solidus, 205
 - in tables, 255–256
 - typewriter vs. typographic, 90–91

Fraktur typeface

- confusing name of, 47
- defined, 299
- overview of, 91
- readability of, 72

frame-at-time vertical justification, 163

frames, text

- alignment and, 125, 190–192
- defined, 308
- drawing and specifying width of, 118
- leading in, 125–126
- object style sheets and, 275
- in spreadsheet-style tables, 243
- vertical justification and, 163

French typographic conventions

- accents, 265
- capitalization, 265–266
- hyphenation, 260
- numeric expressions, 266
- overview of, 261–266
- punctuation spacing, 265
- punctuation style, 263–264
- quotation style, 264–265

Friz Quadrata typeface, 24

front ends, 19, 308

Frutiger typeface, 40, 133

full stops. *See* periods (.)

Futura typeface

- as geometric sans serif, 40, 307
- naming issues, 47
- as sans serif face, 32
- variations in weight, 41
- weights of, 41
- widths of word spaces and, 27, 133

G

Galliard typeface (ITC), 32, 36, 74

Garaldes typefaces, 45, 308

Garamond typeface

- Adobe Garamond, 61, 74, 97, 133, 232
- character width in, 132
- condensed versions of, 77
- as early italic form, 42
- expert font set, 61
- footnote point size in, 232

in historical classifications, 45–46

ITC Garamond, 41, 77

Monotype Garamond, 132

naming, 47

screen display of, 97

Stempel Garamond, 42, 45, 73

weights of, 41

x-height and, 133

Garamond, Claude, 45

GDI (Graphical Device Interface), 96, 308

generic formats, data for tables, 247

geometric sans serif, 40, 308, 314

Georgia typeface (Microsoft), 287–288

German typographic conventions, 267–268

Get Info command, 65

Gill Sans typeface (Monotype), 32, 42

glyph palettes, defined, 56

glyphs

accessing hard-to-find characters, 210

automatic fractions and, 63

defined, 309

extended character sets of, 197

fonts and, 58, 60–61

stylistic sets of, 64

Unicode and, 56

gothic type, 47, 72, 299, 309

Goudy Old Style typeface, 36, 74, 175

Graphical Device Interface (GDI), 96, 308

graphical user interfaces (GUIs), 94–95

graphics

aligning drop caps and, 195

bitmaps vs. vector-based, 14

high resolution for, 284

measuring in picas, 23

missing fonts and, 100

narrow-measure problems and, 112

running indents and, 181

table design and, 241

text wraps and, 186–187

vertical alignment of, 191

grave (`) accent, 59, 211, 260, 265

grayscale, 286, 289, 309

greater than or equal to sign (\geq), 212greater than sign ($>$), 212

GREG (global/regular expression/printing)

styles, 275

grid fitting, 15–16, 309

grids

- page and baseline, 190
- spreadsheet-style tables and, 242–245
- text frames and alignment of, 125, 190–191

grotesque sans serif typefaces, 73, 309

guillemets (« »)

- defined, 309
- French quotation style, 264–265
- German quotation style, 267
- Italian quotation style, 267
- Spanish quotation style, 266

GUIs (graphical user interfaces), 94–95

Gutenberg, Johannes, 4, 6

gutters

- around wraps, 187–189
- between columns, 130
- defined, 309
- grid-defined, 190
- vertical, 188

gutters, in tables

- balancing with column widths and, 248–249
- defining column structures, 242
- separating columns with, 240
- spreadsheet-style tables and, 243–244
- tools for setting, 248

H

H&J. *See* hyphenation and justification (H&J)

haček (ˇ), 211, 260

hairline, 34–35

hairline serifs, 34–35, 309

hairline, of character

- defined, 309
- illustrated, 33
- in modern faces, 46
- resolution and, 284
- in reverse type, 80
- rule, 322
- sans serif for color and, 79
- unbracketed serifs and, 34

handset metal type

- bounding boxes and spaces based on, 5
- digital type vs., 5
- fonts for, 10
- Gutenberg's system of movable type, 4
- point size and, 23, 38

hang line, 190–191, 309

hanging characters

- alignment and, 193–194
- defined, 310
- in numeric tables, 255–256

hanging folios, 226

hanging indents

- bibliographies and, 236
- bullets and, 210
- defined, 180, 310
- footnotes and, 232
- indent-on-point character creating, 184–185
- overview of, 184

hanging numerals. *See* old-style numerals

hanging punctuation, 193, 292, 310

hard hyphens

- in compound modifiers, 207
- controlling hyphenation, 144
- defined, 145, 310
- discretionary hyphens vs., 145
- double-hyphenation with, 146
- headings and, 219
- typewriting vs. typesetting, 90

hard return, 310

hard-ended lines

- aesthetic rags and, 165
- centered text and, 195
- defined, 310
- letter spaces and, 153
- running indents and, 181
- setting index with, 234

head rule, 247, 310

heading row, tables, 240

headings

- alignment for ragged margins, 194
- bold type for, 76
- capitalization of, 219
- centered text and, 194
- chapter, 219

- headings (*continued*)
 - document structure and, 217–218
 - grid structure and, 190
 - style sheets and, 274, 281
 - visual alignment and, 113
- headings, of tables
 - alignment, 252–254
 - balancing column widths and gutters, 248–249
 - centering with vertical rules, 247
 - column width and, 248
 - heading row, 240
 - leading for runovers in, 249
 - multiple-line, 200
 - overview of, 239–241
 - rules, 247
 - small caps for, 200
 - straddle heads, 240, 245–246
- headline style, 219, 303, 310, 327
- Helvetica typeface (Linotype)
 - bold command in, 97
 - as monospaced type, 8
 - oblique italic of, 42
 - range of text weights in, 41
 - as sans serif font, 40, 72
- hexadecimal numbers, 55–56, 310
- high-bit ASCII, 310
- high-resolution output, 283–284
- hints
 - defined, 309
 - fonts and, 16
 - low resolutions and, 286
 - screen display and, 287–288
 - TrueType and, 53
 - web fonts and, 54–55
- historical designations, small caps for, 200
- historical period, classifying typefaces
 - by, 45–47
- horizontal alignment, 245
- horizontal fractions, 310
- horizontal rules, tables
 - centering text, 251–252
 - leading and, 250–251
 - overview of, 247
- HTML (HyperText Markup Language)
 - css enhancing, 291–293
 - hyphen use in, 90
 - typography and, 291
- humanist sans serif faces, 40, 310
- HyperText Markup Language. *See* HTML (HyperText Markup Language)
- hyphenation
 - adding words to dictionary, 146–147
 - adjusting badly spaced lines, 157
 - avoiding in titles and headings, 219
 - choosing means of, 144–145
 - controlling, overview, 143–144
 - defined, 311
 - definition of, 135
 - French punctuation style, 264
 - language issues, 258
 - line-break points and, 141
 - ranked hyphenation, 320
 - turning off for indexes, 233
 - types of, 145
 - typewriting vs. typesetting, 89–90
- hyphenation and justification (H&J)
 - algorithmic hyphenation, 137, 144–145, 291
 - character width and, 154–155
 - character-by-character calculations, 138–139
 - controlling hyphenation, 143–147
 - creating aesthetic rags, 164–165
 - css with, 292
 - defined, 135–136, 311
 - end-of-line decisions, 136–138
 - how it works, 136–138
 - hyphenation zones and, 144
 - justified margins and, 148–152
 - letter spaces and, 142–143
 - letter-space ranges and, 152–154
 - letterspacing and forced justification, 153–154
 - line-at-a-time calculation, 139
 - line-break points, 141
 - measure and, 147
 - overview of, 135
 - range of lines and, 139–141
 - testing values, 156
 - word spaces and, 142–143
 - word-space ranges and, 147–148

wrapped text and, 185–186

hyphenation and justification (H&J),
 composition problems
 loose lines/tight lines, 156–158
 paragraph color, 158–159
 rivers, 163–164
 vertical justification, 161–163
 widows and orphans, 159–161

hyphenation dictionary
 adding words to, 146–147
 adjusting badly spaced lines with, 157
 algorithmic hyphenation and, 144–145
 kinds of hyphens, 145
 language issues, 260
 ligatures and, 203
 ranked hyphenation in, 320

hyphenation zones, 144, 311

hyphens. *See also* discretionary hyphens;
 hard hyphens
 center alignment issues, 192
 in French first names, 264
 overview of, 207
 titling characters in large display
 sizes, 64
 types of, 145, 207
 typesetting vs. typewriting, 89–90
 uses of, 207

hypho, 311

I

IBM Selectric-type typewriters, 87

identifiers, table structure, 239

illuminated initial capitals, 213

imagesetters
 defined, 311
 high resolutions and, 284
 laser printers as, 13
 measuring resolution in dpi, 304
 PostScript interpreters and, 52
 raster image processing and, 14

imaging
 PostScript fonts, 15–16
 with raster image processor, 14

import filters, tables, 247–248

importing style sheets, 275–276, 281

inches, indicating with primes, 90

Incised 901 typeface, Bitstream, 97

indent on point
 defined, 311
 hanging indents and, 184
 outlines and, 224
 overview of, 180

indentation
 alignment in tables, 245
 defined, 179, 311
 of dropped folios, 226
 in extracts, 223
 first-line, 182–184
 hanging, 184–185
 in indexes, 234–236
 kinds of, 179–180
 of lines ending with punctuation
 characters, 193
 of outline form, 224
 overview of, 179
 as paragraph attributes, 180
 running, 181–182
 in skews and wraps, 185–189
 in tab entries, 246–247
 typewriter vs. typographic, 91

indentation command, 183

indented indexes, 235

independent text units
 bibliographies, 236–237
 captions and legends, 229–230
 defined, 229
 footnotes and endnotes, 230–233
 indexes, 233–236

indexes
 bold page numbers in, 76
 indentation styles, 234–235
 leading in, 130
 omitting running heads in, 227
 overview of, 233
 page-break issues in, 235–236
 typefaces and point sizes for, 234

inferior numerals, in fractions, 198–199

inferiors
 defined, 311
 em fractions built from, 205
 low resolutions and, 285

inferiors (*continued*)

- overview of, 204–205
- sizing when building fractions by hand, 206

initial capitals. *See also* capitalization

- author's name in bibliographies, 236
- drop caps, 213–215
- French punctuation, 264
- overview of, 213
- small caps for, 200
- standing caps, 215
- swash characters as, 203

ink spread, in reversed types, 80–81

ink wells (ink traps), 36–37

inkjet printers

- angled type and, 286
- output resolution and type quality, 17
- raster image processing and, 14

installing fonts, 311

instructions. *See* hints

International Typeface Corporation.

- See* rtc (International Typeface Corporation) typefaces

interrogatives, Spanish conventions, 267

irregular shapes, wrapping, 189

Italian Old Style typeface, Monotype, 45

Italian typographic conventions, 267

italics

- in bibliographies, 236
- centered text and, 194
- defined, 312
- development of, 42
- in indexes, 234–235
- jump lines, 228
- kerning roman characters and, 171
- low resolutions and, 285
- missing fonts and, 98–99
- obliques vs., 42–43
- readability of, 72
- reversed type and, 80
- run-in subheads and, 221
- setting, 96–97
- swash characters as, 203
- switching to roman with style sheet, 280–281
- in typewriters, 89

rtc (International Typeface Corporation)

typefaces

- Avant Garde Gothic, 32, 47, 308
- Bauhaus, 40
- Bookman, 41, 42, 132, 298
- Clearface, 78–79
- defined, 312
- Fenice, 35
- Friz Quadrata, 24
- Galliard, 32, 36, 74
- Garamond, 24, 41, 77
- New Baskerville, 36
- Novarese, 42
- Zapf Dingbats, 44, 198–199, 209–210

J

jaggies, defined, 312

Janson typeface, 32

Japanese language, 53

Japanese yen sign (¥), 261

joining em rule, 207–208, 237, 312

journals

- bibliography entries for names, 236–237
- chapter headings and, 219
- point size in, 122
- running heads and, 227
- transitional typefaces and, 46
- wider text faces for, 74

jump lines, 228, 312

jump page, 228, 312

justification. *See also* hyphenation and

- justification (H&J); justified margins
- defined, 10, 135–136, 312
- forced, 153–154, 181, 308
- vertical, 126, 161–163, 193, 218
- word spaces and, 27

justification zones, 153, 312

justified margins

- in Cascading Style Sheets, 292–293
- end-of-line decisions and, 137–138
- hanging punctuation and, 193, 310
- in indexes, 233
- in tables, 246
- word-space ranges and, 148–152
- world wide web and, 290

K

keeps, orphans and, 161

kern, defined, 312

kerning

 accented characters, 211

 algorithmic, 172, 297, 317

 applying, 168–169

 automatic, 132, 173, 200, 298

 building accented characters, 211

 on curved baselines, 177

 custom kerning tables, 172–173

 decorative faces lacking, 79

 defined, 5, 313

 expressing in em units, 25

 fractions, 206–207

 H&J and, 138

 high-resolution output and, 284

 italic to roman transitions, 171–172

 manual, 170–171

 numerals, 173

 in practice, 168–169

 samples of, 26

 screen display and, 287

 small caps, 200

 standing caps, 215

 swash characters, 203

 tracking vs., 167–168

kerning characters

 defined, 313

 fraction bars as, 168, 206

 illustrated, 5

 swash characters as, 203

kerning pair metrics (KPM), 26

kerning pairs

 customizing kerning tables, 172–173

 defined, 168, 313

 large cap-small cap, 200

 list of typical, 169

 manual kerning and, 170

kerning tables, 26–27, 51, 168–170,

 172–173, 312

kern-table editor, QuarkXPress, 172

keyboard layout, Macintosh, 60

keyboard shortcuts

 for manual kerning, 170

 for paragraph styles, 273

 for style sheets, 272

Keyboard Viewer, Macintosh, 59–60, 211

keywords, indexes, 234, 235

Kingsley ATF, 298

knockouts, 80, 313

Koreans, movable type and, 4

L

Language & Text pane, Mac OS, 60

language issues

 accessing accented characters, 211

 British vs. American English, 260–261

 character sets, 257–258

 currency symbols, 259–260

 French, 261–266

 German, 267–268

 hyphenation and, 258

 Italian, 267

 Spanish, 266–267

 time expressions, 258–259

laser printers

 angled type and, 286

 desktop publishing and, 13

 font hinting and, 286

 output resolution and type quality,

 16–17

 raster image processing and, 14

Latin characters

 character sets, 57, 259–260

 defined, 313

 language issues. *See* language issues

 nonalphabetic fonts in, 44

 Non-Latin typefaces, 197

 seriffed forms predominating in, 40

 strokes defining shapes of, 33

 width of, 8

Latin typefaces, 197, 259, 313

layout. *See* page layout programs

leaders, 225, 257, 313

leading

 ascenders and descenders and, 36

 asymmetrical in display type, 129

 automatic, 124–125

 baseline shift and, 128–129

leading (*continued*)

- baseline grids and, 190
 - for bibliographies, 236
 - bottom alignment and, 193
 - for captions and legends, 230–231
 - changing as type size changes, 126–127
 - defined, 313
 - for extracts (quoted text), 223
 - for footnotes and endnotes, 231–232
 - historical derivation of term, 4
 - jump lines and, 228
 - line spaces vs. space bands and, 127–128
 - long lines and tight, 111
 - measuring from baseline to baseline, 31
 - measuring in points, 23
 - multicolumn applications, 130
 - negative leading, 123, 316
 - non-text applications, 130
 - overview of, 122–124
 - rectangular wraps and, 187–188
 - style sheets and, 272
 - subheads and, 221–222
 - in table of contents, 225
 - in tables, 239–240, 245, 248–252
 - tall ascenders and, 36
 - text frames and, 125–126
 - tight leading, 110–111, 121, 231
 - typefaces and, 133
 - vertical justification and, 161–163
 - x-height and, 132–133
- left indents, 181
- legends. *See also* captions
- captions vs., 229
 - defined, 313
 - typographic conventions, 229–230
- legibility
- character width and, 34
 - defined, 105–106, 313
 - display typefaces and, 78
 - of footnotes and endnotes, 231–232
 - screen display and, 287–289
 - seriffed typefaces and, 34
 - tight spacing and, 106, 108, 148–152
 - type size and, 37
 - x-height and, 132
- less than or equal to sign (\leq), 212

less than sign ($<$), 212

letter pairs. *See* kerning pairs

letter spaces

- controlling, 142–143
- flexing character widths and, 154–155
- H&J and, 136–138
- letterspacing and forced justification, 153–154
- loose or tight lines and, 156–158
- ragged-margin text and, 147
- screen display and, 287
- specifying ranges, 148–153
- unbalanced, 110

letterforms

- ascenders and descenders and, 36
 - calligraphic origins of, 32–33
 - in contemporary printing, 41
 - flexing character widths, 155–156
 - ink wells and, 36
 - legibility and, 106
 - monospaced type and, 8
 - obliques, 42–43
 - reversed type and, 81
 - roman and italic, 42
 - seriffed and sans serif, 40
 - typeface width variations, 43
- letterpress printing, 10–11, 314
- letterspacing
- defined, 153, 314
 - forced justification and, 153
 - tricks and problems, 154

Library folders, Macintosh os, 68, 100

license agreements, fonts, 102–103

Life typeface (Simoncini), 133

ligatures

- alternate, 63
- automatic substitution, 202–203
- defined, 201, 314
- diphthongs as, 202
- in display type, 203
- in expert sets, 61, 198–199
- German conventions for, 268
- most common, 202

light, typeface weight, 40–41, 132

line breaks

- defined, 314

- ellipsis points and, 208–209
 - first-line indents and, 184
 - H&J and, 140–141
 - hard-ending, 306
- line caster, defined, 314
- line endings, carriage returns and, 85–86
- line feed, defined, 86, 314
- line length. *See* measure
- line printer, 87
- line spacing. *See also* leading; spacing issues
 - defined, 314
 - running heads and, 227
 - separating text with, 218
 - unbalanced, 109–110
- line-at-a-time H&J, 139
- line-break points, 141
 - Cascading Style Sheets and, 293
 - overview of, 141
 - using ragged right margins in indexes, 234–235
- linecasting machine, 10
- line-ending commands
 - defined, 314
 - hard return as, 310
 - indents as paragraph attributes and, 180
 - overview of, 85–86
 - running indents and, 181
- lining numerals or figures
 - centering text between rules, 251–252
 - in chapter headings, 219
 - defined, 9, 314
 - numbers in text, 201
 - solidus fraction and, 204
 - in typeface, 173
- link, of character, 33, 314
- links
 - hyphens and en dashes signifying, 207
 - from style sheet to text, 272
- Linotype fonts, 10–11
- lists
 - bulleted. *See* bullets (•)
 - leading in, 130
- logotypes, 198–199, 201–202, 314
- loop, of character, 33, 314
- loose spacing
 - H&J and, 156–158
 - ligatures and, 202–203
 - overly, 109
 - reversed type and, 129
 - sans serif and, 108
 - type color and, 106–107
- low resolution
 - adjusting type for, 284–286
 - loosening tracking for, 175–176
- lowercase
 - accented characters in European languages, 261
 - in Cascading Style Sheets, 292
 - center alignment and, 192
 - centering text between rules and, 252
 - defined, 314
 - English ordinals in, 204–205
 - in extended character sets, 198–199
 - as gauge for typeface width, 132
 - kerning letter pairs, 168–169
 - outline form and, 224
 - small cap size vs., 199–200
 - superior characters in, 204
 - swash characters, as finials, 203
 - text on curved baselines in, 177
- lowercase figures, 9, 201. *See also* old-style numerals
- LWEN label, Macintosh, 65–66

M

- Macintosh OS X
 - finding characters, 59–60
 - font embedding and, 102
 - font management, 98–101
 - fonts. *See* fonts, Macintosh
 - missing fonts and, 97–99
 - pioneering WYSIWYG, 95–96
 - Unicode and, 55, 57, 90
 - viewing OpenType fonts, 65
- MacRoman encoding
 - accented characters, 211
 - accessing hard-to-find characters, 210
 - borrowed characters and, 57
 - defined, 57, 315
 - dotless i, 211
 - ordinals, 204

- macron (¯), 211, 260
- magazines
 - bibliography entries for, 236–237
 - display type in, 78
 - end marks and, 229
 - French capitalization and, 266
 - initial capitals and, 213
 - jump page and, 228
 - metric measurements for, 24
 - multiline H&J and, 140–141
 - overly loose spacing in, 109
 - page setup and, 118
 - paragraph color and, 158
 - point size and, 122
 - running heads and, 227
 - serif roman types for, 72
 - standard text size for, 122
 - subheads and, 218
 - symbolic jump lines and, 228
 - text faces for, 44
 - transitional typefaces and, 46
- main references, index, 234
- majuscules, 6. *See also* uppercase
- manual kerning
 - adjusting numeral 1, 173
 - aligning oversized characters, 195
 - of curved baselines, 177
 - defined, 315
 - of italic-roman characters, 171
 - overview of, 170
 - of standing initial caps, 215
- Manutius, Aldus, 42
- margins
 - Cascading Style Sheets and, 292
 - centered text, 164, 194–195, 252–254
 - indentation and. *See* indentation
 - justified. *See* justified margins
 - measuring in picas, 23
 - in multicolumn settings, 130
 - ragged. *See* ragged margins
 - ragged right. *See* ragged right margins
 - skewed, 185–186
 - of table columns, 241
- marks of omission. *See* points of ellipsis
- master character designs
 - defined, 315
 - photographic fonts and, 12
 - type sizes and, 38–39
- mathematical formulas, 129, 204
- matrix, Monotype fonts, 10–11, 315
- Matt Antique typeface, 47
- m-dash. *See* em dashes
- mean line
 - aligning rounded characters to, 37
 - ascenders and descenders and, 36
 - defined, 315
 - measuring from, 32
- measure
 - alignments with ragged margins
 - and, 194
 - in Cascading Style Sheets, 292
 - character width and, 132
 - defined, 84, 315
 - H&J and, 147
 - leading and. *See* leading
 - line length or, 117–121
 - point size and, 122
 - sans serif typefaces and, 133
 - seriffed typefaces and, 131–132
 - typewriting vs. typesetting and, 83–84
- measurement units, typographic
 - absolute, 21–24
 - agates, 27
 - didot point, 27
 - relative, 24–27
- mechanical alignment, defined, 315
- metal type, 4–6, 11
- metric measurements
 - font, 30, 52, 308
 - point conversion to, 23
 - typographic, 24
- Microsoft
 - development of OpenType font, 54
 - development of TrueType font, 53
 - screen display typefaces, 287
 - Wingdings and Webdings, 210
- military time, 260
- miniscules, 6. *See also* lowercase
- minus sign (−), 210, 212
- minutes, indicating with primes, 90, 319
- missing entries, in tables, 257

missing fonts, 100–101

modern typefaces

- hairline serifs, 34–35
- overview of, 46–47
- reading material and, 72

monitors. *See* screen display

monoline, 34–35, 315

monospaced type

- applications of, 8–9
- defined, 315
- as fixed-width typeface, 307
- page sizes and line lengths, 83–84
- replacing with proportional type, 9

Monotype

- Arial Unicode MS, 197
- Bembo, 74
- Centaur, 32, 78
- character set, 51
- character widths and, 9–10, 24–25
- fonts in, 10–11
- Garamond, 132
- Gill Sans, 32, 42
- Goudy Old Style, 36
- Italian Old Style, 45
- Janson, 32
- machines, 6, 9
- overview of, 9
- popular text faces, 74
- Sorts, 44, 209
- Times New Roman. *See* Times New Roman typeface (Monotype)

months, French capitalization of, 265

multiline H&J, 139–141, 145

multiline stub-tab entries, 246

Multiple Master font format, 39, 315

multiplication sign (×), 210, 212

N

N, 26, 214

n/a or N.A., 257

name ambiguities, typeface, 47

narrow typefaces. *See* condensed typefaces

narrow-measure page layout, 111–112

native file formats, 247–248

navigation tools

- end marks, 229
- jump lines, 228
- overview of, 225
- page numbers or folios, 225–226
- running heads, 227

n-dash. *See* en dash

negative indentation, 184

negative leading, 123, 316

negative values, kerning, 168

nested styles, 274, 316

New Baskerville typeface, *ITC*, 36, 74

New Century Schoolbook typeface, 30

newsletters, H&J and, 140

newspapers

- cut-in subheads in, 222–223
- display type in, 78
- headings, avoiding hyphenation, 219
- initial capitals in, 213
- jump lines in, 228
- multiline H&J and, 140–141
- narrow-measure problems, 111–112
- rivers in, 163–164
- setting gutters in, 130–131
- subheads in, 218
- typefaces for, 72, 130

nibbed pens, 32–33, 324

no-break text, 141, 316

nonalphabetic fonts, 44

nonbreaking hyphens

- defined, 316
- double-hyphenation with, 146
- line-break points and, 141
- using, 145

nonbreaking word space

- British style of setting temperatures, 263
- defined, 316
- French numeric expressions, 266
- French punctuation spacing, 265
- line-break points and, 141
- Spanish typographic conventions, 266

nonhyphenation zones, 144

Non-Latin typefaces, character sets, 197

non-numeric reference marks, 233

nonprinting blocks, Gutenberg, 4

normal style, 276

- normal word spaces
 - defined, 316
 - French punctuation style, 265
 - in H&J, 142
 - leading for non-text settings and, 130
 - leading for reversed type and, 129
 - points of ellipsis and, 208–209
 - Spanish conventions, 266
- “no-style” stylesheets, 276, 278–279
- not equal to sign (\neq), 212
- nouns, German capitalization of, 267
- Novarese typeface, *ITC*, 42
- number or pound sign ($\#$), 212
- numbering system, fonts
 - encoding issues, 56–57
 - PostScript vs. TrueType, 53
 - Unicode standard, 55–56
- numbers, page. *See* folios
- numerals
 - aligning currency symbols, 257
 - aligning footnotes, 232
 - en dashes for ranges of, 207
 - fractions. *See* fractions
 - French typographic conventions, 266
 - Kerning, 173
 - lining figures. *See* lining numerals or figures
 - old-style. *See* old-style numerals
 - ordinal. *See* ordinals
 - in outline forms, 224
 - roman, 321
 - subscripts. *See* subscripts
 - superior and inferior, 204
 - superscripts. *See* superscripts
 - in typeface as lining figures, 9
- numerators, in fractions
 - OpenType automatic layout for, 63
 - overview of, 204–206
 - top alignment of, 192
- numeric reference marks, 233
- numeric tables
 - alignment in, 254–257
 - centering text between rules in, 251–252
 - currency symbols in, 256–257
 - hanging characters in, 255–256
 - nut fraction, 205, 305
 - nut fractions. *See also* horizontal fractions
- O**
 - O*, as drop cap, 214
 - object style sheets, 275
 - oblique typefaces, 42–43, 45, 316
 - o'clock, time conventions, 261
 - offset lithography
 - benefits of, 11
 - defined, 316
 - photographic fonts and, 12
 - type design and, 36
 - offset printing, 16–17, 316
 - ogonek accent, 211, 260
 - old-style numerals
 - defined, 316
 - in expert sets, 61, 198–199
 - Kerning, 173
 - OpenType layouts, 63
 - overview of, 201
 - proportional versions of, 319
 - old-style typefaces, 45, 219
 - omissions, points of ellipsis for, 208–209
 - 1 point of lead, setting type on, 123
 - one-off indents, for wraps, 186
 - onscreen display. *See* screen display
 - onscreen rulers, currency symbols, 257
 - OpenType font
 - .otf extension, 65
 - alignment and, 192–193
 - alternate fonts, 61–62
 - blocking, 102
 - characters in, 51
 - cross-platform compatibility and, 56–58
 - currency symbols, 260–261
 - defined, 316
 - em-based, 25
 - extended character sets of, 197–199
 - font format, 54, 64–67
 - fraction-building feature, 204–206
 - hyphens and dashes, 89
 - Kerning numerals, 173
 - layout features, 62–64

- ligatures, 202–203
- multiple master fonts of, 39
- old-style numerals, 201
- Unicode numbers and, 55–56
- operating systems
 - defined, 316
 - font storage locations, 98–101
 - graphical user interfaces and, 94–95
 - Macintosh. *See* Macintosh OS X
 - support for PostScript, 52–53
 - Windows. *See* Windows OS
- optical (algorithmic) kerning, 172, 297, 317
- optical alignment
 - centered text, 194–195
 - correction for, 112–113
 - defined, 317
 - heads and tab entries, 252–254
 - leading, 125–126
 - oversized characters, 195
 - overview of, 193
 - ragged margins, 194
 - in typeface design, 37
- optical kerning, 317. *See also* algorithmic (optical) kerning
- Optima typeface (Linotype), 40, 227
- Option Key, Macintosh, 59
- Option-Shift Key, Macintosh, 59
- ordinals
 - defined, 317
 - OpenType layout features, 64
 - setting, 204–205
- ornament characters, 198–199, 210
- orphans
 - H&J and, 159–161
 - in indexes, 236
 - running indents and, 181–182
- os. *See* operating systems
- .otf filename extension (OpenType), 65
- out of sorts, 6
- outdents. *See* hanging indents
- outline fonts
 - defined, 50, 317
 - PostScript and, 52
 - printing problems and, 98
 - TrueType and, 53
- outlines, formats of, 223–225

- output resolution
 - adding hints for, 16
 - advantages of high, 283–286
 - anti-aliasing improving, 18–19
 - compensating for low, 175–176, 284–286
 - dark side of WYSIWYG, 17–18
 - typeset quality and, 16–17
 - word processors and, 18–19
- overprint, 313, 317
- overrides, 279–280, 317
- overshoot, 37
- oversized characters
 - aligning, 195
 - initial caps, 213–215
- overstrike type, 89, 317

P

- page break controls, 293
- page description language (PDL), 13, 317
- page grids
 - defined, 317
 - overview of, 190
 - text frames and, 125, 190–191
- page layout programs. *See also* composition problems
 - alignment, 192–195
 - automatic leading, 124–125
 - baseline shift, 128–129
 - footnotes and endnotes, 230
 - forced justification, 153–154
 - grid options, 118
 - H&J, default specifications, 156
 - highlighting lines violating spacing, 152
 - hyphenation zones, 144–145
 - kerning, 168
 - leading of rules, 250
 - legacy of word processors, 19
 - letterspacing, 153–154
 - ligatures, 203
 - line spaces, 128
 - manual kerning, 170
 - narrow measure problems in, 112
 - optical effects and alignment, 112–113
 - ragged-margin text, 148

- page layout programs (*continued*)
 - running indents, 181
 - style sheets and, 272–273, 275, 279
 - tables, building, 247–249
 - text frames, 125, 190–191
 - tracking, 175
 - wraps, 186–187
- page numbers. *See* folios
- Page Setup dialog box, 94
- page-breaks, 235–236, 293
- pages
 - folio placement, 190
 - measuring dimensions, 22–24
 - size, 83–84
 - trim size of, 24, 118, 326
- Palatino font, 101
- Palatino typeface (Linotype), 42, 73–75, 232
- Palo Alto Research Center (PARC), 13
- paper
 - narrow typefaces economizing on, 74
 - print-type clarity and, 284
 - wove paper, 41
- paragraph attributes
 - assigning in dialog boxes, 94
 - baseline shifts and, 128–129
 - defined, 317
 - end-paragraph command as, 86
 - H&J and, 156
 - indents as, 180, 183
 - leading as, 126–127
 - style sheets controlling, 272
- paragraph indents. *See also* indentation
 - defined, 180, 317
 - measuring in points, 23
 - rag-left text and, 183
 - setting skews and depth of, 186
 - sidestepping, 183–184
- paragraph mark (¶), 212, 233
- paragraph styles, 273–274, 277–278, 281
- paragraphs
 - aesthetic rags, 164–165
 - color problems, 158–159
 - first-line indents, 182–184
 - H&J and, 139–141
 - hyphenation for, 145
 - initial capitals starting, 213–215
 - run-in subheads and, 221
 - running indents in middle of, 181
 - style sheets for single, 278
 - tracking adjustments for, 158
- PARC (Palo Alto Research Center), 13
- parent-child style sheets, 275–277, 278, 281
- parentheses ()
 - alignment of, 192, 246
 - as hanging characters, 255
 - Kerning with italic characters, 171
- paths. *See also* rules
 - curved (vectors), 13–14
 - defined, 318
 - stroked, 244
- patterned backgrounds, 175
- PC typesetting. *See* computer typesetting systems
- PDF (Portable Document Format), 291
- PDL (page description language), 13, 317
- pens, nibbed, 32–33, 324
- percent sign (%), 212
- periodicals. *See* magazines
- periods (.)
 - after italics, 76
 - American English conventions, 262–264
 - currency symbols in numeric tables, 257
 - with ellipsis points, 208–209, 318
 - ending “See also” with, 234
 - French conventions, 263–264, 266
 - hanging punctuation and, 193, 310
 - Kerning numerals, 173
 - in outlines, 224
 - Spanish conventions, 266
 - in tables of contents, 225
- personal computer. *See* computer typesetting systems
- per-thousand sign (‰), 24
- .pfb filename extension, PostScript Type 1, 67
- photocomposition, 14
- photographic film, 16–17, 284
- photographic fonts, 11–12, 318
- photographic masters, 284–285
- photographic plates, offset lithography, 11

- phototypesetting, 11, 318
- pi fonts
 - common, 209–210
 - defined, 318
 - end marks, 229
 - hard-to-find, 210
 - minus signs, 89
 - primes, 90
 - style sheet overrides and, 280
 - typesetting, 44
- picas
 - defined, 318
 - leading and, 123–124
 - for lowercase text, 132
 - measuring type in, 21–22
 - notation conventions, 23
 - point size and, 122
 - uses for, 22–23
- pixels
 - adding hints to, 16
 - anti-aliasing for legibility, 18–19
 - defined, 318
 - imaging PostScript fonts, 15–16
- placeholders, 26–27
- plain text, 318
- platforms, 318. *See also* operating systems
- plus sign (+), 212, 280
- point size
 - adjusting for character width, 132
 - automatic leading and, 124–125, 298
 - baseline shifts vulnerable to, 129
 - of bibliographies, 236
 - bottom alignment and, 193
 - calculating, 123–124
 - for captions and legends, 229
 - defined, 318
 - for extracts, 223
 - for folios, 226
 - for footnotes and endnotes, 231–232
 - for indexes, 234
 - jump lines and, 228
 - leading, and change in, 126–127
 - leading, calculating, 123–124
 - leading, in multicolumn settings, 130–131
 - line length and, 111, 118–121
 - measure and, 122
 - resolution and, 284–285
 - for reversed type, 80–81
 - for running heads with folios, 227
 - sans serif types and, 133
 - screen display and, 287–289
 - seriffed types and, 131–132
 - for subheads, 220–222
 - for tables, 245, 248
 - tracking and. *See* tracking
 - typewriting vs. typesetting, 87–89
 - typographic measurement of, 23
 - for wraps with irregular shapes, 189
- points. *See also* indent on point
 - calculating, 122
 - character width for lowercase text, 132
 - defined, 318
 - notation conventions, 23
 - primes and, 90
 - typographic measurement of, 21–22
 - uses for, 22–23
- points of ellipsis
 - centered text and, 194–195
 - defined, 318
 - French conventions, 263
 - Italian conventions, 267
 - line breaks and, 208–209
 - overview of, 208
 - Spanish conventions, 266
- points of suspension. *See* points of ellipsis
- pop caps. *See* standing caps
- Portable Document Format (PDF), 291
- positive values, in kerning, 168
- PostScript font
 - character set, 51
 - character widths, 25
 - defined, 52, 319
 - development of, 15
 - device independence and, 14–15
 - duplicate, 101
 - identifying, 65–67
 - imaging, 15–16
 - ligatures and, 202
 - Macintosh and, 57, 95–96
 - not preventing embedded fonts, 102

PostScript font (*continued*)

- OpenType for, 54, 319
- overview of, 13–14, 52–53
- points, 21–22
- raster image processing and, 14–15
- TrueType improving, 53

PostScript interpreter, 52, 319

PostScript points, 22, 319

pound or number sign (#), 212

pound-sterling sign (£), 261

powers of magnitude sign (¥), 212

presses. *See* printing presses

primes (' ")

- defined, 319
- German conventions, 268
- keystrokes for, 210
- setting points with single, 23
- spacing issues, 212
- typesetting vs. typewriting, 90

printers

- inkjet, 14, 16
- laser, 13, 17
- line, 88–89
- PostScript interpreter and, 52

printing

- factors influencing clarity, 284
- low resolution and, 284–286
- offset lithography and, 11
- of reversed type, 80–81
- of style sheets, 272–273
- of type in color, 79–80
- when fonts are missing, 51–52, 101

printing presses, 10

Private Use range, Unicode, 62

proportional figures

- defined, 319
- lining, 173
- old-style numerals, 201

proportional type

- character widths of, 8
- defined, 319
- em-based, 24–25
- overview of, 9
- small capitals as, 199
- word spaces of, 85

pull-down menu, style sheets, 272

punctuation

- British vs. American English, 262
- centered text and, 194–195
- as component of typeface, 29
- for fractions, 207
- French, 263–265
- German, 267–268
- hanging, 193
- Italian, 267
- kerning and, 168–169
- in monospaced type, 8
- for small caps, 200
- subheads and, 221

punctuation space

- aligning currency symbols in numeric tables with, 257
- defined, 319

Q

quadding commands, 86–87, 320

quality, typesetting

- legibility and readability, 105–106
- long lines and tight leading, 110–111
- narrow-measure problems, 111–112
- optical effects and alignment problems, 112–113
- overly loose spacing, 109
- overly tight spacing, 107–109
- overview of, 105
- trusting the eyes, 113
- type color, 106–107
- unbalanced spacing, 109–111

QuarkXPress, kerning-table editor, 172–173

QuickDraw, 96

quotation marks. *See also* guillemets (« »)

- ASCII, 90, 298
- in bibliographies, 236
- book title in bibliography, 236
- British vs. American English, 262
- centered text and, 194–195
- as curly quotes, 302
- extracts and, 223
- French, 264
- German, 267–268

high-bit, 310
 Italian, 267
 italics and, 76
 kerning and, 168, 171
 Spanish, 266–267
 typesetting vs. typewriting, 90, 327
 quoted text, 223

R

rag right. *See* ragged right margins
 ragged left margins, 183, 320
 ragged margins
 aesthetics of, 164–165
 creating TOC, 225
 defined, 320
 gutters and, 131
 H&J and, 145, 156
 optical alignment and, 113
 troublesome alignments with, 194–195
 word-space ranges in, 147–148
 wraps, avoiding, 187
 ragged right margins
 defined, 320
 footnotes, 232
 hyphenation zones and, 144
 indexes, 233–234
 justification and, 136–137
 legends and, 230
 measure and, 112, 117
 optical alignment and, 113
 range of lines, multiline H&J, 139–141
 ranging numerals. *See* lining numerals or figures
 ranked hyphenation, 320
 raster image processor
 overview of, 14–15
 PostScript fonts and, 15–16
 screen display and, 96
 raster image processors (RIPs), 320
 rasterized images, 14–15, 320
 readability
 defined, 320
 drop cap issues, 214–215
 leading in non-text settings, 130
 legibility and, 105–107
 screen display and, 175–176, 287–288
 text faces and, 74
 of various typefaces, 71–72
 wraps and, 186
 rectangular wraps, 187
 recto, defined, 320
 reference marks
 defined, 321
 for footnote symbols, 232–233
 low resolutions and, 285
 registered color inks, 80
 registered trademark symbol (®), 192, 212
 registration
 knockouts and, 313
 overprinting and, 317
 type clarity and, 81
 regular weight
 defined, 321
 setting text, 75
 as typeface family component, 43
 relative indents, 321
 relative measurements
 defined, 321
 em, 24–26
 kerning and, 168
 overview of, 24
 word space, 26–27
 Remington typewriter, 7–11
 rendering. *See* rasterized images
 resolution. *See also* dpi (dots per inch)
 bitmaps and, 50
 Cascading Style Sheets and, 291–293
 defined, 321
 high output advantages, 283–284
 low print, 175, 283–286
 type onscreen and, 96, 286–290
 typography for world wide web, 290–291
 resource fork, Macintosh fonts, 53–54
 Return key
 defined, 321
 leading and, 127–128
 in modern typesetting, 85–86
 paragraph indents and, 183
 searching and replacing styles, 281
 triggering follow-on style sheets, 274

- reverse indentation, 184
 - reverse leading, 321
 - reverse type
 - defined, 321
 - leading in, 129
 - loosening tracking in, 175
 - low resolutions and, 285
 - onscreen, 81
 - overview of, 80–81
 - rewrapping lines, 157–158
 - right indents, 181, 321
 - right-reading images, 11, 321
 - ring (°) accent, 211, 260
 - RIPS. *See* raster image processors (RIPS)
 - rivers, 163–164, 321
 - roles, classifying typefaces, 44
 - romain du roi*, 46, 321
 - roman numerals, 224, 321
 - roman typefaces
 - bibliographies and, 236
 - defined, 321
 - italics based on, 42
 - kerning transition with italics, 171
 - obliques based on, 42–43
 - overview of, 41–42
 - readability of, 72
 - setting, 96–97
 - style sheets and, 280–281
 - rows, table
 - column structures, 241–242
 - defined, 321
 - setting, 248
 - spreadsheet-style, 243–244
 - structure of, 239–240
 - rule fill, 88–89, 322
 - rules
 - centering text between, 251–252
 - defined, 322
 - leading of horizontal, 250–251
 - specifying horizontal, 242
 - specifying in spreadsheets, 244–245
 - in tables, 247–248
 - runarounds, 322. *See also* wraps
 - run-in indexes, 234–236
 - run-in jump lines, 228
 - run-in subheads, 220–222, 322
 - running heads
 - conventions for, 227
 - defined, 322
 - folios and, 226–227
 - placement on page, 190
 - running indents
 - defined, 180, 322
 - hanging indents as, 184
 - orphans and, 181–182
 - overview of, 181
 - running text, 322
 - runover lines
 - defined, 322
 - footnotes and, 232
 - in indexes, 234, 236
 - leading and, 224
 - in tables, 249
 - widowed lines and, 234
 - word processor non-support for, 241–242
- S**
- Sabon typeface (Linotype), 74, 118–121
 - sans serif typefaces
 - avoiding tightly spaced, 108
 - colored inks and, 79–80
 - in condensed typefaces, 77
 - defined, 33, 322
 - as display type, 44, 78–79
 - in drop caps, 214
 - geometric, 40, 308
 - gothic names for, 47
 - jump lines and, 228
 - large typeface families of, 43
 - ligatures and logotypes in, 202
 - point size and measure and, 133
 - readability of, 72
 - in reversed type, 81
 - screen display and, 287–288
 - seriffed compared to, 40
 - for subheads, 220
 - system-generated italics of, 98–99
 - tight spacing in, 108
 - traditional uses, 72–73
 - saving, style sheets, 276

- Scotch rules, 247, 322
- Scotch typefaces, 46, 322
- screen display
 - anti-aliasing for. *See* anti-aliasing (font smoothing)
 - bitmapped fonts and, 49–50, 67, 287, 322
 - Display PostScript and, 303
 - how fonts are used, 96–98
 - increasing type size, 287–288
 - legibility and, 288–289
 - loose tracking and, 175–176
 - resolution and. *See* resolution
 - reversed type, 81
 - Style menu and, 96–97
 - typefaces for, 287–288
 - when fonts are missing, 97–98
 - Windows and Mac os imaging for, 95–96
- screen fonts, 322. *See also* bitmapped fonts
- script typefaces, 176, 322
- Search tool, Windows' Character Map, 59
- search-and-replace controls, style sheets, 280–281
- seconds, indicating with primes, 90
- section headings, books, 218
- section mark (§), 212, 233
- sections of text, 227. *See also* subheads
- “see also” references, indexes, 234–235
- semibold typefaces
 - footnotes and, 231–232
 - reversed type and, 80–81
 - setting on computer, 97
 - small caps and, 200
 - superiors and inferiors in, 205–206
 - top alignment of characters and, 192
- semicolon (;), 76, 89, 234, 236
- sentence style (down style)
 - captions in, 229
 - chapter headings in, 219
 - defined, 322
 - titles of books and magazines in, 266
- seriffed typefaces
 - benefits of, 33–34
 - compared to sans serif, 40
 - condensed typefaces, not using, 77
 - defined, 323
 - italic and oblique, 42
 - of modern typefaces, 46–47
 - readability of, 72
 - text faces using, 74
 - traditional uses of, 72–73
 - types of, 34–35
 - x-height and, 131–132
- serifs
 - bracketed, 34–35
 - defined, 322, 323
 - hairline, 34–35
 - legibility and, 33–34
 - overview of, 32–33
 - slab, 34–35
 - slur, defined, 323
 - square, 34–35
 - types of, 34–35
 - unbracketed, 34–35
- set width. *See* character width
- shaped margins, 185, 323
- shaped rags, 323
- Shift key
 - Macintosh's Keyboard Viewer, 59
 - typewriting vs. typesetting, 89
- shoulder, of curved characters, 33, 323
- side bearing
 - defined, 323
 - em dash and, 207–208
 - monospacing with exaggerated, 8
 - screen display and, 288
 - tight spacing and, 108
- Simoncini Life typeface, 133
- single-byte fonts, 53, 323
- size changes, typeface design and, 5–6, 38–39
- skew. *See* skewed margins
- skewed margins, 185–186, 323
- slab serifs, 34–35, 323
- slash. *See* virgule (/)
- slur serif, defined, 323
- small caps
 - author's name in bibliography and, 236
 - in caps-and-small caps style. *See* caps-and-small caps

- small caps (*continued*)
 - captions and legends using, 229
 - chapter headings in, 219
 - cut-in subheads and, 222
 - defined, 323
 - drop caps and, 214
 - expert or alternate fonts for, 61
 - extended character sets with, 198–199
 - as layout feature, 63
 - overview of, 199–200
 - running heads and, 227
 - standing caps and, 215
 - straddle heads and, 245
 - subheadings and, 219
 - uses of, 200
- smoothing type. *See* anti-aliasing (font smoothing)
- snap to guideline, frame alignment, 192
- soft hyphens
 - aesthetic rags and, 164–165
 - defined, 323
 - hyphenation and, 157–158
 - overview of, 145
 - typesetting vs. typewriting, 89
 - widows and, 160
- soft returns
 - aesthetic rags and, 165
 - centered text problems with, 194
 - defined, 323
 - first-line indents and, 183–184
 - nested styles and, 274
 - typesetting vs. typewriting, 86
- solid-set type, 122–125, 130, 323
- solidus, 323. *See also* virgule (/)
- solidus fraction, 204, 323
- Sorts typeface, Monotype, 44, 209
- sorts, type, 6, 323
- “space after” paragraph attribute, 127, 323
- space bands, 84, 323
- “space before” paragraph attribute, 126, 128, 323
- spacing issues. *See also* character spacing; kerning pairs; line spacing; tracking; word spaces
 - characters, 212–213
 - em dash, 207
 - loose and tight lines, 156–158
 - subheads, 221–222
 - type color, 106–107
 - typesetting and, 5
 - unbalanced spacing, 109–111
- spacing units, em-based, 26
- Spanish typographic conventions, 266–267
- special characters. *See also* symbols
 - accented characters, 211
 - common pi characters, 209–210
 - dashes, 207–208
 - definition of, 197
 - extended character sets, 197–199
 - fractions, 205–207
 - initial capitals, 213–215
 - ligatures, logotypes, and diphthongs, 201–203
 - old-style numbers, 201
 - points of ellipsis, 208–209
 - small capitals, 199–200
 - specific spacing issues, 212–213
 - superiors, inferiors, and ordinals, 204–205
 - swash characters, 203
- special characters, finding
 - with application glyph palettes, 60–61
 - expert sets and alternate fonts, 61
 - with Macintosh Keyboard Viewer, 59–60
 - minus and multiplication signs, 210
 - OpenType layouts, 62–64
 - outside Unicode standard, 61–62
 - primes, 210
 - with Windows Character Map, 58–59
- species, use of italics for, 76
- spelling dictionary, 203, 260
- spine, of character, 33, 324
- spread, 227, 324
- spreadsheet-style tables
 - adding rules to, 250–251
 - alignment issues in, 254–255
 - hanging characters and, 255–256
 - overview of, 241
 - problems with, 241–242
 - setting, 247–248
 - vertical alignment in, 246

- square serif, 34–35, 323
- stance, of characters, 42, 324
- standard width typefaces, 324
- standard-width typefaces, 73, 132
- standing caps, 213, 215, 324
- standoff distance, 186–189
- stem weight, 19
- stem, of character, 33, 324
- Stempel Garamond typeface, 42, 45, 73
- storage, font management, 68
- straddle entries, 240–241, 324
- straddle heads
 - defined, 324
 - gutters in columns sharing, 249
 - overview of, 240–241
 - rules used for, 247
 - in spreadsheet-style tables, 243
 - typographic distinction of, 245–246
- street addresses, French conventions, 265
- stress
 - defined, 324
 - influence of calligraphy, 32
 - in old-style typefaces, 45
- strike-out type. *See* strike-through type
- strike-through type
 - in Cascading Style Sheets, 293
 - defined, 324
 - typewriting vs. typesetting, 89
- stroke weight
 - calligraphic influence of, 33
 - in Cascading Style Sheets, 293
 - color of type and, 106–107
 - condensed faces and, 77
 - effect of, 132
 - legibility and, 39
 - of modern typefaces, 46
 - seriffed vs. sans serif, 40
 - software-generated small caps
 - and, 199
 - transitional typefaces and, 46
 - type color and, 133
 - type size and, 131
- stroked paths, 250–251, 324
- strokes, character
 - defined, 324
 - serif typefaces, 34
 - transitional and modern typefaces,
 - 46–47
 - typeface weight and, 40
- structure, of documents
 - chapter headings, 219
 - cut-in subheads, 222–223
 - extracts, 223
 - outline formats and tables of
 - contents, 223–225
 - overview of, 217–219
 - subhead indentation, 222
 - subhead spacing issues, 221–222
 - subheadings, 219–221
- structure, table, 239–241
- stub columns, 239–240, 242, 324
- stub tabs, 249–250
- style sheets
 - building H&J values into, 156
 - creating, 275–278
 - defined, 271, 324–325
 - how they work, 271–272
 - importing, 281
 - overrides, 279–280
 - overview of, 271
 - paragraph, 281
 - paragraph indents with, 91, 183
 - paragraph vs. character, 273–275
 - printing, 272–273
 - removing, 279
 - searching and replacing, 280–281
 - tables of contents with, 224–225
- subentries, index, 234–235, 325
- subheads
 - bold type for, 76
 - captions and legends with,
 - 229–230
 - cut-in, 222–223
 - defined, 325
 - document structure and, 217–219
 - indentation, 222
 - point size of folio and, 226
 - run-in subheads, 220–221
 - in running heads, 227
 - spacing issues, 221–222
 - style sheets for, 281
 - in table of contents, 224–225

subheads (*continued*)
 in tables, 245
 typographic conventions for, 219–221

subscripts
 alignment and, 192
 in Cascading Style Sheets, 293
 defined, 64, 325
 overview of, 204–205
 using grep expressions with, 275

subsets, of fonts, 102, 325

suitcase folder, Macintosh OS, 325

superior characters. *See* superscripts

superior ordinals, 204–205

superscripts
 alignment and, 192
 building fractions by hand, 206
 em fractions built from, 205
 hanging characters in tables and, 255–256
 layout features, 64
 low resolutions and, 285
 overview of, 203
 semibold typefaces and, 200, 205
 specifying size of, 204

supplementary tracking controls, 173

suspension points. *See also* points of ellipsis
 overview of, 208–209

swash characters
 defined, 325
 in extended character sets, 198–199
 layout features, 63
 overview of, 203

Symbol font
 duplicates, possibility of, 101
 hard-to-find characters and, 210
 MacRoman encoding and, 57
 minus and multiplication signs, 89
 pi characters and, 210
 primes and, 90

symbols. *See also* accented characters; pi
 fonts; special characters
 currency, 256–257
 indicating footnotes by, 232–233
 jump lines with, 228
 on Macintosh computer, 59–60, 211, 258–259

new OpenType fonts with, 198–199
 typesetting nonalphabetic fonts, 44
 on Windows computer, 58–59, 211, 258–259

T

tab cycle, 239, 325

tab entries, tables
 alignment in numeric tables, 257
 alignment of, 245–246, 248
 alignment of heads and, 252–254
 balancing with column widths and
 gutters, 248–249
 defined, 239, 325
 indentation in, 246–247
 leading and, 249
 leading for runovers in, 249
 narrow example, 249
 in spreadsheet-style tables, 243–244
 straddle heads and, 240
 void or missing, 257

Tab key, 183
 for indentation, 84
 for indentation, improper use of, 183
 keystroked codes and, 18
 typesetting vs. typewriting, 91
 word processors and, 241

tab values, 241, 252, 325

tab-delimited text files, 247–248

table-cell style sheets, 275

tables. *See also* headings, of tables
 alignment, 245–247
 complexity of, 239
 grid (spreadsheet) approach, 242–245
 hanging characters and, 193–194
 indentation, 246–247
 kerning. *See* kerning tables
 leading, 239–240, 245, 248–252
 point size, 245
 rules, 247
 small caps for headings, 200
 specifying, 241–242
 structures of, 239–241
 typeface choice, 245

- tables of contents (TOCs), 223–225, 274
- table-setting techniques
 - aligning heads and tab entries, 252–254
 - aligning numeric tables, 254–257
 - balancing column widths and gutters, 248–249
 - centering text, 251
 - currency symbol alignment, 256
 - hanging characters, 255–256
 - leading, 249–252
 - overview of, 247–248
 - void or missing entries, 257
- tablet PCs, 286
- tabs
 - aligning in tables, 245–247
 - typewriting vs. typesetting, 91
 - typographic vs. word processing, 241–242
- tabular lining numerals, 63
- tag stops, 91, 325
- tail rules, in tables, 325
- tail, of characters, 33, 325
- technical texts, cut-in subheads for, 222–223
- telephone books, ink wells in, 37
- temperatures
 - American vs. British expressions, 263
 - French numeric expressions, 266
- templates, 273–274, 276, 325
- terminal character. *See* finials
- terminal, of character, 33, 325
- text
 - blocks, 193–195
 - creating style sheets from existing, 277–278
 - on curved baselines, 177
 - letter spaces and, 110, 136–138, 142–147
 - low resolution adjustments for, 284–286
 - plain text, 318
 - point size for, 122
 - ragged margin. *See* ragged margins
 - running text, 322
 - sans serif used for, 133
- text frames. *See* frames, text
- text on a path, 177, 326
- text typefaces
 - bolding for display roles, 78
 - common features of, 73–75
 - defined, 326
 - expanded faces for, 43
 - italics in, 76
 - overview of, 44
 - serif as standard for, 72–73
 - using sans serif, 72–73
- text wrapping. *See* wraps
- thin spaces
 - with bullets, 210
 - defined, 326
 - with ellipsis points, 208
 - em-based, 26
 - in French typography, 265–266
 - in Italian typography, 267
 - in letterspacing, 154
 - with oversized characters, 195
 - in Spanish typography, 266
 - in temperature expressions, 263
- 3-em dash, 237
- three-dot ellipsis (...), 208–209
- threshold effect, 19
- tight rags, 147–148, 326. *See also* ragged margins
- tight spacing
 - in H&J, 156–157
 - illegibility and, 106
 - overly, 107–109
 - type color and, 106–107
 - word-space ranges in justified margins, 148–152
- tilde (˘) accent, 59, 146, 211, 260
- time expressions, language-specific
 - issues, 258–259
- Times New Roman typeface
 - (Monotype)
 - readability problems of, 74, 107
 - as seriffed font, 40
 - size sensitivity of, 39
 - as text face, 73–74
 - text face features of, 73–74
 - type color and, 107
 - typeface family, 43

Times Roman typeface (Linotype)

- character width and, 132
- as narrow-width text face, 73–74
- readability problems of, 74, 107
- screen display and, 287
- as serifed text face, 40, 72
- type color and, 107
- x-height and, 23

titles

- for books in bibliographies, 236
- defined, 218
- hyphenation, avoiding in, 219
- OpenType titling characters, 64
- running heads, 227
- style sheets for, 281
- in table of contents, 225

titles, contractions in names, 263

titling typefaces, 38, 78, 199, 326

toc (tables of contents), 223–225, 274

tombstone effect, 130

top alignment

- defined, 326
- of drop caps, 213
- of footnote symbols, 232–233
- in tables, 246
- vertical, 191–192

top rules (head), tables, 247

tracking

- character spacing and script faces
 - and, 176
- controlling, 170–171
- correcting composition faults, 157–161
- defined, 326
- H&J and, 138, 146
- kerning vs., 167–168
- loosening for reversed type, 80, 175
- onscreen legibility and, 289
- in special situations, 175–176
- tightening as point size grows,
 - 174–175

trademark symbol (™), 192, 212

transitional typefaces, 46, 326

trim size, of pages

- defined, 326
- overview of, 24
- page grids and, 317

True Type Collections, 66–67

TrueType font

- alternate fonts obsolete in, 61
- blocking embedded fonts in, 102
- em units in, 25
- extended character sets, 197–199
- filename extension for (.otf), 65
- identifying, 66–67
- ligatures in, 202
- Macintosh dfonts as, 53–54
- multiple master fonts, 39
- OpenType as hybrid for, 54
- origins of, 16
- overview of, 53
- problem of duplicate fonts, 101
- Unicode numbers and, 55–56
- working on Macintosh with, 57

Trump Mediaeval, 73

.ttc filename extension, 66–67

.ttf filename extension, 65–67

turn lines. *See* runover lines

12 on 12 (solid set), 123

type

- ascenders and descenders, 36
- bounding boxes and spaces, 5
- building blocks, 3–4
- calligraphic influences on, 32–33
- changing definitions of font, 10–13
- changing letterforms along with their
 - size, 38–39
- design as function of size, 5–6
- desktop publishing altering the rules
 - of, 13–16
- evolution and automation of, 6–7
- monotype, 9–10
- output resolution and quality of,
 - 16–17
- overview of, 32–33
- serifs, 33–35
- size. *See* point size
- typewriter, as first desktop publishing
 - tool, 7–9

Type 1 PostScript font. *See* PostScript font

type area, of page

- defined, 326
- grids defining, 190

- type color
 - controlling with leading, 133
 - as key to graphically harmonious page, 5
 - leading for reversed type, 129
 - loosely spaced type and, 109
 - paragraph problems, 158–159
 - quality control and, 106–107
 - rescuing widows and, 160
 - spacing and, 109–110
 - tightly spaced type and, 107–109
- typeface families, 43, 326
- typefaces
 - ascenders and descenders, 36
 - calligraphic influences, 32–33
 - captions and legends, 229–230
 - classifying by historical period, 45–47
 - condensed and extended faces, 77–78
 - decorative faces, 44, 79
 - defined, 29
 - display faces, 44, 78
 - em square in type design, 30–32
 - expressing emphasis, 75–76
 - fonts vs., 29–30
 - impact on point size, measures and leading, 130–133
 - for indexes, 234
 - ink wells in, 36–37
 - naming issues, 47
 - nonalphabetic fonts, 44
 - optical aspect in design of, 37
 - point size of footnotes, 231–232
 - readability of, 71–72
 - reverse type in, 80–81
 - romans and italics in, 41–43
 - for running heads with folios, 227
 - sans serif faces, 40, 72–73
 - screen display fonts, 287–288
 - serif faces, 33–36, 40, 72–73
 - setting tracking for, 173–174
 - size changes and, 37–39
 - specifying for tables, 245, 248
 - text faces, 44, 73–75
 - type color and, 79–80, 106–107
 - typewriting vs. typesetting choices, 87–89
 - variations in weight, 40–41
 - variations in width, 43
- typesetting
 - anti-aliasing for improving quality of, 18–19
 - defined, 327
 - legibility and readability, 105–106
 - long lines and tight leading, 110–111
 - loose spacing, 109
 - narrow-measure problems, 111–112
 - optical effects and alignment problems, 112–113
 - output resolution, 16–17
 - overview of, 105
 - tight spacing, 107–109
 - trusting the eyes, 113
 - type color, 106–107
 - unbalanced spacing, 109–111
 - word processors and, 18–19
 - WYSIWYG, 17–18
- typesetting systems
 - dedicated. *See* dedicated typesetting systems
 - personal computer. *See* computer typesetting systems
 - typewriting vs. typesetting. *See* typewriting vs. typesetting
- typewriters
 - escapement, 7–8
 - as first desktop publishing tool, 7
 - monospaced type, 8
 - Monotype machines, 9–10
 - proportional type, 9
 - quotation mark style, 327
- typewriting vs. typesetting
 - line endings and carriage returns, 85–86
 - overview of, 83
 - page sizes and line lengths, 83–84
 - quads, 86–87
 - tabs, 91
 - typeface choice and point size, 87–89
 - unavailable characters, 89–91
 - word spaces, 84

typographic measurement units

absolute, 21–24

agates, 27

didot point, 27

relative, 24–27

typographic quotation marks, 327

U

U.S. Type Founders Association, 21–22

ultracondensed typefaces. *See* condensed typefaces

umlaut (¨), 59, 211, 260

unbalanced spacing, 109–111

unbracketed, 34–35

unbracketed serifs

defined, 327

hairline, in modern faces, 46, 315

overview of, 34–35

underscore (_), 88–89, 327

Unicode, 56

accessing accented characters,
258–259

Character Map and, 59

characters outside of, 61–62

characters vs. glyphs in, 56

defined, 327

encoding issues, 57

extended character sets based on, 51,
197–199

fraction bar in Windows, 206

hard-to-find characters, 210

ligatures and, 203

Mac OS X and, 55–57, 60

numbering system technology, 55–56

United States Declaration of

Independence, 84

units, typographic measurement

absolute, 21–24

agates, 27

didot point, 27

relative, 24–27

Univers typeface, 40

Universal News with Commercial Pi, 210

Unshift, typewriters, 89, 327

up style, 219, 229, 327

uppercase. *See also* capitalization

accented characters in European

languages, 261

in Cascading Style Sheets, 292

common diphthongs in, 202

defined, 327

titling faces and, 64, 192

transitional typefaces and, 46

true condensed faces and, 78

V

variable dot size

defined, 327

laser printers and, 17

vector fonts. *See* outline fonts

vector-based objects, 14

vectors

defined, 327

of outline fonts, 50

in PostScript, 14

Venetian typefaces, 45, 327.

See also old-style typefaces

Verdana typeface (Microsoft), 287–288

verso pages, 227, 327

vertical alignment

bottom, 193

in Cascading Style Sheets, 293

center, 192–193

in lowercase figures, 9

of tab entries in tables, 245–247

text on curved baselines and, 177

top, 191–192

vertical gutters, 188

vertical justification

defined, 328

feathering during, 306

frame-at-time, 163

overview of, 161–163

subheads and, 218

vertical space bands and, 126, 162

vertical rules, tables, 247

vertical space bands

defined, 328

line spaces and, 127–128

subheads and, 218

text frames, 126
 vertical justification and, 162
 video presentations, tracking for, 175
 virgule (/)
 defined, 328
 fraction bar compared to, 206
 as line-break point, 141
 separating numerals in fractions,
 91, 205

visual alignment
 aligning heads and tab entries,
 252–254
 centered text and, 194–195
 defined, 317
 of oversized characters, 195
 overview of, 193
 of ragged margins, 194
 void data, in tab entries, 257

W

Warnock Pro font family (Adobe), 97

web browsers

 Cascading Style Sheets and, 290
 text-composition abilities of, 287
 typography and, 291

web fonts

 defined, 328
 overview of, 54–55
 for screen display, 287–288

Webdings font (Microsoft), 209

wedge serifs

 defined, 328
 overview of, 34–35

weight, typeface. *See also* stroke weight

 defined, 328
 degrees of boldness and, 41
 multiple master fonts and, 39
 of old-style typefaces, 45
 of subheads, 220
 of table rules, 247
 top aligning scaled-down characters
 and, 192
 variations in, 40–41

Western European languages, accents
 for, 211

what you see is what you get. *See* WYSIWYG

white space

 asymmetrical leading in display type
 and, 129
 defined, 328
 em units, 25–26
 kerning and, 168
 in monospacing, 8
 multicolumn settings and, 130–131
 point size and, 123
 in rivers, 163–164
 screen display typefaces and, 288
 table gutters and, 248–249
 type size and, 37–38

widows

 deep indents causing, 182–183
 defined, 328
 in indexes, 236
 overview of, 159–160
 rescuing, 160–161

width

 character. *See* character width
 variations in typeface, 43

width tables, 51, 328

width-compatible typefaces, 328

wild rag, 147–148, 328

Win ANSI

 accessing fraction bar i, 91
 accessing minus and multiplication
 signs, 210
 accessing primes, 210
 Character Map, 58–59
 defined, 57, 328
 ligatures omitted in, 202
 ordinals in, 204

Windows OS

 fonts. *See* fonts, Windows OS
 fraction bar, 206
 symbols, 211, 258–259

Wingdings font (Microsoft), 209

word processors

 aligning text using word spaces, 84
 automatic leading, 124
 bold command and, 96–97
 emphasis and highlighting, 88–89
 indents as paragraph attributes, 180

word processors (*continued*)

- inferiors, 204
- leading as paragraph attribute, 128
- legacy of, 19, 93–95
- ligatures, 203
- line printers, 87–88
- line spacing, 122
- line-ending commands, 85–86
- numeric tables and, 254–256
- orphans, 161
- page size and, 84
- quotation marks, 90
- runovers and, 241–242
- style sheets and, 275, 279
- superiors, 204
- tabs, 91
- tabs, typesetting vs., 241–242
- traditional typesetting and, 17–18
- word spaces and, 84

word spaces

- in assigning character styles, 273
- avoiding in points of ellipsis, 208
- with bullets, 210
- in centered text, 194
- compared with thin space, 154
- controlling, 142–143
- defined, 329
- em basis of, 26–27
- in Gutenberg's system, 4
- H&J and, 136–138, 141–143, 147, 154–155
- in indexes, 234
- as line-break point, 141
- loose or tight lines and, 156–158
- narrow measures and, 111–112
- nonbreaking, 141, 263, 265–266
- overly loose spacing, 109
- overly tight spacing, 107–109
- in ragged-margin type, 147–148
- reversed type and, 129
- in text with justified margins, 148–152
- type color and, 106–107
- typewriting vs. typesetting, 84–85
- in unbalanced spacing, 109–111
- workgroups, shared style sheets and, 276–277

world wide web

- Cascading Style Sheets and, 291–293
- typography and, 290–291

wove paper, 41

wraps

- badly set type and, 112
- cut-in subheads and, 223
- defined, 329
- drop caps and, 214
- H&J and, 139, 146
- irregularly shaped, 189
- narrow measures and, 112
- overview of, 185
- rectangular, 187–189
- rewrapping lines, 157
- setting, 186–187
- standoff distance and, 186–189

WYSIWYG

- dark side of, 17–18
- defined, 329
- how it works, 95–96
- improving, 18–19
- origins of, 13

X

Xerox, 13

x-height

- ascenders and descenders and, 36
- defined, 329
- overview of, 32
- screen display and, 288
- seriffed typefaces and, 131–132
- small caps design and, 200
- type color and, 107
- type size and, 131–132
- typeface design and, 38

Z

- Zapf Dingbats font, ITC, 44, 198–199, 209–210

zones

- hyphenation, 144–145, 148
- justification, 153
- zoom, in manual kerning, 170–171