THE ELEMENTS OF TYPO-GRAPHIC STYLE

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RST

RENAISSANCE (15th & 16th centuries): modulated stroke, humanist [oblique] axis; crisp, pen-formed terminals; large aperture; italic equal to and independent of roman

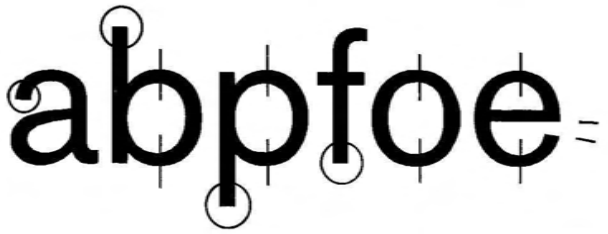
aperture: the opening in letters such as a, c, e, s

BAROQUE (17th century): modulated stroke, variable axis; modelled serifs and terminals; moderate aperture; italic subsidiary to roman and closely linked with it

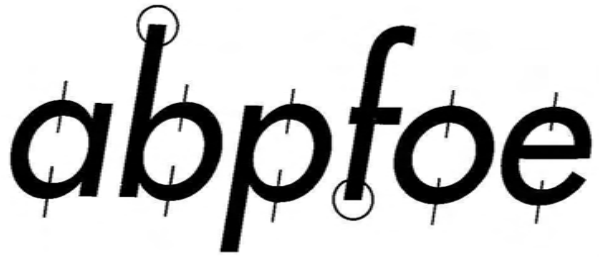
NEOCLASSICAL (18th century): modulated stroke, rationalist [vertical] axis; refined, adnate serifs; lachrymal terminals; moderate aperture; italic fully subjugated to roman

adnate: flowing into the stem
lachrymal: teardrop-shaped

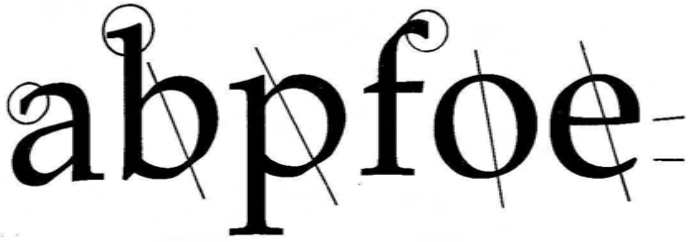
ROMANTIC (18th & 19th centuries): high contrast, intensified rationalist axis; abrupt, thin serifs; round terminals; small aperture; fully subjugated italic



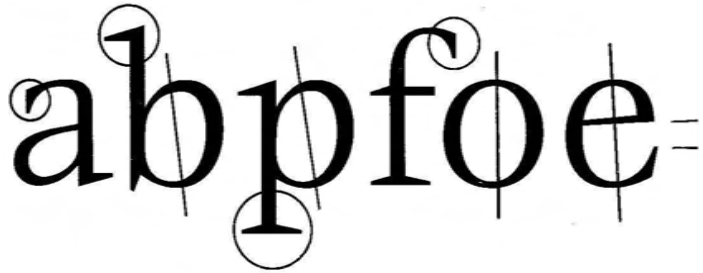
REALIST (19th & early 20th centuries): unmodulated stroke, implied vertical axis; small aperture; serifs absent or abrupt and of equal weight with main strokes; italic absent or replaced by sloped roman



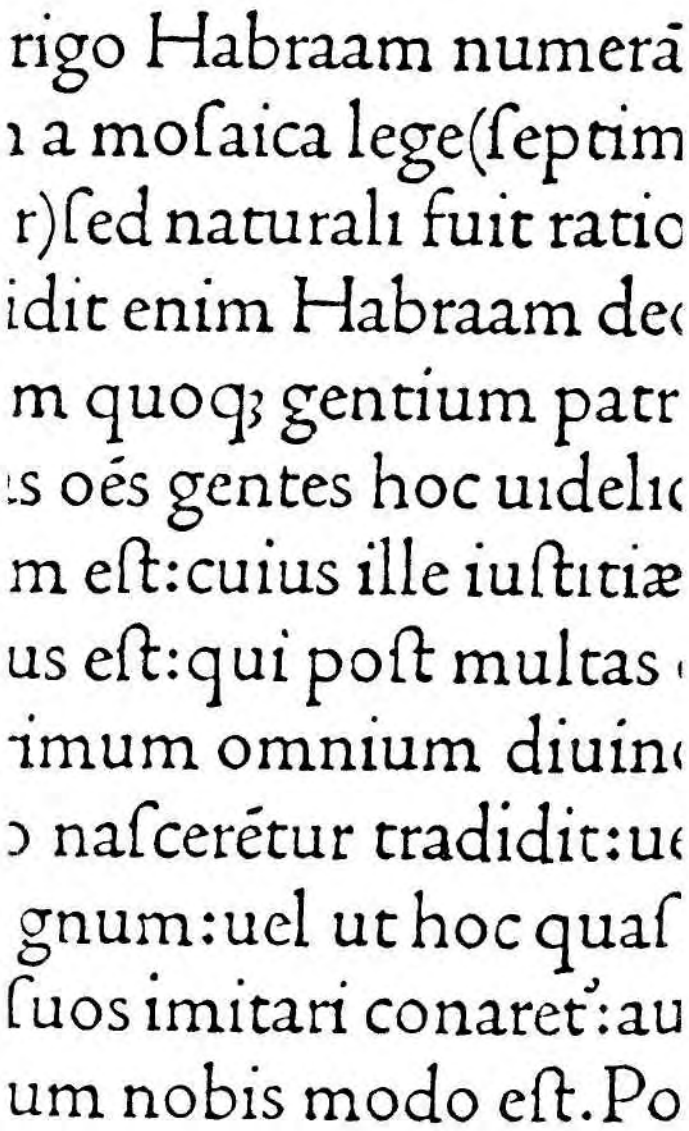
GEOMETRIC MODERNIST (20th century): unmodulated stroke; bowls often circular (no axis); moderate aperture; serifs absent or of equal weight with main strokes; italic absent or replaced by sloped roman



LYRICAL MODERNIST (20th century): rediscovery of Renaissance form: modulated stroke, humanist axis; pen-formed serifs and terminals; large aperture; italic partially liberated from roman



POSTMODERNIST (late 20th century): frequent parody of Neoclassical and Romantic form; rationalist axis; sharply modelled serifs and terminals; moderate aperture; italic subjugated to roman



Roman type cut in 1469 by Nicolas Jenson, a French typographer working in Venice. The original is approximately 16 pt. The type is shown here as Jenson printed it, but at twice actual size. This is the ancestor of the type (Bruce Rogers's Centaur) shown at the top of page 12.

1.1 FIRST PRINCIPLES

1.1.1 *Typography exists to honor content.*

Like oratory, music, dance, calligraphy – like anything that lends its grace to language – typography is an art that can be deliberately misused. It is a craft by which the meanings of a text (or its absence of meaning) can be clarified and honored, or knowingly disguised.

In a world rife with unsolicited messages, typography must often draw attention to itself before it will be read. Yet in order to be read, it must relinquish the attention it has drawn. Typography with anything to say therefore aspires to a kind of statuesque transparency. Its other traditional goal is durability: not immunity to change, but a clear superiority to fashion. Typography at its best is a visual form of language linking timelessness and time.

One of the principles of durable typography is always legibility; another is something more than legibility: some earned or unearned interest that gives its living energy to the page. It takes various forms and goes by various names, including serenity, liveliness, laughter, grace and joy.

These principles apply, in different ways, to the typography of business cards, instruction sheets and postage stamps, as well as to editions of religious scriptures, literary classics and other books that aspire to join their ranks. Within limits, the same principles apply even to stock market reports, airline schedules, milk cartons, classified ads. But laughter, grace and joy, like legibility itself, all feed on meaning, which the writer, the words and the subject, not the typographer, must generally provide.

In 1770, a bill was introduced in the English Parliament with the following provisions:

… all women of whatever age, rank, profession, or degree, whether virgins, maids, or widows, that shall … impose upon, seduce, and betray into matrimony, any of His Majesty's subjects, by the scents, paints, cosmetic washes, artificial teeth, false hair, Spanish wool, iron stays, hoops, high heeled shoes [*or*] *bolstered hips shall incur*

the penalty of the law in force against witchcraft … and … the marriage, upon conviction, shall stand null and void.

The function of typography, as I understand it, is neither to further the power of witches nor to bolster the defences of those, like this unfortunate parliamentarian, who live in terror of being tempted and deceived. The satisfactions of the craft come from elucidating, and perhaps even ennobling, the text, not from deluding the unwary reader by applying scents, paints and iron stays to empty prose. But humble texts, such as classified ads or the telephone directory, may profit as much as anything else from a good typographical bath and a change of clothes. And many a book, like many a warrior or dancer or priest of either sex, may look well with some paint on its face, or indeed with a bone in its nose.

1.1.2 *Letters have a life and dignity of their own.*

Letterforms that honor and elucidate what humans see and say deserve to be honored in their turn. Well-chosen words deserve well-chosen letters; these in their turn deserve to be set with affection, intelligence, knowledge and skill. Typography is a link, and it ought as a rule to be as strong as the others in the chain.

Writing begins with the making of footprints, the leaving of signs. Like speaking, it is a perfectly natural act which humans have carried to complex extremes. The typographer's task has always been to add a somewhat unnatural edge, a protective shell of artificial order, to the power of the writing hand. The tools have altered over the centuries, and the exact degree of unnaturalness desired has varied from place to place and time to time, but the character of the essential transformation between manuscript and type has scarcely changed.

The original purpose of type was simply copying. The job of the typographer was to imitate the scribal hand in a form that permitted exact and fast replication. Dozens, then hundreds, then thousands of copies were printed in less time than a scribe would need to finish one. This excuse for setting texts in type has disappeared. In the age of photolithography, digital scanning and offset printing, it is as easy to print directly from handwritten copy as from text that is typographically composed. Yet the typographer's task is little changed. It is still to

give the illusion of superhuman speed and stamina – and of superhuman patience and precision – to the writing hand.

Typography is just that: idealized writing. Writers themselves now rarely have the calligraphic skill of earlier scribes, but they evoke countless versions of ideal script by their varying voices and literary styles. To these blind and often invisible visions, the typographer must respond in visible terms.

In a badly designed book, the letters mill and stand like starving horses in their field. In a book designed by rote, they sit like stale bread and mutton on the page. In a well-made book, where designer, compositor and printer have all done their jobs, no matter how many thousands of lines and pages, the letters are alive. They dance in their seats. Sometimes they rise and dance in the margins and aisles.

Simple as it may sound, the task of creative non-interference with letters is a rewarding and difficult calling. In ideal conditions, it is all that typographers are really asked to do – and it is enough.

1.1.3 *There is a style beyond style.*

Literary style, says Walter Benjamin, "is the power to move freely in the length and breadth of linguistic thinking without slipping into banality." Typographic style, in this large and intelligent sense of the word, does not mean any particular style – my style or your style, or Neoclassical or Baroque style – but the power to move freely through the whole domain of typography, and to function at every step in a way that is graceful and vital instead of banal. It means typography that can walk familiar ground without sliding into platitudes, typography that responds to new conditions with innovative solutions, and typography that does not vex the reader with its own originality in a self-conscious search for praise.

From Part 2 of Benjamin's essay on Karl Kraus, in *Illuminationen* (Frankfurt, 1955). There is an English translation in Walter Benjamin, *Reflections*, ed. Peter Demetz (New York, 1978).

Typography is to literature as musical performance is to composition: an essential act of interpretation, full of endless opportunities for insight or obtuseness. Much typography is far removed from literature, for language has many uses, including packaging and propaganda. Like music, it can be used to manipulate behavior and emotions. But this is not where typographers, musicians or other human beings show us their finest side. Typography at its best is a slow performing art, worthy of the same informed appreciation that we sometimes

give to musical performances, and capable of giving similar nourishment and pleasure in return.

The same alphabets and page designs can be used for a biography of Mohandas Gandhi and for a manual on the use and deployment of biological weapons. Writing can be used both for love letters and for hate mail, and love letters themselves can be used for manipulation and extortion as well as to bring delight to body and soul. Evidently there is nothing inherently noble and trustworthy in the written or printed word. Yet generations of men and women have turned to writing and printing to house and share their deepest hopes, perceptions, dreams and fears. It is to them, and not to the extortionist, that the typographer must answer.

1.2 TACTICS

1.2.1 *Read the text before designing it.*

The typographer's one essential task is to interpret and communicate the text. Its tone, its tempo, its logical structure, its physical size, all determine the possibilities of its typographic form. The typographer is to the text as the theatrical director to the script, or the musician to the score.

1.2.2 *Discover the outer logic of the typography in the inner logic of the text.*

A novel often purports to be a seamless river of words from beginning to end, or a series of unnamed scenes. Research papers, textbooks, cookbooks and other works of nonfiction rarely look so smooth. They are often layered with chapter heads, section heads, subheads, block quotations, footnotes, endnotes, lists and illustrative examples. Such features may be obscure in the manuscript, even if they are clear in the author's mind. For the sake of the reader, each requires its own typographic identity and form. Every layer and level of the text must be consistent, distinct, yet harmonious in form.

The first task of the typographer is therefore to read and understand the text; the second task is to analyze and map it. Only then can typographical interpretation begin.

If the text has many layers or sections, it may need not only heads and subheads but running heads as well, reappearing on

every page or two-page spread, to remind readers which intellectual neighborhood they happen to be visiting.

Novels seldom need such signposts, but they often require typographical markers of other kinds. Peter Mathiessen's novel *Far Tortuga* (New York, 1975; designed by Kenneth Miyamoto) uses two sizes of text, three different margins, free-floating block paragraphs and other typographical devices to separate thought, speech and action. Ken Kesey's novel *Sometimes a Great Notion* (New York, 1964) seems to flow like conventional prose, yet it shifts repeatedly in mid-sentence between roman and italic to distinguish what characters say to each other from what they say in silence to themselves.

In poetry and drama, a larger typographical palette is sometimes required. Some of Douglass Parker's translations from classical Greek and Dennis Tedlock's translations from Zuni use roman, italic, bold, small caps and full caps in various sizes to emulate the dynamic markings of music. Robert Massin's typographical performances of Eugène Ionesco's plays use intersecting lines of type, stretched and melted letters, inkblots, pictograms, and a separate typeface for each character. In the works of artists like Guillaume Apollinaire and Guy Davenport, boundaries between author and designer sometimes vanish. Writing merges with typography, and the text becomes its own illustration.

See for example Aristophanes, *Four Comedies* (Ann Arbor, MI, 1969); Dennis Tedlock, *Finding the Center* (Lincoln, NE, 1972); Eugène Ionesco, *La Cantatrice chauve* (Paris, 1964) and *Délire à deux* (Paris, 1966). There are samples of Massin's work in *Typographica* n.s. 11 (June 1965).

The typographer must analyze and reveal the inner order of the text, as a musician must reveal the inner order of the music he performs. But the reader, like the listener, should in retrospect be able to close her eyes and see what lies inside the words she has been reading. The typographic performance must reveal, not replace, the inner composition. Typographers, like other artists and craftsmen – musicians, composers and authors as well – must as a rule do their work and disappear.

1.2.3 *Make the visible relationship between the text and other elements (photographs, captions, tables, diagrams, notes) a reflection of their real relationship.*

If the text is tied to other elements, where do they belong? If there are notes, do they go at the side of the page, the foot of the page, the end of the chapter, the end of the book? If there are photographs or other illustrations, should they be embedded in the text or do they belong in a special section of their own? And

if the photographs have captions or credits or labels, should these be exhibited together with the photographs or confined to a separate section?

If there is more than one text – as in countless publications issued in Canada, Switzerland, Belgium and other multilingual countries – how will the separate but equal texts be arrayed? Will they run side by side to emphasize their equality (and perhaps to share in a single set of illustrations), or will they be printed back-to-back, to emphasize their distinctness?

No matter what their relation to the text, photos or maps must sometimes be grouped apart from it because they require a separate paper or different inks. If this is the case, what typographical cross-references will be required?

These and similar questions, which confront the working typographer on a daily basis, must be answered case by case. The typographic page is a map of the mind; it is frequently also a map of the social order from which it comes. And for better or for worse, minds and social orders change.

1.2.4 *Choose a typeface or a group of faces that will honor and elucidate the character of the text.*

This is the beginning, middle and end of the practice of typography: choose and use the type with sensitivity and intelligence. Aspects of this principle are explored throughout this book and considered in detail in chapters 6 and 7.

Letterforms have tone, timbre, character, just as words and sentences do. The moment a text and a typeface are chosen, two streams of thought, two rhythmical systems, two sets of habits, or if you like, two personalities, intersect. They need not live together contentedly forever, but they must not as a rule collide.

The root metaphor of typesetting is that the alphabet (or in Chinese, the entire lexicon) is a system of interchangeable parts. The word *form* can be surgically revised, instead of rewritten, to become the word *farm* or *firm* or *fort* or *fork* or *from*, or with a little more trouble, to become the word *pineapple*. The old compositor's typecase is a partitioned wooden tray holding hundreds of such interchangeable bits of information. These subsemantic particles, these bits – called *sorts* by letterpress printers – are letters cast on standardized bodies of metal, waiting to be assembled into meaningful combinations, then dispersed and reassembled in a different form. The compositor's typecase is

one of the primary ancestors of the computer – and it is no surprise that while typesetting was one of the last crafts to be mechanized, it was one of the first to be computerized.

But the bits of information handled by typographers differ in one essential respect from the computer programmer's bits. Whether the type is set in hard metal by hand, or in softer metal by machine, or in digital form on paper or film, every comma, every parenthesis, every *e*, and in context, even every empty space, has style as well as bald symbolic value. Letters are microscopic works of art as well as useful symbols. They mean what they *are* as well as what they say.

Typography is the art and craft of handling these doubly meaningful bits of information. A good typographer handles them in intelligent, coherent, sensitive ways. When the type is poorly chosen, what the words say linguistically and what the letters imply visually are disharmonious, dishonest, out of tune.

1.2.5 *Shape the page and frame the text block so that it honors and reveals every element, every relationship between elements, and every logical nuance of the text.*

Selecting the shape of the page and placing the type upon it is much like framing and hanging a painting. A cubist painting in an eighteenth-century gilded frame, or a seventeenth-century still-life in a slim chrome box, will look no sillier than a nineteenth-century English text set in a seventeenth-century French typeface asymmetrically positioned on a German modernist page.

If the text is long or the space is short, or if the elements are many, multiple columns may be required. If illustrations and text march side by side, does one take prominence over the other? And does the order or degree of prominence change? Does the text suggest perpetual symmetry, perpetual asymmetry, or something in between?

Again, does the text suggest the continuous unruffled flow of justified prose, or the continued flirtation with order and chaos evoked by flush-left ragged-right composition? (The running heads and sidenotes on the odd-numbered pages of this book are set flush left, ragged right. On the even numbered pages, they are ragged left. Leftward-reading alphabets, like Arabic and Hebrew, are perfectly at home in ragged-left text, but with rightward-reading alphabets like Latin, Greek or Thai,

ragged-left setting emphasizes the end, not the beginning, of the line. This makes it a poor choice for extended composition.)

Shaping the page goes hand in hand with choosing the type, and both are permanent typographical preoccupations. The subject of page shapes and proportions is addressed in greater detail in Chapter 8.

Tactics

1.2.6 *Give full typographical attention even to incidental details.*

Some of what a typographer must set, like some of what any musician must play, is simply passage work. Even an edition of Plato or Shakespeare will contain a certain amount of routine text: page numbers, scene numbers, textual notes, the copyright claim, the publisher's name and address, and the hyperbole on the jacket, not to mention the passage work or background writing that is implicit in the text itself. But just as a good musician can make a heart-wrenching ballad from a few banal words and a trivial tune, so the typographer can make poignant and lovely typography from bibliographical paraphernalia and textual chaff. The ability to do so rests on respect for the text as a whole, and on respect for the letters themselves.

Perhaps the rule should read: Give full typographical attention *especially* to incidental details.

1.3 SUMMARY

There are always exceptions, always excuses for stunts and surprises. But perhaps we can agree that, as a rule, typography should perform these services for the reader:

- invite the reader into the text;
- reveal the tenor and meaning of the text;
- clarify the structure and the order of the text;
- link the text with other existing elements;
- induce a state of energetic repose, which is the ideal condition for reading.

While serving the reader in this way, typography, like a musical performance or a theatrical production, should serve two other ends. It should honor the text for its own sake – always assuming that the text is worth a typographer's trouble – and it should honor and contribute to its own tradition: that of typography itself.

RHYTHM & PROPORTION

2.1 HORIZONTAL SPACE

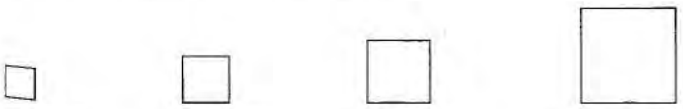
An ancient metaphor: thought is a thread, and the raconteur is a spinner of yarns – but the true storyteller, the poet, is a weaver. The scribes made this old and audible abstraction into a new and visible fact. After long practice, their work took on such an even, flexible texture that they called the written page a *textus*, cloth.

The typesetting device, whether it happens to be a computer or a composing stick, functions like a loom. And the typographer, like the scribe, normally aims to weave the text as evenly as possible. Good letterforms are designed to give a lively, even texture, but careless spacing of letters, lines and words can tear this fabric apart.

Another ancient metaphor: the density of texture in a written or typeset page is called its *color*. This has nothing to do with red or green ink; it refers only to the darkness or blackness of the letterforms in mass. Once the demands of legibility and logical order are satisfied, *evenness of color* is the typographer's normal aim. And color depends on four things: the design of the type, the spacing between the letters, the spacing between the words, and the spacing between the lines. None is independent of the others.

2.1.1 *Define the word space to suit the size and natural letterfit of the font.*

Type is normally measured in picas and points (explained in detail on p 236), but horizontal spacing is measured in *ems*, and the em is a sliding measure. One em is a distance equal to the type size. In 6 point type, an em is 6 points; in 12 pt type it is 12 points, and in 60 pt type it is 60 points. Thus a one-em space is *proportionately* the same in any size.



Typesetting machines generally divide the em into units. Ems of 18, 36 or 54 units, for example, are commonly found in the older machines. In newer devices, the em may be a thousand units. Typographers are more likely to divide the em into simple fractions: half an em, a third of an em, and so on, knowing that the unit value of these fractions will vary from one machine to the next. Half an em is called an *en*.

Horizontal Space

If text is set ragged right, the *word space* (the space between words) can be fixed and unchanging. If the text is *justified* (set flush left and right, like the text in this book), the word space must be elastic. In either case, the size of the ideal word space varies from one circumstance to another, depending on factors such as letterfit, type color and size. A loosely fitted or bold face will need a larger interval between the words. At larger sizes, when letterfit is tightened, the spacing of words can be tightened as well. For a normal text face in a normal text size, a typical value for the word space is a quarter of an em, which can be written M/4. (A quarter of an em is typically about the same as, or slightly more than, the set-width of the letter t.)

Language has some effect on the word space as well. In highly inflected languages, such as Latin, most word boundaries are marked by grammatical tags, and a smaller space is therefore sufficient. In English and other uninflected languages, good word spacing makes the difference between a line that has to be deciphered and a line that can be efficiently read.

If the text is justified, a reasonable *minimum* word space is a fifth of an em (M/5), and M/4 is a good average to aim for. A reasonable *maximum* in justified text is M/2. If it can be held to M/3, so much the better. But for bold or loosely fitted faces, or text set in a small size, M/3 is often a better average to aim for, and a better minimum is M/4. In a line of widely letterspaced capitals, a word space of M/2 or more may be required.

2.1.2 *Choose a comfortable measure.*

Anything from 45 to 75 characters is widely regarded as a satisfactory length of line for a single-column page set in a serifed text face in a text size. The 66-character line (counting both letters and spaces) is widely regarded as ideal. For multiple-column work, a better average is 40 to 50 characters.

If the type is well set and printed, lines of 85 or 90 characters will pose no problem in discontinuous texts, such as bibliographies, or, with generous leading, in footnotes. But even with generous leading, a line that averages more than 75 or 80 characters is likely to be too long for continuous reading.

A reasonable working minimum for justified text in English is the 40-character line. Shorter lines may compose perfectly well with sufficient luck and patience, but in the long run, justified lines averaging less than 38 or 40 characters will lead to white acne or pig bristles: a rash of erratic and splotchy word spaces or an epidemic of hyphenation. When the line is short, the text should be set ragged right. In large doses, even ragged-right composition may look anorexic if the line falls below 30 characters, but in small and isolated patches – ragged marginal notes, for example – the minimum line (if the language is English) can be as little as 12 or 15 characters.

Rhythm and Proportion

These line lengths are in every case averages, and they include empty spaces and punctuation as well as letters. The simplest way of computing them is with a copyfitting table like the one on page 29. Measure the length of the basic lowercase alphabet – abcdefghijklmnopqrstuvwxyz – in any font and size you are considering, and the table will tell you the average number of characters to expect on a given line. In most text faces, the 10 pt roman alphabet will run between 120 and 140 points long, but a 10 pt *italic* alphabet might be 100 points long or even less, while a 10 pt bold might run to 160. The 12 pt alphabet is, of course, about 1.2 times the length of the 10 pt alphabet – but not exactly so unless it is generated from the same master design and the letterfit is unchanged.

On a conventional book page, the *measure,* or length of line, is usually around 30 times the size of the type, but lines as little as 20 or as much as 40 times the type size fall within the expectable range. If, for example, the type size is 10 pt, the measure might be around $30 \times 10 = 300$ pt, which is $300/12 = 25$ picas. A typical lowercase alphabet length for a 10 pt text font is 128 pt, and the copyfitting table tells us that such a font set to a 25-pica measure will yield roughly 65 characters per line.

2.1.3 *Set ragged if ragged setting suits the text and the page.*

In justified text, there is always a trade-off between evenness of word spacing and frequency of hyphenation. The best available compromise will depend on the nature of the text as well as on the specifics of the design. Good compositors like to avoid con-

secutive hyphenated line-ends, but frequent hyphens are better than sloppy spacing, and ragged setting is better yet.

Narrow measures – which prevent good justification – are commonly used when the text is set in multiple columns. Setting ragged right under these conditions will lighten the page and decrease its stiffness, as well as preventing an outbreak of hyphenation.

Horizontal Space

Many unserifed faces look best when set ragged no matter what the length of the measure. And monospaced fonts, which are common on typewriters, always look better set ragged, in standard typewriter style. A typewriter (or a computer-driven printer of similar quality) that justifies its lines in imitation of typesetting is a presumptuous machine, mimicking the outer form instead of the inner truth of typography.

❧ When setting ragged right from a computer, take a moment to refine your software's understanding of what constitutes an honest rag. Many programs are predisposed to invoke a minimum as well as a maximum line. If permitted to do so, they will hyphenate words and adjust spaces regardless of whether they are ragging or justifying the text. Ragged setting under these conditions produces an orderly ripple down the righthand side, making the text look like a neatly pinched piecrust. This approach combines the worst features of justification with the worst features of ragged setting, while eliminating the principal virtues of both. Unless the measure is excruciatingly narrow, it is usually better to set a hard rag. This means a fixed word space, no minimum line, and no hyphenation beyond what is inherent in the text. In a hard rag, hyphenated linebreaks may occur in words like *self-consciousness,* which are hyphenated anyway, but they can only occur with manual intervention in words like *hyphenation* or *pseudosophisticated,* which are not.

2.1.4 *Use a single word space between sentences.*

In the nineteenth century, which was a dark and inflationary age in typography and type design, many compositors were encouraged to stuff extra space between sentences. Generations of twentieth-century typists were then taught to do the same, by hitting the spacebar twice after every period. Your typing as well as your typesetting will benefit from unlearning this quaint Victorian habit. As a general rule, no more than a single space is

AVERAGE CHARACTER COUNT PER LINE

	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
80	40	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160
85	38	45	53	60	68	76	83	91	98	106	113	121	129	136	144	151
90	36	43	50	57	64	72	79	86	93	100	107	115	122	129	136	143
95	34	41	48	55	62	69	75	82	89	96	103	110	117	123	130	137
100	33	40	46	53	59	66	73	79	86	92	99	106	112	119	125	132
105	32	38	44	51	57	63	70	76	82	89	95	101	108	114	120	127
110	30	37	43	49	55	61	67	73	79	85	92	98	104	110	116	122
115	29	35	41	47	53	59	64	70	76	82	88	94	100	105	111	117
120	28	34	39	45	50	56	62	67	73	78	84	90	95	101	106	112
125	27	32	38	43	48	54	59	65	70	75	81	86	91	97	102	108
130	26	31	36	41	47	52	57	62	67	73	78	83	88	93	98	104
135	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
140	24	29	34	39	44	48	53	58	63	68	73	77	82	87	92	97
145	23	28	33	37	42	47	51	56	61	66	70	75	80	84	89	94
150	23	28	32	37	41	46	51	55	60	64	69	74	78	83	87	92
155	22	27	31	36	40	45	49	54	58	63	67	72	76	81	85	90
160	22	26	30	35	39	43	48	52	56	61	65	69	74	78	82	87
165	21	25	30	34	38	42	46	51	55	59	63	68	72	76	80	84
170	21	25	29	33	37	41	45	49	53	57	62	66	70	74	78	82
175	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80
180	20	23	27	31	35	39	43	47	51	55	59	62	66	70	74	78
185	19	23	27	30	34	38	42	46	49	53	57	61	65	68	72	76
190	19	22	26	30	33	37	41	44	48	52	56	59	63	67	70	74
195	18	22	25	29	32	36	40	43	47	50	54	58	61	65	68	72
200	18	21	25	28	32	35	39	42	46	49	53	56	60	63	67	70
210	17	20	23	27	30	33	37	40	43	47	50	53	57	60	63	67
220	16	19	22	25	29	32	35	38	41	45	48	51	54	57	60	64
230	15	18	21	24	27	30	33	36	40	43	46	49	52	55	58	61
240	15	17	20	23	26	29	32	35	38	41	44	46	49	52	55	58
250	14	17	20	22	25	28	31	34	36	39	42	45	48	50	53	56
260	14	16	19	22	24	27	30	32	35	38	41	43	46	49	51	54
270	13	16	18	21	23	26	29	31	34	36	39	42	44	47	49	52
280	13	15	18	20	23	25	28	30	33	35	38	40	43	45	48	50
290	12	15	17	20	22	24	27	29	32	34	37	39	41	44	46	49
300	12	14	17	19	21	24	26	28	31	33	35	38	40	42	45	47
320	11	13	16	18	20	22	25	27	29	31	34	36	38	40	43	45
340	10	13	15	17	19	21	23	25	27	29	32	34	36	38	40	42
360	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40

Read down, in the left column: lowercase alphabet length in points. *Read across,* in the top row: line length in picas.

required after a period, a colon or any other mark of punctuation. Larger spaces (e.g., en spaces) *replace* punctuation.

The rule is usually altered, however, when setting classical Latin and Greek, romanized Sanskrit, phonetics or other kinds of texts in which sentences begin with lowercase letters. In the absence of a capital, a full *en space* (M/2) between sentences will generally be welcome.

Horizontal Space

2.1.5 *Add little or no space within strings of initials.*

Names such as W.B. Yeats and J.C.L. Prillwitz need only hair spaces or no spaces at all after the intermediary periods. A normal word space follows the *last* period in the string.

2.1.6 *Letterspace all sequences of capitals and small caps.*

Acronyms such as CIA and PLO are frequent in some texts. So are abbreviations such as Fr William Ong, SJ, or 525 BC. The normal value for letterspacing these sequences of small or full caps is 5% to 10% of the type size.

With digital fonts, it is a simple matter to assign extra width to all small capitals, so that letterspacing occurs automatically. The width values of full caps are normally based on the assumption that they will be used in conjunction with the lower case, but letterspacing can still be automated through the use of kerning tables (see p 32).

In titles and headings, extra letterspacing is usually desirable. Justified lines of letterspaced capitals are generally set by inserting a normal word space (M/5 to M/4) between letters. This corresponds to letterspacing of 20% to 25% of the type size. But the extra space between letters will also require more space between lines. A Renaissance typographer setting a multiline head in letterspaced text-size capitals would normally set blanks between the lines: the hand compositor's equivalent of the keyboard operator's extra hard return, or double spacing.

There is no generalized optimum value for letterspacing capitals in titles or display lines. The effective letterspacing of caps in good classical inscriptions and later manuscripts ranges from 5% to 100% of the nominal type size. The quantity of space is far less important than its balance. Sequences like LA or AVA may need no extra space at all, while sequences like NN and HIH beg to be pried open.

WAVADOPATTIMMILTL

WAVADOPATTIMMILTL

Letterspaced caps, above, and unletterspaced, below

2.1.7 *Don't letterspace normal lower case.*

Rhythm and Proportion

A man who would letterspace lower case would steal sheep, Frederic Goudy liked to say. If this wisdom needs updating, it is chiefly to add that a woman who would letterspace lower case would steal sheep as well.

Nevertheless, like every rule, this one extends only as far as its rationale. The reason for not letterspacing lower case is that it hampers legibility. But there are some lowercase alphabets to which this principle doesn't apply.

Headings set in exaggeratedly letterspaced, condensed, unserifed capitals are now a hallmark, if not a cliché, of postmodernist typography. In this context, secondary display can be set perfectly well in more modestly letterspaced, condensed sanserif lower case. Moderate letterspacing can make a face such as lowercase Univers bold condensed *more* legible rather than less.

wharves and wharfingers

Lowercase Univers bold condensed, letterspaced 10%

It would be possible, in fact, to make a detailed chart of lowercase letterforms, plotting their inherent resistance to letterspacing. At the top of the list (most unsuitable for letterspacing) would be Renaissance italics, such as Arrighi, whose structure strongly implies an actual linkage between one letter and the next. A little farther along would be Renaissance romans. Still farther along, we would find faces like Syntax, which echo the forms of Renaissance roman but lack the serifs. (Syntax is used for the captions in this book.) Around the middle of the list, we would find other unserifed faces, such as Helvetica, in which nothing more than wishful thinking bonds the letters to each other. Bold condensed sanserifs would appear at the bottom of the list. Letterspacing will always sabotage a Renaissance roman or italic. But when we come to the other extreme, the

faces with no calligraphic content, letterspacing of lowercase letters can sometimes be of genuine benefit.

2.1.8 *Kern consistently and modestly or not at all.*

Horizontal Space

Inconsistencies in letterfit are inescapable, given the forms of the Latin alphabet, and small irregularities are after all essential to the legibility of roman type. *Kerning* – altering the space between selected pairs of letters – can increase consistency of spacing in a word like Washington or Toronto, where the combinations *Wa* and *To* are kerned. But names like Wisconsin, Tübingen, Tbilisi and Los Alamos, as well as common words like The and This, remain more or less immune to alteration.

Hand compositors rarely kern text sizes, because their kerning pairs must be manually fitted, one at a time. Computerized typesetting makes extensive kerning easy, but judgement is still required, and the computer does not make good judgement any easier to come by. Too little kerning is preferable to too much, and inconsistent kerning is worse than none.

In digital type, as in foundry type, each letter has a standard width of its own. But computerized typesetting systems can modify these widths in many ways. Digital fonts are generally kerned through the use of *kerning tables,* which can specify a reduction or increase in spacing for every possible sequence of letters, numbers or symbols. By this means, space can automatically be added to combinations like HH and removed from combinations like Ty. Prefabricated kerning tables are now widely available, but a different table is required for every face, and the tables often require extensive editing to suit individual styles and requirements. If you use an automatic kerning program, test it thoroughly before trusting its decisions, and take the time to repair its inevitable shortcomings.

Kerning tables generally subtract space from the following combinations: Av, Aw, Ay, 'A, 'A, L', and all combinations in which the first element is T, V, W or Y and the second element is a, c, d, e, g, m, n, o, p, q, r, s, u, v, w, x, y or z. Not all of these combinations occur in English, but any kerning system should accommodate names like Tchaikovsky, Tmolos and Ysaÿe.

Space is generally added to f', f), f], f?, f!, (*f*, [*f*, (J and [J. In some italics, space must also be added to *gg* and *gy*. If your text includes them, other sequences – *gf, gj, qf, qj,* for instance – may need attention as well.

Especially at larger sizes, it is common to kern combinations involving commas and periods, such as r, / r. / v, / v. / w, / w. / y, / y. But use care when kerning combinations such as F. / P. / T. / V. Capitals need their space, and some combinations are easy to misread. P.F. Barnum may be mistaken for R E Barnum if enthusiastically kerned.

Rhythm and Proportion

Numbers (which are often omitted from kerning tables) are often worth kerning, even if you choose to kern nothing else. The digit 1 is usually thinner in form than the other numbers, but it is usually assigned the same set-width, so columns of typeset figures will align. Many fonts include an alternative version of the 1 (the so-called 'fitted one') with a narrower set-width, intended for use in text. Other combinations of digits may need more subtle adjustment, and combinations of 4, 6, 9 and 0 with the en dash generally call for extra space.

Unkerned, left, and kerned, right

Whatever kerning you do, make sure it does not result in collisions with floating accents. Wolf can be kerned more than Wölfflin in many faces, and Tennyson more than Tête-a-tête. Also beware the composite effect of sequential kerns. The apostrophes in L'Hôtel and D'Artagnan can be brought up close, but in L'Anse aux Meadows, two close kerns in a row can produce a collision.

2.1.9 *Don't alter the widths or shapes of letters without cause.*

Type design is an art practiced by few and mastered by fewer – but font-editing software makes it possible for anyone to alter in a moment the widths and shapes of letters to which an artist may have devoted decades of study, years of inspiration and a rare concentration of skill. The power to destroy such a type designer's work should be used with caution. And arbitrarily condensing or expanding letterforms is the poorest of all methods for fitting uneditable copy into unalterable space.

On many fonts, characters such as ? ! ; : need greater width than manufacturers have given them, but letter widths should be altered for one purpose only: to improve the set of the type.

2.1.10 *Don't stretch the space until it breaks.*

Horizontal Space

Lists, such as contents pages and recipes, are opportunities to build architectural structures in which the space between the elements both separates and binds. The two favorite ways of destroying such an opportunity are setting great chasms of space that the eye cannot leap without help from the hand, and setting unenlightening rows of dots (*dot leaders*, they are called) that force the eye to walk the width of the page like a prisoner being escorted back to its cell.

Introduction 7
Chapter 1 The Sex of Centaurs 11
Chapter 2 Poliphilo's Dream 43

Prologue • *page 5*
Points of Possible Agreement • *page 9*
Irreconcilable Differences • *page 11*
Conclusion • *page 163*
Index • *page 164*

Two among many ways of handling a list. Setting the titles flush left and the numbers flush right, with or without dot leaders, would only muffle the information.

2.2 VERTICAL SPACE

2.2.1 *Choose a basic leading that suits the typeface, text and measure.*

Time is divisible into any number of increments. So is space. But for working purposes, time in music is divided into a few proportional intervals: halves, quarters, eighths, sixteenths and so on. And time in music is measured. Add a quarter note to a bar whose time is already accounted for and, somewhere nearby, the equivalent of that quarter note must come out. Phrasing and rhythm can move in and out of phase – as they do in the singing of Billie Holiday and the trumpet solos of Miles Davis – but the force of blues phrasing and syncopation vanishes if the beat is actually lost.

Space in typography is like time in music. It is infinitely divisible, but a few proportional intervals can be much more useful than a limitless choice of arbitrary quantities.

Rhythm and Proportion

The metering of horizontal space is accomplished almost unconsciously in typography. You choose and prepare a font, and you choose a measure (the width of the column). When you set the type, the measure fills with the varied rhythm of repeating letter shapes, which are music to the eye.

Vertical space is metered in a different way. You must choose not only the overall measure – the depth of the column or page – but also a basic rhythmical unit. This unit is the leading, which is the distance from one baseline to the next.

Eleven-point type *set solid* is described as 11/11. The theoretical face of the type is 11 points high (from the top of *d* to the bottom of *p*, if the type is full on the body), and the distance from the baseline of line one to the baseline of line two is also 11 points. Add two points of lead (interlinear space), and the type is set 11/13. The type size has not changed, but the distance from baseline to baseline has increased to 13 points, and the type has more room to breathe.

The text of the book you are reading, to take an example, is set 10/12 × 21. This means that the type size is 10 pt, the added lead is 2 pt, giving a total leading of 12 pt, and the line length is 21 picas.

A short burst of advertising copy or a title might be set with negative leading (24/18, for example), so long as the ascenders and descenders don't collide:

this is an example
of negative leading

Continuous text is scarcely ever set with negative leading, and only a few text faces read well when set solid. Most text requires positive leading. Settings such as 9/11, 10/12, 11/13 and 12/15 are routine. Longer measures need more lead than short ones. Dark faces need more lead than light ones. Large sizes need more lead than smaller ones. Faces like Bauer Bodoni, with substantial color and a rigid vertical axis, need much more lead than faces like Bembo, whose color is light and whose axis is based on the writing hand. And unserifed faces often need more lead (or a shorter line) than their serifed counterparts.

Extra leading is also generally welcome where the text is

thickened by superscripts, subscripts, mathematical expressions, or the frequent use of full capitals. A text in German would ideally have a little more lead than the same text in Latin or French, purely because of the increased frequency of capitals.

2.2.2 *Add and delete vertical space in measured intervals.*

Vertical Space

For the same reason that the tempo must not change arbitrarily in music, leading must not change arbitrarily in type.

Pages and columns are set most often to uniform depth, but ragged depths are better in some situations. A collection of short texts, such as catalog entries, set in multiple-column pages, is likely to look better and read more easily if the text is not sawed into columns of uniform depth. A collection of short poems is bound to generate pages of varying depth as well.

Continuous prose offers no such excuse for variation. It is therefore usually set in pages of uniform depth, designed in symmetrical pairs. The lines and blocks of text on facing pages in this format should align, and the lines on the front and back of the leaf (the recto and verso pages) should align as well. Typographers check their reproduction proofs by holding them up to the light in pairs, to see that the text and crop marks match from page to page. Press proofs are checked in the same way, by holding them up to the light to see that textblocks *back each other up* when the sheet is printed on both sides.

Headings, subheads, block quotations, footnotes, illustrations, captions and other intrusions into the text create syncopations and variations against the base rhythm of regularly leaded lines. These variations can and should add life to the page, but the main text should also return after each variation precisely on beat and in phase. This means that the total amount of vertical space consumed by each departure from the main text should be an even multiple of the basic leading. If the main text runs 11/13, intrusions to the text should equal some multiple of 13 points: 26, 39, 52, 65, 78, 91, 104 and so on.

Subheads in this book are leaded in the simplest possible way, with a *white line* (that is, in keyboard terms, a hard return) before and after. They could just as well be leaded asymmetrically, with more space above than below, so long as the total additional lead is equivalent to an even number of text lines.

If you happen to be setting a text 11/13, subhead possibilities include the following:

- subheads in 11/13 small caps, with 13 pt above the head and 13 pt below;
- subheads in 11/13 bold *u&lc* (upper and lower case), with 8 pt above the head and 5 pt below, since 8 + 5 = 13;
- subheads in 11/13 caps with 26 pt above and 13 pt below;
- one-line subheads in 14/13 italic u&lc, with 16 pt above the head and 10 pt below. (The negative leading is merely to minimize coding in this case. If the heads are one line long, no cramping will occur.)

Rhythm and Proportion

2.3 PARAGRAPHS & BLOCK QUOTATIONS

2.3.1 *Set opening paragraphs flush left.*

The function of a paragraph indent is to mark a pause, setting the paragraph apart from what precedes it. If a paragraph is preceded by a title or subhead, the indent is superfluous and can therefore be omitted, as it is here.

2.3.2 *In continuous text, mark all paragraphs after the first with an indent of at least one em.*

Typography like other arts, from cooking to choreography, involves a balance between the familiar and the unfamiliar, the dependably consistent and the unforeseen. Typographers generally take pleasure in the unpredictable length of the paragraph while accepting the simple and reassuring consistency of the paragraph indent. The prose paragraph and its verse counterpart, the stanza, are basic units of linguistic thought and literary style. The typographer must articulate them enough to make them clear, yet not so strongly that the form instead of the content steals the show. If the units of thought, or the boundaries between thoughts, look more important than the thoughts themselves, the typographer has failed.

❧ Ornaments can be placed in the paragraph indents, but few texts actually profit from ornamentation.

Paragraphs can also be marked, as this one is, by drop lines, but dropline paragraphs grow tiresome in long texts. They also increase the labor of revisions and corrections. ¶ Fleurons, boxes and bullets can be used to mark the breaks in a stream of continuous text, sometimes with excellent results. This format is more economical of