

The Elements of Typographic Style

version 3.0

Robert Bringhurst



¶ THE ELEMENTS *of* TYPOGRAPHIC STYLE

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¶ HARTLEY & MARKS, *Publishers*

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by Robert Bringhurst

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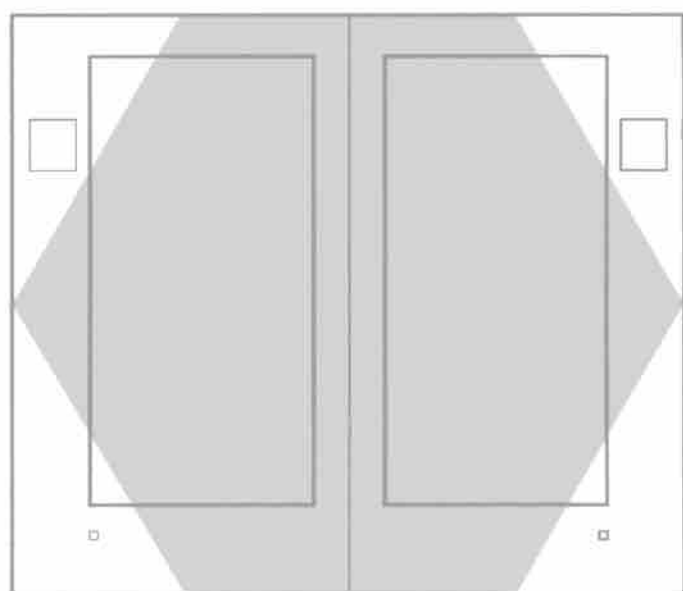
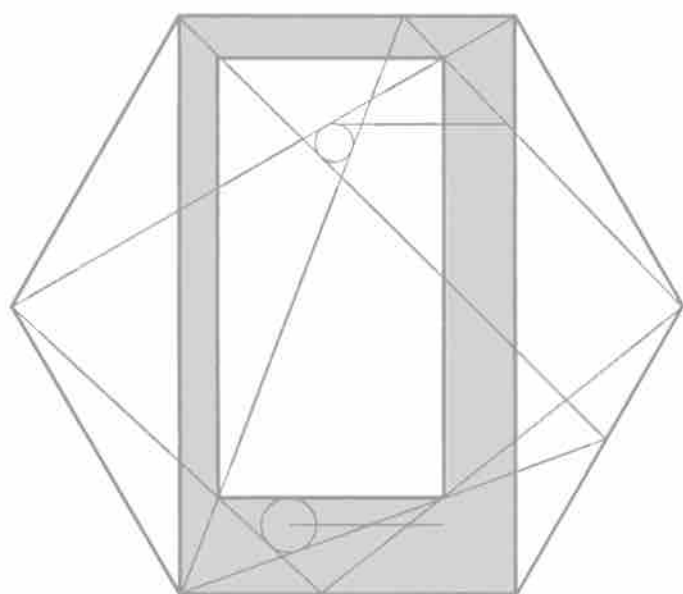
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*for my colleagues & friends
in the worlds of letters:
writers & editors,
type designers, typographers,
printers & publishers,
shepherding words and books
on their lethal and innocent ways*



A book is a flexible mirror of the mind and the body. Its overall size and proportions, the color and texture of the paper, the sound it makes as the pages turn, and the smell of the paper, adhesive and ink, all blend with the size and form and placement of the type to reveal a little about the world in which it was made. If the book appears to be only a paper machine, produced at their own convenience by other machines, only machines will want to read it.

8.1 ORGANIC, MECHANICAL & MUSICAL PROPORTION

A page, like a building or a room, can be of any size and proportion, but some are distinctly more pleasing than others, and some have quite specific connotations. A brochure that unfolds and refolds in the hand is intrinsically different from a formal letter that lies motionless and flat, or a handwritten note that folds into quarters and comes in an envelope of a different shape and size. All of these are different again from a book, in which the pages flow sequentially in pairs.

Much typography is based, for the sake of convenience, on standard industrial paper sizes, from 35 × 45 inch press sheets to 3½ × 2 inch conventional business cards. Some formats, such as the booklets that accompany compact discs, are condemned to especially rigid restrictions of size. But many typographic projects begin with the opportunity and necessity of selecting the dimensions of the page.

There is rarely a free choice. A page size of 12 × 19 inches, for example, is likely to be both inconvenient and expensive because it is just in excess of 11 × 17, which is a standard industrial unit. And a brochure that is 5 × 9 inches, no matter how handsome, might be unacceptable because it is too wide to fit into a standard business envelope (4 × 9½). But when the realm of practicality has been established, and it is known that the page must fall within certain limits, how is one to choose? By taking whatever is easiest, or biggest, or whatever is the most convenient standard size? By trusting to blind instinct?

Instinct, in matters such as these, is largely memory in disguise. It works quite well when it is trained, and poorly otherwise.

Two very useful works on natural form and structure are D'Arcy Thompson, *On Growth and Form* (rev. ed., 1942) and Peter S. Stevens, *Patterns in Nature* (1974). An equally important book on structures made by humans is Dorothy Washburn & Donald Crowe, *Symmetries of Culture: Theory and Practice of Plane Pattern Analysis* (1988).

But in a craft like typography, no matter how perfectly honed one's instincts are, it is useful to be able to calculate answers exactly. History, natural science, geometry and mathematics are all relevant to typography in this regard – and can all be counted on for aid.

Scribes and typographers, like architects, have been shaping visual spaces for thousands of years. Certain proportions keep recurring in their work because they please the eye and the mind, just as certain sizes keep recurring because they are comfortable to the hand. Many of these proportions are inherent in simple geometric figures – equilateral triangle, square, regular pentagon, hexagon and octagon. And these proportions not only seem to please human beings in many different centuries and countries, they are also prominent in nature far beyond the human realm. They occur in the structures of molecules, mineral crystals, soap bubbles, flowers, as well as books and temples, manuscripts and mosques.

The tables on pages 148–149 list a number of page proportions derivable from simple geometric figures. These proportions occur repeatedly in nature, and pages that embody them recur in manuscripts and books from Renaissance Europe, T'ang and S'ong dynasty China, early Egypt, precolumbian Mexico and ancient Rome. It seems that the beauty of these proportions is more than a matter of regional taste or immediate fashion. They are therefore useful for two purposes. Working and playing with them is a way of developing good typographic instincts, and they serve as useful references in analyzing old designs and calculating new ones.

For comparison, several other proportions are included in the tables. There are several simple numerical ratios, several standard industrial sizes, and several proportions involving four irrational numbers important in the analysis of natural structures and processes. These numbers are $\pi = 3.14159\dots$, which is the circumference of a circle whose diameter is one; $\sqrt{2} = 1.41421\dots$, which is the diagonal of a unit square; $e = 2.71828\dots$, which is the base of the natural logarithms; and $\phi = 1.61803\dots$, a number discussed in greater detail on page 155. Certain of these proportions reappear in the structure of the human body; others appear in musical scales. Indeed, one of the simplest of all systems of page proportions is based on the familiar intervals of the diatonic scale. Pages that embody these basic musical proportions have been in common use in Europe for more than a thousand years.

Sizing and spacing type, like composing and performing music or applying paint to canvas, is largely concerned with intervals and differences. As the texture builds, precise relationships and very small discrepancies are easily perceived. Establishing the overall dimensions of the page is more a matter of limits and sums. In this realm, it is usually sufficient, and often it is better, if structural harmony is not so much enforced as implied. That is one of the reasons typographers tend to fall in love with books. The pages flex and turn; their proportions ebb and flow against the underlying form. But the harmony of that underlying form is no less important, and no less easy to perceive, than the harmony of the letterforms themselves.

*Shaping
the
Page*

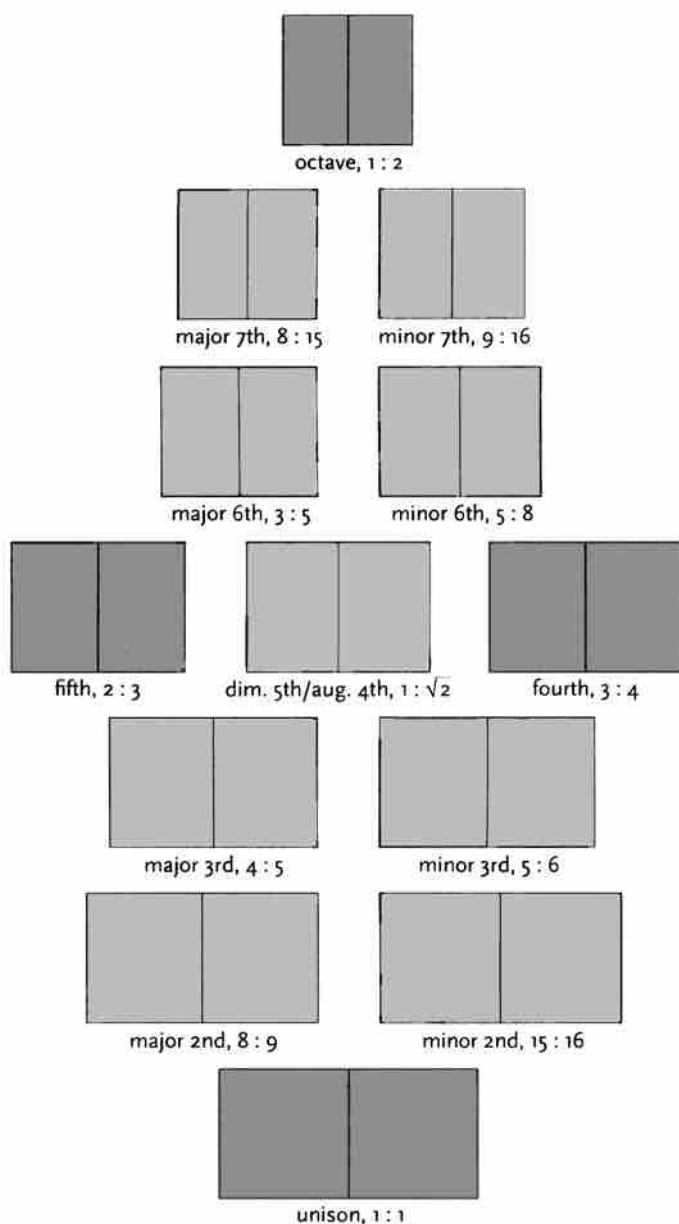
The page is a piece of paper. It is also a visible and tangible proportion, silently sounding the thoroughbass of the book. On it lies the textblock, which must answer to the page. The two together – page and textblock – produce an antiphonal geometry. That geometry alone can bond the reader to the book. Or conversely, it can put the reader to sleep, or put the reader's nerves on edge, or drive the reader away.

The textblock is known in Chinese as *yèxin* (頁·心), a useful phrase. *Yè* means page; *xin* means heart and mind.

Arithmetic and mathematics also drive away some readers, and this is a chapter peppered with both. Readers may well ask whether all this is necessary, merely in order to choose where some letters should sit on a piece of paper and where the paper itself should be trimmed. The answer, naturally, is no. It is not in the least necessary to understand the mathematics in order to perform the actions that the math describes. People walk and ride bicycles without mathematical analyses of these complex operations. The chambered nautilus and the snail construct perfect logarithmic spirals without any need of logarithmic tables, sliderules or the theory of infinite series. The typographer likewise can construct beautiful pages without knowing the meaning of symbols like π or ϕ , and indeed without ever learning to add and subtract, if he has a well-educated eye and knows which buttons to push on the calculator and keyboard.

The mathematics are not here to impose drudgery upon anyone. On the contrary, they are here entirely for pleasure. They are here for the pleasure of those who like to examine what they are doing, or what they might do or have already done, perhaps in the hope of doing it still better. Those who prefer to act directly at all times, and to leave the analysis to others, may be content in this chapter to study the pictures and skim the text.

*Chromatic
Scale
of Page
Proportions*



Page proportions corresponding to the chromatic scale, from unison (at the bottom) to octave (at the top). The musical correlations are shown in detail on the facing page.

The
Golden
Section



HIS PARAGRAPH, for example, is indented according to the golden section. The indent is to the remainder of the line as that remainder is to the full text measure. Here the measure is 21 picas, and the indent is 38.2% of that, which is to say 8 picas.

The amount of *sinkage* (the extra white space allowed at the top of the page) is 7 lines (here equal to 7 picas). Add the extra pica of white space created by the indent itself, and you have an imaginary 8-pica square of empty space in the upper left corner of the textblock.

The size of the elevated cap is related in turn to the size of the indent and the sinkage. Eight picas is 96 pt, and 61.8% of that is 59.3 pt. But the relationship between 59 or 60 pt type and an 8-pica indent would be difficult to perceive, because a 60 pt letter is not visibly 60 pt high. The initial used has an actual 60 pt cap height instead. Depending on the face, such a letter could be anywhere from 72 to 100 pt nominal size; here it is 84 pt Castellar.

8.3 PROPORTIONS OF THE EMPTY PAGE

8.3.1 *Choose inherently satisfying page proportions in preference to stock sizes or arbitrary shapes.*

The proportions of a page are like an interval in music. In a given context, some are consonant, others dissonant. Some are familiar; some are also inescapable, because of their presence in the structures of the natural as well as the man-made world. Some proportions also seem particularly linked to living things. It is true that wastage is often increased when an $8\frac{1}{2} \times 11$ inch page is trimmed to $7\frac{3}{4} \times 11$ or $6\frac{3}{4} \times 11$, or when a 6×9 book page is narrowed to $5\frac{5}{8} \times 9$. But an organic page looks and feels different from a mechanical page, and the shape of the page itself will provoke certain responses and expectations in the reader, independently of whatever text it contains.

8.4 THE TEXTBLOCK

8.4.1 *If the text is meant to invite continuous reading, set it in columns that are clearly taller than wide.*

Horizontal motion predominates in alphabetic writing, and for beginners, it predominates in reading. But vertical motion predominates in reading for those who have really acquired the skill. The tall column of type is a symbol of fluency, a sign that the typographer does not expect the reader to have to puzzle out the words.

The very long and very narrow columns of newspapers and magazines, however, have come to suggest disposable prose and quick, unthoughtful reading. A little more width not only gives the text more presence; it implies that it might be worth savoring, quoting and reading again.

8.4.2 *Shape the textblock so that it balances and contrasts with the shape of the overall page.*

The proportions that are useful for the shapes of pages are equally useful in shaping the textblock. This is not to say that the proportions of the textblock and the page should be the same. They often were the same in medieval books. In the Renaissance, many typographers preferred a more polyphonic page, in which the proportions of page and textblock differ. But it is pointless for them to differ unless, like intervals in music, they differ to a clear and purposeful degree.

For all the beauty of pure geometry, a perfectly square block of type on a perfectly square page with even margins all around is a form unlikely to encourage reading. Reading, like walking, involves navigation – and the square block of type on a square block of paper is short of basic landmarks and clues. To give the reader a sense of direction, and the page a sense of liveliness and poise, it is necessary to break this inexorable sameness and find a new balance of another kind. Some space must be narrow so that other space may be wide, and some space emptied so that other space may be filled.

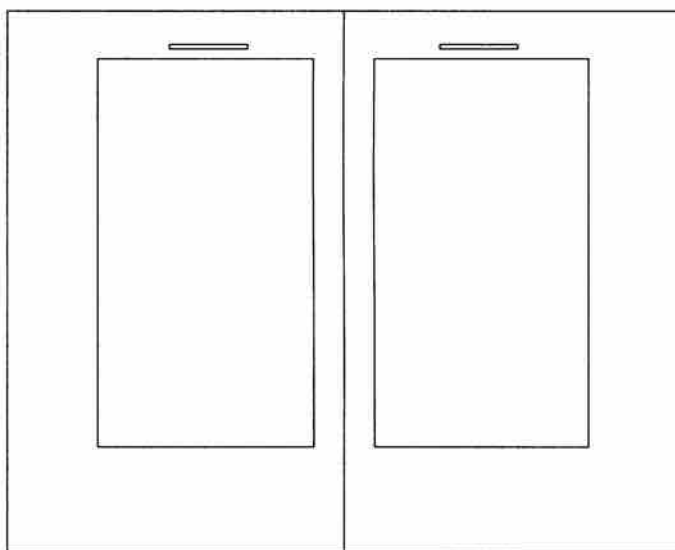
In the simple format shown overleaf, a page whose proportions are 1 : 1.62 (the golden section) carries a textblock whose proportions are 1 : 1.8 [5 : 9]. This difference constitutes a primary visual chord which generates both energy and harmony in the

Shaping
the
Page

page. It is supplemented by secondary harmonies created by the proportions of the margins and the placement of the textblock – not in the center of the page but high and toward the spine.

The textblock itself, in this example, is symmetrical, but it is placed asymmetrically on the page. The lefthand page is a mirror image of the right, but no mirror image runs the other way. The two-page spread is symmetrical horizontally – the direction in which the pages turn, either backward or forward, as the reader consults the book – but it is asymmetrical vertically – the direction in which the page stays put while the reader's eye repeatedly works its way in one direction: down.

This interlocking relationship of symmetry and asymmetry, and of balanced and contrasted shape and size, was not new when this example was designed (in Venice in 1501). The first European typographers inherited some two thousand years' worth of research into these principles from their predecessors, the scribes. Yet the principles are flexible enough that countless new typographic pages and page-spreads wait to be designed.



Page spread, probably by Francesco Griffo, Venice, 1501. The text is Virgil's *Aeneid*, set entirely in a crisp, simple italic lower case, 12/12 × 16, with roman small capitals, approximately 5 pt high. The original page size is 10.7 × 17.3 cm.

8.5.1 *Bring the margins into the design.*

In typography, margins must do three things. They must *lock the textblock to the page* and *lock the facing pages to each other* through the force of their proportions. Second, they must *frame the textblock* in a manner that suits its design. Third, they must *protect the textblock*, leaving it easy for the reader to see and convenient to handle. (That is, they must leave room for the reader's thumbs.) The third of these is easy, and the second is not difficult. The first is like choosing type: it is an endless opportunity for typographic play and a serious test of skill.

Shaping
the
Page

Perhaps fifty per cent of the character and integrity of a printed page lies in its letterforms. Much of the other fifty per cent resides in its margins.

8.5.2 *Bring the design into the margins.*

The boundaries of the textblock are rarely absolute. They are nibbled and punctured by paragraph indents, blank lines between sections, gutters between columns, and the sinkage of chapter openings. They are overrun by hanging numbers, outdented paragraphs or heads, marginal bullets, folios (page numbers) and often running heads, marginal notes and other typographic satellites. These features – whether recurrent, like folios, or unpredictable, like marginal notes and numbers – should be designed to give vitality to the page and further bind the page and the textblock.

8.5.3 *Mark the reader's way.*

Folios are useful in most documents longer than two pages. They can be anywhere on the page that is graphically pleasing and easy to find, but in practice this reduces to few possibilities: (1) at the head of the page, aligned with the outside edge of the textblock (a common place for folios accompanied by running heads); (2) at the foot of the page, aligned with or slightly indented from the outside edge of the text; (3) in the upper quarter of the outside margin, beyond the outside edge of the text; (4) at the foot of the page, horizontally centered beneath the textblock.

The fourth of these choices offers Neoclassical poise but is not the best for quick navigation. Folios near the upper or lower outside

corner are the easiest to find by flipping pages in a small book. In large books and magazines, the bottom outside corner is generally more convenient for joint assaults by eye and thumb. Folios placed on the inner margin are rarely worth considering. They are invisible when needed and all too visible otherwise.

It is usual to set folios in the text size and to position them near the textblock. Unless they are very black, brightly colored or large, the folios usually drown when they get very far away from the text. Strengthened enough to survive on their own, they are likely to prove a distraction.

8.5.4 *Don't restate the obvious.*

In Bibles and other large works, running heads have been standard equipment for two thousand years. Photocopying machines, which can easily separate a chapter or a page from the rest of a book or journal, have also given running heads (and running feet, or footers) new importance.

Except as insurance against photocopying pirates, running heads are nevertheless pointless in many books and documents with a strong authorial voice or a unified subject. They remain essential in most anthologies and works of reference, large or small.

Like folios, running heads pose an interesting typographic problem. They are useless if the reader has to hunt for them, so they must somehow be distinguished from the text, yet they have no independent value and must not become a distraction. It has been a common typographic practice since 1501 to set them in spaced small caps of the text size, or if the budget permits, to print them in the text face in a second color.

8.6 PAGE GRIDS & MODULAR SCALES

8.6.1 *Use a modular scale if you need one to subdivide the page.*

Grids are often used in magazine design and in other situations where unpredictable graphic elements must be combined in a rapid and orderly way.

Modular scales serve much the same purpose as grids, but they are more flexible. A modular scale, like a musical scale, is a prearranged set of harmonious proportions. In essence, it is a measuring stick whose units are *indivisible* (or are treated as

adjust the margins thereafter – paying more attention in the latter case to absolute proportion than to convenient units of measurement. When space is measured purely in points, the temptation to rearrange it into even picas is miraculously lessened.

8.8.3 *Keep the page design supple enough to provide a livable home for the text.*

Improvisations and Adjustments

Architects build perfectly proportioned kitchens, living rooms and bedrooms in which their clients will make, among other things, a mess. Typographers likewise build perfectly proportioned pages, then distort them on demand. The text takes precedence over the purity of the design, and the typographic texture of the text takes precedence over the absolute proportions of the individual page.

If, for instance, three lines remain at the end of a chapter, looking forlorn on a page of their own, the design must flex to accommodate them. The obvious choices are: (1) running two of the previous spreads a line long (that is, adding one line to the depth of two pairs of facing pages), which will leave the final page one line short; (2) running half a dozen of the previous spreads a line short, thereby bumping a dozen lines along to the final page; or (3) reportioning some non-textual element – perhaps an illustration or the sinkage, if any, at the head of the chapter.

Spacious chapter heads stand out in a book, as they are meant to. Repportioning the sinkage is therefore a poor option unless all chapter heads can be reportioned to match. And running six spreads short is, on the face of it, clearly a greater evil than running two spreads long.

If there are only a few pages to the document, the whole thing can, and probably should, be redesigned to fit the text. But in a book of many pages, widow lines, orphaned subheads, and the runt ends of chapters or sections are certain to require reportioning some spreads. A rigid design that demands an invariant page depth is therefore inappropriate for a work of any length. Altering the leading on short pages to preserve a standard depth (vertical justification, it is sometimes called) is not a solution. Neither is stuffing extra space between the paragraphs. These antics destroy the fabric of the text and thus strike at the heart of the book.

This book was designed by Robert Bringhurst.
It was edited and set into type in Canada,
then printed and bound by C&C in Hong Kong.

The text face is Minion Pro, designed by Robert Slimbach.
This is an enlargement and revision of Slimbach's original Minion type
issued by Adobe Systems, Mountain View, California, in 1989.

The captions are set in Scala Sans, part of a family of type
designed in the Netherlands by Martin Majoor. The face was issued
by FontShop International, Berlin, and its affiliates in 1994.

The paper is Glatfelter Laid, made
at the Spring Grove Mill in Pennsylvania.
It is of archival quality and acid-free.

