A Few Notes on Book Design

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Notes

on

Book Design

Peter Wilson

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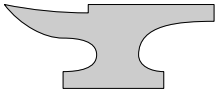

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Preface

Some fifteen or so years ago I started developing code for typesetting documents that would make it easy for designers to get the appearance they had in mind.

While doing this I read a lot about book design and have tried my hand at printing a variety of books and ephemera using hand set lead type and a hand operated Chandler & Price 1904 Old Style 8 by 12 platen press, pretty much as Gutenberg did some five and a half centuries ago.

These notes are partly based on my own amateur experience and feelings but the majority have been culled from the professionals.

Il y a une quinzaine d'années, j'ai commencé à développer un code pour la composition de documents qui permettrait aux concepteurs d'obtenir facilement l'apparence qu'ils avaient en tête.

Parallèlement, j'ai beaucoup lu sur la conception de livres et je me suis essayé à l'impression d'une variété de livres et d'objets éphémères à l'aide de caractères en plomb réglés à la main et d'une presse à platine Chandler & Price 1904 Old Style 8 par 12 actionnée à la main, à peu près comme Gutenberg l'a fait il y a cinq siècles et demi.

Ces notes sont en partie basées sur mon expérience et mes sentiments d'amateur, mais la majorité a été recueillie auprès des professionnels.

PETER WILSON
Seattle, WA
July 2009

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Introduction

These notes briefly cover some aspects of book design and typography, independently of the means of typesetting. Among the several books on the subject listed in the Bibliography I prefer Bringhurst's *The Elements of Typographic Style* (Bringhurst 1999).

The notes originally formed the first part of a user manual for the memoir class for use with the LaTeX typesetting system developed by Leslie Lamport (Lamport 1994) based on Donald Knuth's TeX system (Knuth 1984). The manual was first published in 2001 and as the notes have grown in size and memoir's capabilities have been extended the manual also grew to approaching 700 pages (Wilson 2009). At that point seemed advantageous to separate the design notes from the technicalities, hence this document.

Ces notes abordent brièvement certains aspects de la conception et de la typographie des livres, indépendamment des des moyens de composition. Parmi les nombreux ouvrages sur le sujet cités dans la bibliographie je préfère *The Elements of Typographic Style* de Bringhurst (BRINGHURST 1999).

Ces notes constituaient à l'origine la première partie d'un manuel d'utilisation de la classe memoir à utiliser avec le système de composition LaTeX développé par Leslie Lamport (LAMPORT 1994) sur la base du système TeX de Donald Knuth (KNUTH 1984). Le manuel a été publié pour la première fois en 2001 et, comme les notes ont augmenté en taille et les capacités de mémoire ont été étendues, le manuel a également augmenté jusqu'à près de 700 pages (WILSON 2009). À ce stade, il a semblé plus pratique de séparer les notes de conception des aspects techniques, d'où ce document.

Terminology

Like all professions and trades, typographers and printers have their specialised vocabulary.

First there is the question of pages, leaves and sheets. The trimmed sheets of paper that make up a book are called *leaves*, and I will call the untrimmed sheets the *stock* material. A leaf has two sides, and a *page* is one side of a leaf. If you think of a book being opened flat, then you can see two leaves. The front of the righthand leaf, is called the *recto* page of that leaf, and the side of the lefthand leaf that you see is called the *verso* page of that leaf. So, a leaf has a recto and a verso page. Recto pages are the odd-numbered pages and verso pages are even-numbered.

Then there is the question of folios. The typographical term for the number of a page is *folio*. This is not to be confused with the same term as used in 'Shakespeare's first folio' where the reference is to the height and width of the book, nor to its use in the phrase '*folio* signature' where the term refers to the number of times a printed sheet is folded. Not every page in a book has a printed folio, and there may be pages that do not have a folio at all. Pages with folios, whether printed or not, form the *pagination* of the book. Pages that are not counted in the pagination have no folios.

I have not been able to find what I think

Comme toutes les professions et tous les métiers, les typographes et les imprimeurs ont leur vocabulaire spécialisé.

Tout d'abord, il y a la question des pages, des feuilles et des feuilles. Les feuilles de papier rognées qui composent un livre sont appelées feuilles, et j'appellerai les feuilles non rognées le matériau de base. Une feuille a deux côtés, et une page est l'un des côtés d'une feuille. Si vous imaginez qu'un livre est ouvert à plat, vous pouvez voir deux feuilles. Le recto de la feuille de droite s'appelle la page recto de cette feuille, et le côté de la feuille de gauche que vous voyez s'appelle la page verso de cette feuille. Une feuille a donc une page recto et une page verso. Les pages recto sont les pages impaires et les pages verso sont les pages paires.

Ensuite, il y a la question des folios. Le terme typographique pour désigner le numéro d'une page est folio. Il ne faut pas confondre ce terme avec celui utilisé dans l'expression « premier folio de Shakespeare », qui fait référence à la hauteur et à la largeur du livre, ni avec celui utilisé dans l'expression « signature folio », qui fait référence au nombre de fois qu'une feuille imprimée est pliée. Toutes les pages d'un livre n'ont pas un folio imprimé, et il peut y avoir des pages qui n'ont pas de folio du tout. Les pages avec folio, qu'elles soient imprimées ou non, constituent la pagination du livre. Les pages qui ne sont pas comptées dans la pagination n'ont pas de folio.

Je n'ai pas été en mesure de trouver ce

is a good definition for 'type' as it seems to be used in different contexts with different meanings. It appears to be a kind of generic word; for instance there are type designers, type cutters, type setters, type foundries,... For my purposes I propose that *type* is one or more printable characters (or variations or extensions to this idea). Printers use the term *sort* to refer to one piece of lead type.

A *typeface* is a set of one or more fonts, in one or more sizes, designed as a stylistic whole.

A *font* is a set of characters. In the days of metal type and hot lead a font meant a complete alphabet and auxiliary characters in a given size. More recently it is taken to mean a complete set of characters regardless of size. A font of roman type normally consists of CAPITAL LETTERS, SMALL CAPITALS, lowercase letters, numbers, punctuation marks, ligatures (such as 'fi' and 'ffi'), and a few special symbols like &.

A *font family* is a set of fonts designed to work harmoniously together, such as a pair of roman and italic fonts.

The size of a font is expressed in points (72.27 points equals 1 inch equals 25.4 millimetre). The size is a rough indication of the height of the tallest character, but different fonts with the same size may have very different actual heights. Traditionally font sizes were referred to by names (see Table 1) but nowadays just the number of points is used.

The typographers' and printers' term for the vertical space between the lines of normal text is *leading*, which is also usually expressed in points and is usually larger than

que je pense être une bonne définition du terme « type », car il semble être utilisé dans différents contextes avec des significations différentes. Il semble que ce soit une sorte de mot générique ; par exemple, il y a des créateurs de caractères, des coupeurs de caractères, des régleurs de caractères, des fonderies de caractères... Pour mon propos, je propose que le terme "type" désigne un ou plusieurs caractères imprimables (ou des variations ou extensions de cette idée). Les imprimeurs utilisent le terme de tri pour désigner une pièce de caractères en plomb.

Un caractère est un ensemble d'une ou plusieurs polices, dans une ou plusieurs tailles, conçu comme un tout stylistique.

Une police est un ensemble de caractères. À l'époque des caractères métalliques et du plomb chaud, une police de caractères désignait un alphabet complet et des caractères auxiliaires dans une taille donnée. Plus récemment, on considère qu'il s'agit d'un ensemble complet de caractères, quelle que soit leur taille. Une police de caractères romains comprend normalement des MAJUSCULES, des PETITES MAJUSCULES, des lettres minuscules, des chiffres, des signes de ponctuation, des ligatures (telles que « fi » et « ffi ») et quelques symboles spéciaux comme « & ».

Une famille de polices est un ensemble de polices conçues pour fonctionner harmonieusement ensemble, comme une paire de polices romaines et italiques.

La taille d'une police est exprimée en points (72,27 points, soit 1 pouce, équivaut à 25,4 millimètres). La taille est une indication approximative de la hauteur du caractère le plus haut, mais des polices différentes ayant la même taille peuvent avoir des hauteurs réelles très différentes. Traditionnellement, les tailles de police étaient désignées par des noms (voir tableau 1), mais de nos jours, seul le nombre de points est utilisé.

Le terme utilisé par les typographes et les imprimeurs pour désigner l'espace vertical entre les lignes d'un texte normal est l'interlignage, qui est également exprimé en

TABLE 1 – Traditional font size designations

Points	Name	Points	Name
3	Excelsior	11	Small Pica
3½	Brilliant	12	Pica
4	Diamond	14	English
5	Pearl	18	Great Primer
5½	Agate	24	Double (or Two Line) Pica
6	Nonpareil	28	Double (or Two Line) English
6½	Mignonette	36	Double (or Two Line) Great Primer
7	Minion	48	French Canon (or Four Line Pica)
8	Brevier	60	Five Line Pica
9	Bourgeois	72	Six line Pica
10	Long Primer	96	Eight Line Pica

the font size. A convention for describing the font and leading is to give the font size and leading separated by a slash; for instance $10/12$ for a 10 pt font set with a 12 pt leading, or $12/14$ for a 12 pt font set with a 14 pt leading.

The normal length of a line of text is often called the *measure* and is normally specified in terms of picas where 1 pica equals 12 points (1 pc = 12 pt).

Documents may be described as being typeset with a particular font with a particular size and a particular leading on a particular measure; this is normally given in a shorthand form. A 10 pt font with 11 pt leading on a 20 pc measure is described as $10/11 \times 20$, and $14/16 \times 22$ describes a 14 pt font with 16 pt leading set on a a 22 pc measure.

points et est généralement plus grand que la taille de la police. Une convention pour décrire la police et l'interligne consiste à indiquer la taille de la police et l'interligne en les séparant par une barre oblique ; par exemple 10/12 pour une police de 10 pt avec une interligne de 12 pt, ou 12/14 pour une police de 12 pt avec une interligne de 14 pt.

La longueur normale d'une ligne de texte est souvent appelée la mesure et est normalement spécifiée en termes de picas, où 1 pica équivaut à 12 points (1 pc = 12 pt).

Les documents peuvent être décrits comme étant composés avec une police de caractères particulière d'une taille particulière et d'une avance particulière sur une mesure particulière ; ceci est normalement donné sous une forme abrégée. Une police de 10 pt avec un corps de 11 pt sur une mesure de 20 pc est décrite comme 10/11×20, et 14/16×22 décrit une police de 14 pt avec un corps de 16 pt sur une mesure de 22 pc.

Units of measurement

Typographers and printers use a mixed system of units, some of which we met above. The fundamental unit is the point; Table 2 lists the most common units employed.

Les typographes et les imprimeurs utilisent un système mixte d'unités, dont certaines ont été rencontrées ci-dessus. L'unité fondamentale est le point ; le tableau 2 énumère les unités les plus couramment em-

TABLE 2 – Printers units

Name (abbreviation)	Value
point (pt)	
pica (pc)	1 pc = 12 pt
inch (in)	1 in = 72.27 pt
centimetre (cm)	2.54 cm = 1 in
millimetre (mm)	10 mm = 1 cm
big point (bp)	72 bp = 72.27 pt
didot point (dd)	1157 dd = 1238 pt
cicero (cc)	1 cc = 12 dd

Points and picas are the traditional printers units used in English-speaking countries. The didot point and cicero are the corresponding units used in continental Europe. In Japan 'kyus' (a quarter of a millimetre) may be used as the unit of measurement. Inches and centimetres are the units that we are all, or should be, familiar with.

The point system was invented by Pierre Fournier le jeune in 1737 with a length of 0.349 mm. Later in the same century François-Ambroise Didot introduced his point system with a length of 0.3759 mm. This is the value still used in Europe. Much later, in 1886, the American Type Founders Association settled on 0.013837 in as the standard size for the point, and the British followed in 1898. Conveniently for those who are not entirely metric in their thinking this means that six picas are approximately equal to one inch.

The big point is somewhat of an anomaly in that it is a recent invention. It tends to be used in page markup languages, like PostScript [1], in order to make calculations quicker and easier.

The above units are all constant in value.

1. PostScript is a registered trademark of Adobe Systems Incorporated.

ployées.

Points et picas sont les unités traditionnelles des imprimeurs utilisées dans les pays anglophones. Le point didot et le cicero sont les unités correspondantes utilisées en Europe continentale. Au Japon, les « kyus » (un quart de millimètre) peuvent être utilisés comme unité de mesure. Les pouces et les centimètres sont les unités avec lesquelles nous sommes tous, ou devrions être, familiers.

Le système du point a été inventé par Pierre Fournier le jeune en 1737 avec une longueur de 0,349 mm. Plus tard dans le même siècle, François-Ambroise Didot a introduit son système de points avec une longueur de 0,3759 mm. C'est la valeur encore utilisée en Europe. Beaucoup plus tard, en 1886, l'American Type Founders Association a fixé la taille standard du point à 0,3514598 mm, suivie par la Grande-Bretagne en 1898. Pour ceux qui ne sont pas tout à fait dans le système métrique, cela signifie que six picas sont approximativement égaux à un pouce.

Le gros point est un peu une anomalie dans la mesure où il s'agit d'une invention récente. Il est généralement utilisé dans les langages de balisage de pages, commePostScript [1], afin de rendre les calculs plus rapides et plus faciles.

Les unités ci-dessus ont toutes une va-

1. PostScript est une marque déposée appartenant à Adobe Systems Incorporated.

There are also some units whose value depends on the particular font being used. The *em* is the nominal height of the current font; it is used as a width measure. An *en* is half an em. The *ex* is nominally the height of the letter 'x' in the current font. You may also come across the term *quad*, often as in a phrase like 'starts with a quad space'. It is a length defined in terms of ems; a quad is 1 em.

leur constante. Il existe également certaines unités dont la valeur dépend de la police de caractères utilisée. Le *em* est la hauteur nominale de la police actuelle ; il est utilisé comme mesure de la largeur. Un *en* correspond à la moitié d'un *em*. L'*ex* est la hauteur nominale de la lettre « x » dans la police actuelle. Vous pouvez également rencontrer le terme *quadratin* (en anglais : *quad*), souvent dans une phrase comme « commence par un espace cadratin ». Il s'agit d'une longueur définie en termes d'*em*s ; un quad correspond à 1 em.

One

Historical background

1.1 Galloping through the millenia

The earliest known writing dates back to the Sumerians around 3300BC who used pointed sticks or reeds to impress marks into wet clay tablets that were subsequently dried. The result is what we call Cuneiform.[1] For the next several thousand years all texts were produced, one way or another, individually by hand.

The earliest printed book known is a 9th century Chinese woodblock printing of the *Diamond Sutra*. In this technique the complete text for a page is carved on a wooden block which is then used to impress the ink onto the paper. Once the woodblocks were available many copies of the text could be produced very quickly.

The Chinese were perhaps the first to print using moveable type where the individual characters were engraved on wood blocks so they could be reused for different texts. In his *Writings Beside the Meng Creek* the Song Dynasty essayist Shen Kuo (1031–1095) described how Bi Sheng during the reign of Chingli (1041–1048) printed from moveable type that he made from baked clay, which was rather fragile. Somewhat later Wang Zhen (c. 1290–1333) improved the process by using wooden type. These never became particularly popular methods because of the

1. From the Latin *cuneus* meaning wedge.

La plus ancienne écriture connue remonte aux Sumériens, aux alentours de 3300 avant J.-C., qui utilisaient des bâtons pointus ou des roseaux pour imprimer des marques sur des tablettes d'argile humides qui étaient ensuite séchées. Le résultat est ce que nous appelons le « cunéiforme »[1]. Pendant les milliers d'années qui ont suivi, tous les textes ont été produits, d'une manière ou d'une autre, individuellement à la main.

Le plus ancien livre imprimé connu est une gravure sur bois du Sutra du Diamant, réalisée en Chine au IXe siècle. Selon cette technique, le texte complet d'une page est gravé sur un bloc de bois qui est ensuite utilisé pour imprimer l'encre sur le papier. Une fois les blocs de bois disponibles, de nombreuses copies du texte pouvaient être produites très rapidement.

Les Chinois ont peut-être été les premiers à imprimer en utilisant des caractères mobiles, c'est-à-dire des caractères individuels gravés sur des blocs de bois afin de pouvoir les réutiliser pour différents textes. Dans ses *Écrits à côté du ruisseau Meng*, l'essayiste de la dynastie Song Shen Kuo (1031–1095) décrit comment Bi Sheng, sous le règne de Chingli (1041–1048), imprimait à partir de caractères mobiles qu'il fabriquait en argile cuite, ce qui était plutôt fragile. Un peu plus tard, Wang Zhen (vers 1290–1333) a amélioré le processus en utilisant des caractères en bois. Ces

1. Du Latin *cuneus*, qui signifie « coin ».

thousands of different characters that a printing house might need. By 1230 the Chinese used moveable metal type for printing. None of this was known outside Asia.

In the West books and manuscripts were hand written by scribes, although some small items, like playing cards or depictions of saints, were printed from woodblocks. Then Johannes Gutenberg (c. 1398–1468) of Mainz invented printing using moveable type around about 1440–1450.[2] He had to experiment to determine the formula for a suitable ink and also to develop a good metal alloy for the type itself. He came up with lead to which he added antimony for strength and hardness and tin for toughness.[3]

In order be successful in the market Gutenberg had to produce books that equaled those produced by the scribes, except that they did not have to be decorated so lavishly. The scribes used many ligatures, contractions, and other techniques in order to have justified text with no raggedy edges. To compete with them his font for the famous 42-line Bible, published around 1455, consisted of some 290 characters though all the text was in Latin which requires a basic character set of only forty letters — twenty lowercase letters and twenty caps — plus some punctuation marks.

The 42-line Bible is set in two columns of 42 lines each. It is believed that about 135 copies were printed on paper and 40 on vellum. The page size was 12 by $16\frac{1}{2}$ inches

2. Others have been put forward as the inventor, notably a Dutchman named Coster, but the preponderance of opinion favours Gutenberg.

3. This is still the basis for metal type today; Monotype casting machines use lead with 15–24% antimony and 6–12% tin.

méthodes ne sont jamais devenues particulièrement populaires en raison des milliers de caractères différents dont une imprimerie pouvait avoir besoin. En 1230, les Chinois utilisaient des caractères métalliques mobiles pour l'impression. Rien de tout cela n'était connu en dehors de l'Asie.

En Occident, les livres et les manuscrits étaient écrits à la main par des scribes, même si certains petits objets, comme les cartes à jouer ou les représentations de saints, étaient imprimés à partir de blocs de bois. C'est vers 1440–1450 que Johannes Gutenberg (vers 1398–1468), originaire de Mayence, a inventé l'impression à l'aide de caractères mobiles.[2] Il a dû faire des expériences pour déterminer la formule d'une encre appropriée et aussi pour développer un bon alliage métallique pour les caractères eux-mêmes. Il a trouvé du plomb auquel il a ajouté de l'antimoine pour la résistance et la dureté et de l'étain pour la solidité.[3]

Pour réussir sur le marché, Gutenberg devait produire des livres équivalents à ceux produits par les scribes, à ceci près qu'ils ne devaient pas être aussi richement décorés. Les scribes utilisaient de nombreuses ligatures, contractions et autres techniques afin d'obtenir un texte justifié sans bords irréguliers. Pour leur faire concurrence, sa police de caractères pour la célèbre Bible à 42 lignes, publiée vers 1455, comportait quelque 290 caractères, bien que tout le texte soit en latin, ce qui nécessite un jeu de caractères de base de seulement quarante lettres — vingt minuscules et vingt majuscules — plus quelques signes de ponctuation.

La Bible à 42 lignes est disposée en deux colonnes de 42 lignes chacune. On pense qu'environ 135 exemplaires ont été imprimés sur papier et 40 sur vélin. La taille des

2. D'autres ont été proposés comme inventeurs, notamment un Hollandais nommé Coster, mais la prépondérance de l'opinion penche pour Gutenberg.

3. C'est encore la base des caractères métalliques aujourd'hui ; les machines à couler Monotype utilisent du plomb avec 15–24 % d'antimoine et 6–12 % d'étain.

and it is estimated that more than five thousand calfskins were required for the vellum copies.

The new technology spread rapidly. In 1465 Konrad Sweynheym and Arnold Pannartz set up a printing shop in the monastery at Subiaco, east of Rome. There was printing in Köln in 1466 and in 1468 in Augsberg and Rome itself. The first Venetian printer was Johann van Speyer who started work in 1469. A year later printing was established at the Sorbonne and Nicolas Jenson had his press in Venice. Printing was introduced into Spain at Valencia in 1474. William Caxton started printing in England in 1476 setting up a press at The Sign of the Red Pale in Westminster, near the Abbey; Theoderic Rood was printing in Oxford between 1478 and 1485 and John Sieberch at Cambridge in 1520.

The German printers kept with the initial gothic style of Gutenberg's type and Caxton used a cursive bastarda gothic. The Italians and other Europeans, though, moved to a roman type, based on the humanist bookhands, for their work. In 1471 Jenson produced the first full set of Greek type, which still remains one of the best. Aldus Manutius, printing in Venice, introduced the italic type in 1500.

The early printers were jack of all trades. They had to make their presses, design, make and cast their type, and print and sell the results. As time went on typemaking and printing became separate crafts. It became possible to purchase the materials and equipment for printing but the printer was still the book designer.

For four centuries setting the type for printing was done by hand until the introduction of Ottmar Mergenthaler's Linotype machine in 1886. The operator sat at a keyboard, typing the text line by line and the ma-

pages était de 12 pouces sur 16 et demi, et on estime que plus de cinq mille peaux de veau ont été nécessaires pour les copies sur vélin.

La nouvelle technologie se répand rapidement. En 1465, Konrad Sweynheym et Arnold Pannartz installent une imprimerie dans le monastère de Subiaco, à l'est de Rome. L'imprimerie était présente à Cologne en 1466 et, en 1468, à Augsberg et à Rome même. Le premier imprimeur vénitien, Johann van Speyer, a commencé à travailler en 1469. Un an plus tard, l'imprimerie était établie à la Sorbonne et Nicolas Jenson avait sa presse à Venise. L'impression a été introduite en Espagne à Valence en 1474. William Caxton a commencé à imprimer en Angleterre en 1476 en installant une presse à The Sign of the Red Pale à Westminster, près de l'abbaye; Theoderic Rood imprimait à Oxford entre 1478 et 1485 et John Sieberch à Cambridge en 1520.

Les imprimeurs allemands conservent le style gothique initial des caractères de Gutenberg et Caxton utilise un gothique bastarda cursif. Les Italiens et les autres Européens, en revanche, adoptèrent pour leurs travaux une police de caractères romaine, basée sur les manuscrits humanistes. En 1471, Jenson a produit le premier jeu complet de caractères grecs, qui reste encore l'un des meilleurs. Aldus Manutius, imprimeur à Venise, introduit le caractère italique en 1500.

Les premiers imprimeurs étaient des hommes à tout faire. Ils devaient fabriquer leurs presses, concevoir, fabriquer et couler leurs caractères, puis imprimer et vendre les résultats. Au fil du temps, la fabrication des caractères et l'impression sont devenues des métiers distincts. Il est devenu possible d'acheter les matériaux et les équipements nécessaires à l'impression, mais l'imprimeur restait le concepteur du livre.

Pendant quatre siècles, la composition des caractères d'imprimerie a été effectuée à la main jusqu'à l'introduction de la machine Linotype d'Ottmar Mergenthaler en 1886. L'opérateur s'asseyait devant un clavier, ta-

chine produced a corresponding solid line of type. The disadvantage was when an error needed correcting at least one whole new line of type was needed, or two or more if the correction spilled over the end of the line, or even more if it continued onto the following page. The competing Monotype machine, invented by Tolbert Lanston, was first available in 1896. This was operated via a keyboard which produced a punched paper tape which was fed to the caster which produced lines of type composed of individual pieces. Correcting typos was easier because individual characters could be added or replaced. On the other hand, Linotype output was easier to handle if complete sections had to be moved around, for example for 'quick' printing such as a daily newspaper.

pait le texte ligne par ligne et la machine produisait une ligne de caractères pleine correspondante. L'inconvénient est que lorsqu'une erreur doit être corrigée, il faut au moins une nouvelle ligne entière de caractères, voire deux ou plus si la correction déborde sur la fin de la ligne, ou encore plus si elle se poursuit sur la page suivante. La machine Monotype concurrente, inventée par Tolbert Lanston, a été mise sur le marché en 1896. Elle fonctionnait à l'aide d'un clavier qui produisait une bande de papier perforé, laquelle était acheminée vers la roulette qui produisait des lignes de caractères composées de pièces individuelles. La correction des fautes de frappe était plus facile car les caractères individuels pouvaient être ajoutés ou remplacés. D'un autre côté, la sortie de la Linotype était plus facile à gérer si des sections complètes devaient être déplacées, par exemple pour une impression « rapide » comme celle d'un journal quotidien.

Alan Bartram (Bartram 2001) shows examples of book designs from between 1470 and 1948, not all of which he considers to be good. Examples of printed pages from the 15th to the 20th century are in the TUG 2007 San Diego Meeting keynote presentation (Wilson 2007).

Alan Bartram (BARTRAM 2001) présente des exemples de conceptions de livres datant de 1470 à 1948, qu'il ne considère pas tous comme bons. Des exemples de pages imprimées du XV^e au XX^e siècle figurent dans la présentation principale de la conférence TUG 2007 de San Diego (WILSON 2007).

1.2 Making type

This is a very brief description of how lead type is made. For a good overview see (Chappell and Bringhurst 1999) and Fred Smeijers (Smeijers 1996) provides a detailed description of punchcutting.

Voici une très brève description de la fabrication des caractères en plomb. Pour une bonne vue d'ensemble, voir (Chappell et Bringhurst 1999) ; Fred Smeijers (Smeijers 1996) fournit une description détaillée de la taille des poinçons.

Making type has been an inherently manual process. Having got a design for a font, for each character, a punchcutter makes a punch starting with a square steel bar about $2^1/_4$ inches (6 cm) long with an end face large enough to encompass the character. Using files and gravers, and perhaps some specialized tools like a counterpunch, he carves out

La fabrication des caractères est un processus intrinsèquement manuel. Après avoir dessiné une police de caractères, pour chaque signe, le poinçonneur fabrique un poinçon à partir d'une barre d'acier carrée d'environ 6 cm de long, dont l'extrémité est suffisamment large pour englober le signe. À l'aide de limes et de ciseaux, et éventuelle-

the character in relief on one end of the bar. The character is oriented so that it is backwards with respect to its appearance when printed. To check the shape, the end of the punch is put into the flame of an alcohol lamp which coats it with lampblack, and it is then pressed against a chalky paper to leave a black image of the character. Once the shape is correct the punch is hardened and annealed.

ment d'outils spécialisés comme un contrepoinçon, il sculpte le caractère en relief sur une extrémité de la barre. Le caractère est orienté de manière à ce qu'il soit à l'envers par rapport à son apparence à l'impression. Pour vérifier la forme, l'extrémité du poinçon est placée dans la flamme d'une lampe à alcool qui l'enduit de noir de fumée, puis elle est pressée contre un papier crayeux pour laisser une image noire du caractère. Une fois que la forme est correcte, le poinçon est durci et recuit.

The next stage is to create the matrix for the character. The punch is hammered into a softer material, usually copper, or sometimes brass which is harder but lasts longer. At this point the character is in the same orientation as printed but is a negative impression in the matrix.

L'étape suivante consiste à créer la matrice du caractère. Le poinçon est martelé dans un matériau plus tendre, généralement du cuivre, ou parfois du laiton, qui est plus dur mais dure plus longtemps. À ce stade, le caractère est dans la même orientation que celle imprimée, mais il s'agit d'une impression négative dans la matrice.

The matrix is then put into a casting box and molten typemetal poured in. Once it has hardened and removed from the mould the new piece of type is dressed to the same length as all the other pieces for the font. Many, many pieces of type can be cast from one matrix, and if the punch is retained new matrices can be made. Typically one buys the lead type from a typecasting company, and a typecasting company would purchase matrices from the type design company. Of course, in the early days these were all the same organisation and only as the centuries passed did they tend to become separated.

La matrice est ensuite placée dans une boîte de coulée et du métal typographique fondu y est versé. Une fois durcie et démoulée, la nouvelle pièce est taillée à la même longueur que toutes les autres pièces de la police. De très nombreuses pièces de caractères peuvent être coulées à partir d'une matrice, et si le poinçon est conservé, de nouvelles matrices peuvent être fabriquées. En général, on achète les caractères principaux à une société de fonte de caractères, et la société de fonte de caractères achète les matrices à la société de création de caractères. Bien entendu, au début, ces entreprises étaient toutes regroupées au sein de la même organisation et ce n'est qu'au fil des siècles qu'elles ont eu tendance à se séparer.

The Linotype and Monotype machines require the matrices but cast the type only when needed. After use the type from these machines is melted down and reused time and time again.

Les machines Linotype et Monotype ont besoin de matrices mais ne fondent les caractères qu'en cas de besoin. Après utilisation, les caractères de ces machines sont fondus et réutilisés à l'infini.

1.3 Book types

Roughly speaking, there are two kinds of printing type; one, called in general *book*

En gros, il existe deux types de caractères d'imprimerie : l'un, appelé en général

TABLE 1.1 – Broad typeface categories

Typeface	Lawson	Bringhurst	Vox
Centaur	Venetian	Renaissance	Humanist
Bembo	Aldine/French	Renaissance	Garald
Garamond	Aldine/French	Baroque	Garald
Caslon	Dutch/English	Baroque	Garald
Baskerville	Transitional	Neoclassical	Transitional
Bell	Transitional	Rationalist	Transitional
Bodoni	Modern	Romantic	Didone
Clarendon	**Square Serif**	**Realist**	**Mechanistic**
Futura	Sans-serif	Geometric Modernist	Lineal Geometric
Optima	Sans-serif	Neoclassical	Lineal Humanist
Gill Sans	Sans-serif	Geometric Humanist	Lineal Humanist

type, is what is used for setting longer pieces of text such as a poem or a book, or other material meant for continuous reading. The other, called *display type*, is used for pretty much everything else, such as company names, posters, advertisements, ephemera and sometimes even book titles, all of which are short pieces of text, often intended to catch your eye. There are a multitude of display types, some of them almost illegible. Here I want to say a little bit about book types.

There are several ways of categorizing typefaces, three of which are shown in Table 1.1. The listed schemes are

Lawson from Lawson & Agner (Lawson and Agner 1990) who proposed *a Rational System* based on the historical sequence.

Bringhurst who categorizes according to the artistic and architectural period that a typeface can be said to represent (Bringhurst 1999).

Vox devised a system that has been adopted as a British Standard (BS 2961: 1967). This tried to be language-neutral and get away from the more traditional

caractères de labeur, est utilisé pour mettre en page des textes plus longs, comme un poème ou un livre, ou tout autre document destiné à être lu en continu. L'autre, appelé *caractères d'affichage* (**traduction :** caractères de titraille ?), est utilisé pour presque tout le reste, comme les noms de sociétés, les affiches, les publicités, les documents éphémères et parfois même les titres de livres, qui sont tous des textes courts, souvent destinés à attirer l'attention. Il existe une multitude de caractères d'affichage, dont certains sont presque illisibles. Je voudrais ici parler un peu des caractères de labeur.

Il existe plusieurs façons de classer les types de caractères, dont trois sont présentées dans le tableau 1.1. Les schémas répertoriés sont les suivants :

Lawson de Lawson & Agner (LAWSON et AGNER 1990) qui a proposé un système rationnel basé sur la séquence historique.

Bringhurst qui catégorise en fonction de la période artistique et architecturale qu'un caractère peut être considéré comme représentant (BRINGHURST 1999).

Vox a conçu un système qui a été adopté comme norme britannique (BS 2961 : 1967). Ce système s'est efforcé d'être

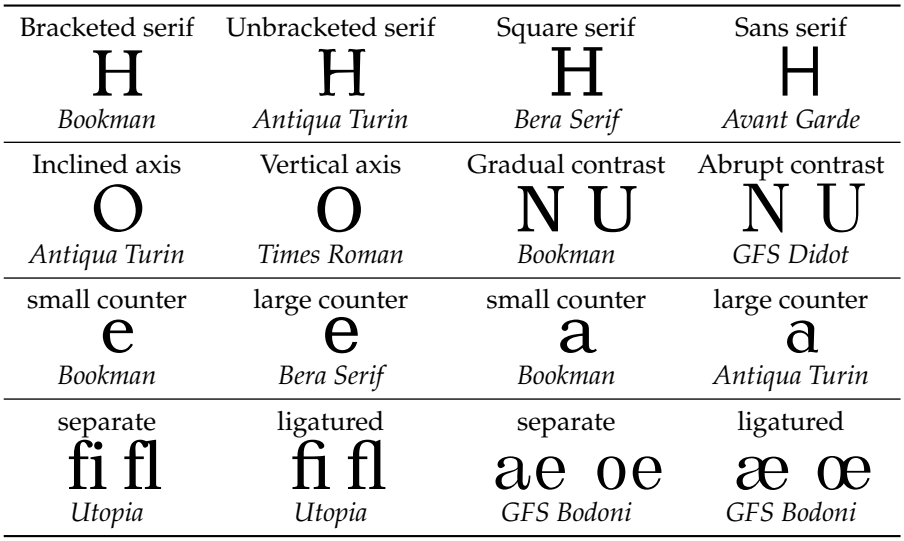


FIGURE 1.1 – Examples of some typographical type-related terms

descriptions such as gothic, antique, grotesque, and modern which have different, and somtimes opposite, meanings in different languages (McLean 1980).

neutre du point de vue linguistique et de s'éloigner des descriptions plus traditionnelles telles que gothique, antique, grotesque et moderne qui ont des significations différentes, et parfois opposées, dans différentes langues (MCLEAN 1980).

Later I will expand on the Lawson & Agner system and show some types corresponding to some of their categories. I have limited the examples to those types which are included in a modern LaTeX distribution, which unfortunately does not include types corresponding to all the categories.

Plus tard, je développerai le système de Lawson & Agner et montrerai quelques types correspondant à certaines de leurs catégories. J'ai limité les exemples aux types qui sont inclus dans une distribution moderne de LaTeX, qui ne comprend malheureusement pas de types correspondant à toutes les catégories.

1.3.1 TYPE-RELATED TERMINOLOGY

First, though, some typographical terms related to types, and illustrated in Figure 1.1.

Mais d'abord, quelques termes typographiques liés aux types, et illustrés sur la Figure 1.1.

Serif: The cross stroke that finishes the stems or arms of letters.

Empattement : Le trait transversal qui termine les tiges ou les bras des lettres.

Bracketed serif: A serif that transitions gradually into the stem it is attached to.

Empattement entre crochets : Empattement qui s'intègre progressivement à la tige à laquelle il est attaché.

Unbracketed serif: A serif with a sharp break

between it and the stem.

Square serif: A rectangular serif with squared ends.

Sans serif: Without serifs.

Axis: The direction of the hypothetical line joining the thinnest parts of a letter like 'O'. It is related to the angle that a broad nibbed pen would be held in order to replicate the inner and outer contours. [4]

Contrast (also called shading): The difference between the thick and thin strokes.

Counter: The white space enclosed by a letter, whether open or closed. Sometimes used to refer to the closed part of letters such as 'a' or 'e', which may also be referred to as the *eye*.

Ligature: The conjoining of two (or more) letters, usually with a change of shape.

Empattement sans crochet : Empattement avec une rupture nette entre lui et la tige.

Empattement carré : Un empattement rectangulaire avec des extrémités carrées.

Sans empattement : Sans empattement.

Axe : La direction de la ligne hypothétique joignant les parties les plus fines d'une lettre comme « O ». Il est lié à l'angle sous lequel un stylo à pointe large serait tenu afin de reproduire les contours intérieurs et extérieurs. [4]

Contraste (également appelé ombrage) : La différence entre les traits épais et les traits fins.

Compteur : L'espace blanc délimité par une lettre, qu'elle soit ouverte ou fermée. Parfois utilisé pour désigner la partie fermée des lettres telles que le « a » ou le « e », qui peut également être appelée *œil*.

Ligature : La jonction de deux (ou plusieurs) lettres, généralement avec un changement de forme.

For more detailed descriptions and further terms you may wish to consult other sources, such as (Bringhurst 1999; Lawson and Agner 1990; Meggs and McKelvey 2000). If you are interested in the subtle, and the not so subtle, differences between typefaces then Karen Cheng's *Designing Type* (Cheng 2005) has a great deal to offer.

Pour des descriptions plus détaillées et d'autres termes, vous pouvez consulter d'autres sources, telles que (BRINGHURST 1999; LAWSON et AGNER 1990; MEGGS et MCKELVEY 2000). Si vous vous intéressez aux différences subtiles, et moins subtiles, entre les caractères, l'ouvrage de Karen Cheng, *Designing Type* (CHENG 2005), a beaucoup à vous offrir.

The names of typefaces can be confusing; different suppliers have a tendency to give different names to the same underlying typeface. For example Goudy's University of California Old Style can also be found as Californian, University Old Style, Berkely Old Style, and possibly under other names as well, all more or less adhering to the original design.

Les noms des polices de caractères peuvent prêter à confusion ; les différents fournisseurs ont tendance à donner des noms différents à la même police de caractères sous-jacente. Par exemple, le Goudy's University of California Old Style peut également être trouvé sous le nom de Californian, University Old Style, Berkely Old Style, et peut-être sous d'autres noms également,

4. L'axe et l'angle sont perpendiculaires l'un à l'autre.

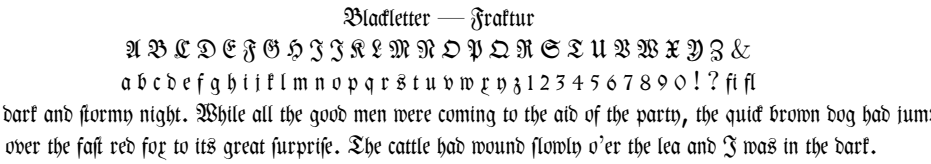


FIGURE 1.2 – An example of the Fraktur style of Blackletter types

1.3.2 BLACKLETTER

The first type was *Gothic*, or *Blackletter*, used by Gutenberg which was based on the kind of script that the scribes were using at that time (c. 1455). It remained in fashion in Germany until towards the end of the last century, and is still often used for the names of newspapers. Elsewhere, starting in Italy, it was replaced by the *Roman* type.

There are several kinds of blackletter type. The first is *Textura* where the characters are squarely drawn without any curves and are the kind that Gutenberg used. In the scribal tradition from which these came the idea was that the words created a uniform texture along each line and down each page. To modern eyes it is difficult to tell one letter from another. Two modern versions are Goudy Text and Cloister Black.

Another grouping is *Rotunda* where the letters are more rounded than Textura and are easier to read. A modern example is Goudy Thirty.

The last subdivision is *Bastarda* which has been the common type used in Germany for many a year. The most common form is *Fraktur*, first cut in the sixteenth century, which is a lighter and more open version of Textura and so easier to read. Many newspapers use a Fraktur type for their headline. An example of a *Fraktur* is shown in Figure 1.2.

Le premier type d'écriture était le *gothique*, ou Blackletter, utilisé par Gutenberg et basé sur le type d'écriture que les scribes utilisaient à l'époque (vers 1455). Elle est restée à la mode en Allemagne jusqu'à la fin du siècle dernier, et est encore souvent utilisée pour les noms de journaux. Ailleurs, à partir de l'Italie, elle a été remplacée par le caractère romain.

Il existe plusieurs types de caractères noirs. La première est la *Textura*, où les caractères sont tracés à l'équerre, sans courbes, et c'est celle qu'utilisait Gutenberg. Dans la tradition scribale dont ils sont issus, l'idée était que les mots créent une texture uniforme le long de chaque ligne et sur chaque page. Pour des yeux modernes, il est difficile de distinguer une lettre d'une autre. Deux versions modernes sont le Goudy Text et le Cloister Black.

Un autre groupe est la *Rotunda*, où les lettres sont plus arrondies que Textura et sont plus faciles à lire. Un exemple moderne est le Goudy Thirty.

La dernière subdivision est la *Bastarda*, qui est le type de caractères le plus couramment utilisé en Allemagne depuis de nombreuses années. La forme la plus courante est le *Fraktur*, créé au XVI^{e} siècle, qui est une version plus légère et plus ouverte du Textura et donc plus facile à lire. De nombreux journaux utilisent une police Fraktur pour leurs titres. La Figure 1.2 présente un exemple de Fraktur.

1.3.3 OLDSTYLE

Venetian

Early roman types, based on the humanist scribal hand, were cut by Sweynheym & Pannartz in the Rome area (c. 1467). In Venice Nicolas Jenson cut what is considered to be the first, and one of the best, romans (c. 1471). His types have been widely reproduced and copied and the style is known as *Venetian*. Some modern day Venetians include Cloister, Eusebius (originally called Nicolas Jenson) and Venezia; Bruce Rogers' Centaur is an elegant modernized Venetian.

Les premiers caractères romains, basés sur la main du scribe humaniste, ont été taillés par Sweynheym & Pannartz dans la région de Rome (vers 1467). À Venise, Nicolas Jenson a taillé ce qui est considéré comme le premier, et l'un des meilleurs, caractères romains (vers 1471). Ses poinçons ont été largement reproduits et copiés et le style est connu sous le nom de *vénitien*. Parmi les vénitiens modernes, citons Cloister, Eusebius (appelé à l'origine Nicolas Jenson) et Venezia ; le Centaur de Bruce Rogers est un élégant vénitien modernisé.

The characteristics of the Venetian types include uneven or slightly concave serifs, there is minimal contrast between the thick and thin strokes, and an inclined axis. The crossbar of the lowercase 'e' is slanted upwards. On some capitals, principally 'N' and 'M', there are slab serifs that extend across the tops of the vertical strokes.

Les caractéristiques des caractères vénitiens comprennent des empattements inégaux ou légèrement concaves, un contraste minimal entre les traits épais et fins, et un axe incliné. La barre transversale du « e » minuscule est inclinée vers le haut. Sur certaines capitales, principalement le « N » et le "« M », il y a des empattements qui s'étendent sur les sommets des traits verticaux.

William Morris chose Jenson's type as the model for his Golden Type, cut by Edward Prince around 1890. This started the revival of the Venetian types.

William Morris a choisi le caractère de Jenson comme modèle pour son Golden Type, coupé par Edward Prince vers 1890. C'est le début de la renaissance des caractères vénitiens.

The first type generally available was Morris Benton's Cloister Oldstyle. Other modern Venetians include Goudy's Kennerly, Deepdene and Californian, which is now called Berkely Old Style. One, perhaps the best, is Bruce Rogers' Centaur which he created in 1914.

Le premier caractère généralement disponible était le Cloister Oldstyle de Morris Benton. Parmi les autres vénitiens modernes, citons le Kennerly, le Deepdene et le Californien de Goudy, qui s'appelle désormais Berkely Old Style. L'un d'entre eux, peut-être le meilleur, est le Centaur de Bruce Rogers, qu'il a créé en 1914.

Aldine/French

Another of the many printers in Venice, Aldus Manutius, wanted a type that was less related to the pen-drawn scribal characters. Aldus employed Francesco Griffo da Bologna to cut two types for him. The first, cut in 1497, was for an edition of *De Aetna* by the humanist scholar Pietro Bembo —

Un autre des nombreux imprimeurs de Venise, Aldus Manutius, souhaitait une typographie qui soit moins proche des caractères tracés à la plume par les scribes. Aldus employa Francesco Griffo da Bologna pour tailler deux caractères pour lui. Le premier, taillé en 1497, était destiné à une édi-

Oldstyle Aldine/French — Palatino
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 &
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 1 2 3 4 5 6 7 8 9 0 ! ? fi fl
It was a dark and stormy night. While all the good men were coming to the aid of the party, the quick brown dog had jumped over the fast red fox to its great surprise. The cattle had wound slowly o'er the lea and I was in the dark.

FIGURE 1.3 – An example of an Oldstyle Aldine/French type : Palatino

the modern version of this is called Bembo. Griffo also cut another variation on Jenson's roman and which soon superseded it in popularity. It was first used in the famous *Hypnerotomachia Poliphili* by Francesco Colonna which Aldus published in 1499. A modern version is available called Poliphilus.

The Aldine roman soon spread across Europe. One of the first type cutters to use it as a model was Claude Garamond in Paris (c. 1540), and his types had a wide distribution, for example being used in Antwerp by Christopher Plantin. The main basis for modern versions is a version of Garamond's types cut by the French printer Jean Jannon about 1621.

Characteristics of these types are wide concave serifs, particularly on the capitals, which are narrower than the Venetians and may be not as high as the lowercase ascenders. The crossbar of the lowercase 'e' is horizontal, as opposed to the slanted crossbar of the Venetians. There is an inclined axis and a medium contrast between the thick and thin strokes.

Some modern Aldine/French Oldstyle types are Bembo, Estienne, Garamond, Geraldus, Granjon, Palatino, Poliphilus, and Sabon. An example of Palatino, which was created by Hermann Zapf in 1950, is shown in Figure 1.3.

tion du *De Aetna* par l'érudit humaniste Pietro Bembo — la version moderne de ce texte est appelée Bembo. Griffo a également gravé une autre variante du roman de Jenson, qui l'a rapidement supplanté en termes de popularité. Elle a été utilisée pour la première fois dans la célèbre *Hypnerotomachia Poliphili* de Francesco Colonna, publiée par Aldus en 1499. Une version moderne est disponible sous le nom de Poliphilus.

Le romain aldin s'est rapidement répandu dans toute l'Europe. L'un des premiers tailleurs de caractères à l'utiliser comme modèle fut Claude Garamond à Paris (vers 1540), et ses caractères ont eu une large diffusion, étant par exemple utilisés à Anvers par Christopher Plantin. La principale base des versions modernes est une version des caractères de Garamond taillés par l'imprimeur français Jean Jannon vers 1621.

Ils sont pour caractéristiques de larges empattements concaves, en particulier sur les capitales, qui sont plus étroites que les Vénitiennes et peuvent ne pas être aussi hautes que les ascendants des minuscules. La barre transversale du « e » minuscule est horizontale, contrairement à la barre transversale inclinée des Vénitiens. Il y a un axe incliné et un contraste moyen entre les traits épais et fins.

Parmi les caractères modernes de style aldin/français ancien, citons Bembo, Estienne, Garamond, Geraldus, Granjon, Palatino, Poliphilus et Sabon. Un exemple de Palatino, créé par Hermann Zapf en 1950, est présenté à Figure 1.3.

Dutch/English

During the sixteenth century the French types were popular throughout Europe but then the pendulum swung towards types from the Low Countries. The Dutch were principally traders and their printing style became increasingly known. They produced types that were more practical for commercial printing. The contrast between thick and thin strokes increased and the serifs straightened.

The English type cutter William Caslon (1692–1766) cut a famous face of this kind that has been used ever since throughout the world; in America the first printed version of the *Declaration of Independence* was set with Caslon type.

Modern Dutch/English types include Caslon (of course), and Janson.

Au XVI^e^ siècle, les caractères français étaient populaires dans toute l'Europe, mais l'équilibre s'est ensuite déplacé vers les caractères des Pays-Bas. Les Hollandais étaient principalement des commerçants grâce à ça leur style d'impression était de plus en plus connu. Ils produisaient des caractères plus pratiques pour l'impression commerciale. Le contraste entre les traits épais et fins était accentué et les empattements étaient plus droits.

Le graveur de caractères anglais William Caslon (1692–1766) a taillé un célèbre caractère de ce type qui a été utilisé depuis lors dans le monde entier ; en Amérique, la première version imprimée de la *Déclaration d'indépendance* a été composée avec des caractères Caslon.

Les caractères néerlandais/anglais modernes comprennent les caractères Caslon (bien sûr) et Janson.

1.3.4 TRANSITIONAL

Transitional types are those based on the Oldstyle types but with features of the style called Modern.

By the end of the sixteenth century the quality of printing in Italy and France had fallen off from when Claude Garamond was working. In 1692 King Louis XIV ordered a new set of types for the Royal Printing House. In a lengthy report the Academy of Sciences recommended a roman type constructed on mathematical principles. Lucien Grandjean who cut the new Romain du Roi allowed his type cutter's eye to sometimes overrule the academicians to the betterment of the result.

Grandjean's type was copied by many others and effectively replaced Oldstyle in Europe. Pierre Simon Fournier (1712–1768) started his typecutting business in 1737, cutting over eighty types in twenty-four years. These were based on Garamond's types but

Les caractères de transition sont ceux basés sur les caractères de style ancien, mais avec des caractéristiques du style dit moderne.

À la fin du XVI^e^ siècle, la qualité de l'impression en Italie et en France avait baissé par rapport à l'époque où Claude Garamond travaillait. En 1692, le roi Louis XIV a commandé un nouveau jeu de caractères pour l'Imprimerie royale. Dans un long rapport, l'Académie des sciences recommande un caractère romain construit sur des principes mathématiques. Lucien Grandjean, qui a taillé le nouveau Romain du Roi, a laissé son œil de tailleur de caractères l'emporter parfois sur les académiciens, pour un meilleur résultat.

Les caractères de Grandjean ont été copiés par beaucoup d'autres et ont effectivement remplacé les caractères anciens en Europe. Pierre Simon Fournier (1712–1768) a commencé son activité de typographe en 1737 et a créé plus de quatre-vingts ca-

Transitional — URW Antiqua
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 &
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 1 2 3 4 5 6 7 8 9 0 ! ? fi fl
It was a dark and stormy night. While all the good men were coming to the aid of the party, the quick brown dog had jumped over the fast red fox to its great surprise. The cattle had wound slowly o'er the lea and I was in the dark.

FIGURE 1.4 – An example of a Transitional type : URW Antiqua

Transitional (newspaper) — New Century Schoolbook
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 &
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 1 2 3 4 5 6 7 8 9 0 ! ? fi fl
It was a dark and stormy night. While all the good men were coming to the aid of the party, the quick brown dog had jumped over the fast red fox to its great surprise. The cattle had wound slowly o'er the lea and I was in the dark.

FIGURE 1.5 – An example of a Transitional newspaper type : New Century Schoolbook

influenced by Grandjean's work. The result was the first intimations of the Transitional types.

The changes on the continent had had little impact in England, but John Baskerville, about 1750, set up a printing shop in Birmingham and created the type that bears his name. Some consider this to be the real beginning of the Transitionals. Baskerville's work was disliked in England but was siezed on with alacrity on the Continent.

Some modern day Transitional types are Baskerville, Bell, Fournier, Georgian, and URW Antiqua which is shown in Figure 1.4.

Much later, around the end of the nineteenth century, another kind of Transitional type was introduced, designed for legibility for newspapers when printed on high speed presses. The counter spaces were open, the serifs were even and strongly bracketed and with a high x-height. Examples are Century designed by Linn Boyd Benton in 1895 for the *Century* magazine, and Cheltenham by Betram Goodhue in 1896, which has become

ractères en vingt-quatre ans. Ces caractères étaient basés sur ceux de Garamond mais influencés par le travail de Grandjean. Le résultat est la première ébauche des caractères de transition.

Les changements sur le continent ont eu peu d'impact en Angleterre, mais John Baskerville, vers 1750, ouvre une imprimerie à Birmingham et crée le caractère qui porte son nom. Certains considèrent que c'est le véritable début des caractères transitionnels. Le travail de Baskerville n'était pas apprécié en Angleterre, mais il a été adopté avec empressement sur le continent.

Parmi les caractères de transition modernes, on trouve les Baskerville, Bell, Fournier, Georgian, et URW Antiqua, illustré à la Figure 1.4.

Beaucoup plus tard, vers la fin du XIX^{e} siècle, un autre type de caractères de transition a été introduit, conçu pour la lisibilité des journaux imprimés sur des presses à grande vitesse. Les contre-espaces étaient ouverts, les empattements étaient réguliers et fortement crochetés, avec une hauteur d'x importante. Parmi les exemples, citons le Century conçu par Linn Boyd Benton en 1895 pour le magazine *Century*, et le Chel-

Modern — GFS Didot
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 &
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 1 2 3 4 5 6 7 8 9 0 ! ? fi fl
It was a dark and stormy night. While all the good men were coming to the aid of the party, the quick brown dog had jumped over the fast red fox to its great surprise. The cattle had wound slowly o'er the lea and I was in the dark.

FIGURE 1.6 – An example of a Modern type : GFS Didot

one of the printers' standard types. Stanley Morison's Times Roman, which he designed for *The Times* of London fits into the Transitional classification. The general characteristics include vertical, or nearly vertical axis, more pronounced contrast compared with the Oldstyle faces, but nowhere nearly as pronounced as the later Didot types. Some have finely, or unbracketed, serifs.

A version of one of the Century series of typefaces, New Century Schoolbook, designed by Morris Benton, is shown in Figure 1.5.

1.3.5 MODERN

Modern in this case means with respect to Transitional and applies to a style of type introduced in the eighteenth century.

Grandjean's Romain du Roi had started a trend in which the contrast between thick and thin strokes gradually increased. Following Baskerville's type, Giambattista Bodoni in Italy and the Didot foundry in France increased the contrast to extreme limits with the thin strokes degenerating into hairlines.

A modern type, GFS Didot, after the style of Didot is illustrated in Figure 1.6.

The general characteristics are vertical axis, exaggerated contrast, and flat, unbracketed, serifs.

1.3.6 SQUARE SERIF

The Victorian printers found that they needed new type forms that would work better than the traditional romans when used with the new and faster breeds of printing

tenham de Betram Goodhue en 1896, qui est devenu l'un des caractères standard des imprimeurs. Le Times Roman de Stanley Morison, qu'il a conçu pour le *Times* de Londres, entre dans la catégorie des caractères transitoires. Les caractéristiques générales comprennent un axe vertical, ou presque vertical, un contraste plus prononcé par rapport aux caractères Oldstyle, mais pas aussi prononcé que les caractères Didot ultérieurs. Certains ont des empattements fins, ou non accolés.

Une version d'un des caractères de la série Century, le New Century Schoolbook, conçu par Morris Benton, est présentée à la Figure 1.5.

Sans-serif — Bera Sans
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 &
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 1 2 3 4 5 6 7 8 9 0 ! ? fi fl
It was a dark and stormy night. While all the good men were coming to the aid of the party, the quick brown dog had jumped over the fast red fox to its great surprise. The cattle had wound slowly o'er the lea and I was in the dark.

FIGURE 1.8 – An example of a Sans-serif type : Bera Sans

Square Serif — Bera Serif
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 &
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 1 2 3 4 5 6 7 8 9 0 ! ? fi fl
It was a dark and stormy night. While all the good men were coming to the aid of the party, the quick brown dog had jumped over the fast red fox to its great surprise. The cattle had wound slowly o'er the lea and I was in the dark.

FIGURE 1.7 – An example of a Square Serif type : Bera Serif

presses, and particularly for use in commercial printing and advertising.

The types went out of fashion during the first half of the twentieth century but have since become more popular with the Clarendon type. An example of Square Serif is shown in Figure 1.7.

1.3.7 SANS-SERIF

Sans-serif types were first created around 1830. In England they were called Grotesques and in America Gothics. Around 1920 there appeared artistic schools such as Expressionism, Constructivism and Cubism. These had a marked effect on typographic styles and the Sans-serif types experienced a great burst of popularity, seeming to express 'modern' ideas. They tend to be geometric in form as opposed to the curvaceous romans.

Examples of modern Sans-serifs are Helvetica, Futura, and, famously, Gill Sans. Yet another sans, Bera Sans, is shown in Figure 1.8.

1.3.8 SCRIPT/CURSIVE

This is a very broad category but essentially the forms are closer to handwriting

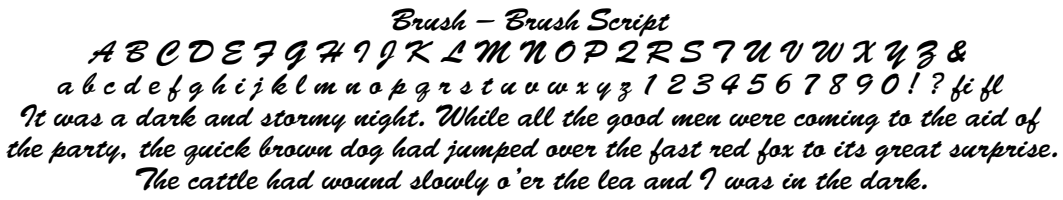


FIGURE 1.9 – An example of a Script/Cursive Brush type : Brush Script

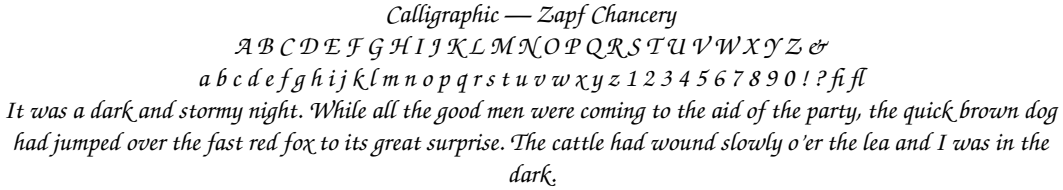


FIGURE 1.10 – An example of a Script/Cursive Calligraphic type : Zapf Chancery

rather than printing. Some are based on letter forms created by drawing with a brush while others are based on forms written using a pen. In general they have an informal presence but some of the latter kind are used in formal settings such as wedding invitations.

Figure 1.9 shows a brush-based script unimaginatively called Brush Script while a calligraphic script, Hermann Zapf's fine Zapf Chancery, is in Figure 1.10.

1.3.9 DISPLAY/DECORATIVE

This is another very broad category but all the members are designed to catch the eye. Display types tend to be used for display purposes and are not meant to be too difficult to read. The decoratives are smaller in scale but can be extremely detailed, such as alphabets based on human figures apparently performing calisthenic exercises. One of the many fonts in this category, Cyklop, is shown in Figure 1.11.

As far as bookwork goes the more restrained of these types may occasionally be useful for book or chapter titles.

Display/Decorative — Cyklop
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 &
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 1 2 3 4
5 6 7 8 9 0 ! ? fi fl
It was a dark and stormy night. While all the good men were coming to the aid of the party, the quick brown dog had jumped over the fast red fox to its great surprise. The cattle had wound slowly o'er the lea and I was in the dark.

FIGURE 1.11 – An example of a Display/Decorative type : Cyklop

1.4 Setting type

Until the last hundred years or so, type has been hand set. Today there are still a few printers who still set type by hand, called now letterpress printing, and on the odd occasion I am one of them. Again, this is a brief description of the process but Chappell (Chappell and Bringhurst 1999) provides much more detail if you are interested. If you have a desire to set up your own small print shop, perhaps in your garage or shed in the garden, then John Ryder has lots of pertinent advice (Ryder. 1976). He directed the design and production of many books for The Bodley Head, and, starting in 1930, produced much interesting work on an Adana quarto press in his home. The Briar Press is another very useful resource, available via the web [5] — and in their words: 'Proudly introducing the bleeding-edge world of personalized desktop publishing circa 1820'!

The type is kept in type-, or job-, cases. These are shallow wooden partitioned trays and traditionally there were two of them for each font — a lower one closer to the typesetter for the minuscule characters and the second one, arranged above the first as an 'upper case', for the majuscules (capitals);

5. http://www.briarpress.org

Jusqu'à il y a une centaine d'années, les caractères étaient disposés à la main. Aujourd'hui, quelques imprimeurs continuent à composer à la main, ce que l'on appelle maintenant l'impression typographique, et il m'arrive d'en faire partie. Là encore, il s'agit d'une brève description du processus, mais Chappell (CHAPPELL et BRINGHURST 1999) vous fournira beaucoup plus de détails si vous êtes intéressé. Si vous avez envie de créer votre propre petite imprimerie, peut-être dans votre garage ou votre cabane de jardin, John Ryder vous donne de nombreux conseils pertinents (RYDER. 1976). Il a dirigé la création et la production de nombreux livres pour The Bodley Head et, à partir de 1930, a produit de nombreux travaux intéressants sur une presse Adana quarto dans sa maison. The Briar Press [5] est une autre ressource très utile, disponible sur le Web — et selon leurs propres termes : « Nous sommes fiers de vous présenter le monde avant-gardiste de la publication assistée par ordinateur personnalisée des années 1820 » !

Les caractères sont conservés dans des casiers appelés casses. Il s'agit de plateaux en bois peu profonds et cloisonnés. Traditionnellement, il y en avait deux pour chaque police : un plateau inférieur, plus proche du typographe, pour les caractères minuscules, et un second, disposé au-dessus du premier

5. http://www.briarpress.org

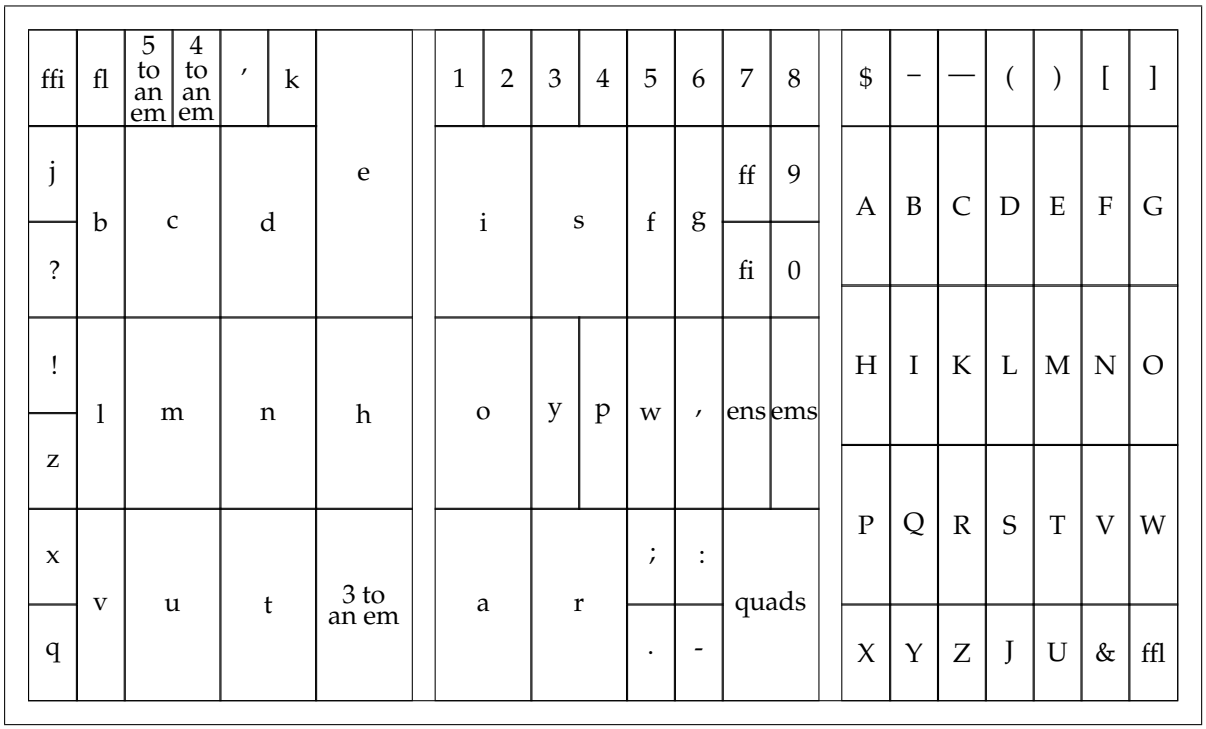


FIGURE 1.12 – The California job case layout

hence the terms lowercase and uppercase characters. The characters are not arranged in alphabetical order but follow a system that is meant to reduce the amount of movement required from the typesetter. The shop where I print uses a ‘California job case’ for type, illustrated in Figure 1.12, which combines both the lowercase and uppercase into a single case. The lowercase letters are arranged in a seemingly semi-random order while the uppercase, which are used much less frequently, are in alphabetical order. The exceptions here are ‘U’ and ‘J’ which are latecomers to the alphabet only being generally accepted in the 16th and 17th centuries, respectively — printing has strong traditions.

A line of type is set, or composed, in a hand-held composing stick, which has an ad-

comme une « casse supérieure », pour les majuscules (capitales) ; d’où le terme « bas de casse » en français, et « *lowercase/uppercase* » en anglais. Les caractères ne sont pas disposés dans l’ordre alphabétique mais selon un système destiné à réduire les déplacements du typographe. L’atelier où j’imprime utilise une « casse californienne » pour les caractères, illustrée par la figure 1.12, qui combine les minuscules et les majuscules en une seule casse. Les minuscules sont disposées dans un ordre apparemment semi-aléatoire tandis que les majuscules, qui sont utilisées beaucoup moins fréquemment, sont classées par ordre alphabétique. Les exceptions sont le ‘U’ et le ‘J’, qui ne sont entrés dans l’alphabet qu’au XVI^{e} et au XVII^{e} siècles respectivement (l’imprimerie a des traditions solides !).

La composition d’une ligne de caractères s’effectue à l’aide d’un composteur, tenu à

justable stop which is set to the required line length. Since the letters read in reverse, right to left, they are assembled upside down, allowing working from left to right by the compositor. The characters for a word are put into the stick, then a space, the next word, a space and on until the line is almost full when it can be justified by inserting small extra spaces between the words. A lead may be put separating this line from the next, which is then built up as before. When several lines have been assembled they are slid from the composing stick onto the composing table, which is a large, smooth and flat marble slab.

When sufficient type has been assembled for printing one sheet of paper it is put into a chase which is a rectangular cast-iron frame, rather like a picture frame. The chase is placed round the type on the composing table and rectangular blocks of wood, called furniture, are placed between the type and the chase to hold the type in position, then expandable metal wedges, called quoins, are inserted to lock the type within the chase. This is essential as the chase and contents will be lifted up and transferred to the press itself — there is nothing like the joy of picking up and sorting out several hundred small pieces of type that have scattered themselves all over the floor, and then putting them all back in the chase in the correct order! The assembled and locked up type, furniture, and chase are called a forme.

There are two basic types of hand press. In the flat-bed type, as used from Gutenberg's day onwards, the forme is fixed on a horizontal bed which is mounted on horizontal rails, the type is inked (usually by hand), a sheet of paper is positioned over the forme, and the bed slid under the platen — a large flat plate — which is then pressed down hard by a screw mechanism to force

la main et doté d'une butée réglable qui permet de régler la longueur de ligne souhaitée. Comme les lettres se lisent en sens inverse, de droite à gauche, elles sont assemblées à l'envers, ce qui permet au compositeur de travailler de gauche à droite. Les caractères d'un mot sont placés dans le support, puis un espace, le mot suivant, un espace, et ainsi de suite jusqu'à ce que la ligne soit presque pleine, et qu'elle puisse être justifiée en insérant de petits espaces supplémentaires entre les mots. Un plomb peut être placé pour séparer cette ligne de la suivante, qui est alors construite comme précédemment. Lorsque plusieurs lignes ont été assemblées, on les fait glisser du bâton de composition sur la table de composition, qui est une grande plaque de marbre lisse et plate.

Lorsqu'on a assemblé suffisamment de caractères pour imprimer une feuille de papier, on les place dans un châssis, qui est un cadre rectangulaire en fonte, un peu comme un cadre de tableau. Le châssis est placé autour des caractères sur la table de composition et des coins en bois rectangulaires sont placés entre les caractères et le châssis pour maintenir les caractères en position, puis des cales métalliques extensibles, appelées noix, sont insérées pour verrouiller les caractères dans le châssis. Cette étape est essentielle car le châssis et son contenu seront soulevés et transférés sur la presse elle-même - rien ne vaut la joie de ramasser et de trier plusieurs centaines de petits morceaux de caractères qui se sont éparpillés sur le sol, puis de les remettre dans le châssis dans le bon ordre ! Les caractères, lee coins et le châssis assemblés et verrouillés sont appelés une forme.

Il existe deux types fondamentaux de presse à main. Dans le cas de la presse à plat, telle qu'elle a été utilisée à partir de l'époque de Gutenberg, la forme est fixée sur un lit horizontal monté sur des rails horizontaux, les caractères sont encrés (généralement à la main), une feuille de papier est placée sur la forme, et le lit est glissé sous la platine — une grande plaque plate — qui est ensuite

the paper against the type. The platen is raised, the bed slid out and the printed sheet removed, ready for the next sheet to be positioned. Originally the presses were made of oak but nowadays are steel and cast iron. Typical of the flat-bed presses are the Albion in England and the Washington in America.

pressée fortement par un mécanisme à vis pour forcer le papier contre les caractères. La platine est relevée, le lit est sorti et la feuille imprimée est retirée, prête pour le positionnement de la feuille suivante. À l'origine, les presses étaient fabriquées en chêne, mais aujourd'hui elles sont en acier et en fonte. Parmi les presses à plat, on peut citer l'Albion en Angleterre et la Washington en Amérique.

The other type is a platen press exemplified by the Excelsior in England and the Chandler & Price, which is the one I use, in America. Here the bed — a rectangular steel plate — is vertical and fixed and the forme is locked onto the bed. Above the bed is a circular disc on which the ink is spread. As the press operates rollers come down over the disc picking up a thin film of ink, then over the forme — thus inking the type — and back up again; while the rollers are inking the type the disc is rotated a few degrees so that the rollers will run over a different section of the disc each time thus improving the uniformity of the ink pickup. A sheet of paper is clipped to the platen which, as the rollers go over the disc, swings up to press the paper against the inked type and then down again so the sheet can be removed and the next one inserted.

L'autre type de presse est une presse à platine, comme l'Excelsior en Angleterre et la Chandler & Price, celle que j'utilise, en Amérique. Ici, le plateau (une plaque d'acier rectangulaire) est vertical et fixe et la forme est verrouillée sur le plateau. Au-dessus du lit se trouve un disque circulaire sur lequel l'encre est étalée. Pendant le fonctionnement de la presse, des rouleaux descendent sur le disque en prélevant une fine pellicule d'encre, puis sur la forme, encrant ainsi les caractères, et remontent. Pendant que les rouleaux encrent les caractères, le disque est tourné de quelques degrés afin que les rouleaux passent sur une section différente du disque à chaque fois, améliorant ainsi l'uniformité de la prise d'encre. Une feuille de papier est fixée au plateau qui, lorsque les rouleaux passent sur le disque, pivote vers le haut pour presser le papier contre les caractères encrés, puis redescend pour que la feuille puisse être retirée et la suivante insérée.

You can see pictures of the presses mentioned above, and many other as well, on the Briar Press website (see page 17).

Vous pouvez voir des photos des presses mentionnées ci-dessus, et de bien d'autres encore, sur le site web de Briar Press (voir page 17).

At the end, the forme is put back on the composing table and any ink is cleaned off the type, which is then taken from the chase and 'distributed' back into the correct places in the typecases(s). The furniture and leads are also put back into the proper places in their respective storage areas.

À la fin, la forme est remise sur la table de composition et l'encre est nettoyée des caractères, qui sont ensuite retirés du châssis et rangés à leur emplacement dans les casses. Les coins et les plombs sont également remis à leur place dans leurs zones de stockage respectives.

If the text is to be printed in multiple colours, the type for the first colour is set with spaces left for the second coloured type,

Si le texte doit être imprimé en plusieurs couleurs, les caractères de la première couleur sont placés en laissant des espaces pour

and then printed. The type for the second colour is set in the spaces left for it, and the first set of type removed and replaced by spaces. The press is cleaned and the first colour ink replaced by the second colour ink. The original partially printed pages are then printed with the next colour. If all is well the differently coloured printed characters will all be aligned. Understandably, it is rare that more than two colours are used.

les caractères de la deuxième couleur, puis imprimés. Les caractères de la deuxième couleur sont placés dans les espaces prévus à cet effet, et la première série de caractères est retirée et remplacée par des espaces. La presse est nettoyée et l'encre de la première couleur est remplacée par celle de la deuxième couleur. Les pages originales partiellement imprimées sont ensuite imprimées avec la couleur suivante. Si tout va bien, les caractères imprimés de couleurs différentes seront tous alignés. Naturellement, il est rare que plus de deux couleurs soient utilisées. Ce qui suit est basé sur ses descriptions.

1.5 Today

Today the great majority of printed works are produced with offset printer presses, the first of which was invented by Ira Washington Rubel in 1903. [6]

In the offset lithography process the original work image is put onto metal foils which are wrapped around a cylinder on the press; ink is picked up by the foil and is transferred to a 'blanket' or 'offset' cylinder that is in contact with the first one. In turn, the ink from the offset cylinder is transferred to the paper which is pressed against it.

Nowadays the original image is created on a computer and the foils produced automatically. The system is excellent for coloured work — one foil is produced for each colour, following the CMYK (Cyan, Magenta, Yellow, Key (black)) subtractive colour system (televisions and computer monitiors use the RGB (Red, Green, Blue) additive colour system). In the lowest capital cost situation only a single station press is used which can print a single colour. To get full colour the paper must be run through the press four times in all, once for each colour (and black) and if both sides are to be printed,

6. Rubel was an American; with a name like that he certainly couldn't be English.

Aujourd'hui, la grande majorité des œuvres imprimées sont produites sur des presses offset, dont la première a été inventée par Ira Washington Rubel en 1903. [6]

Dans le processus de lithographie offset, l'image originale du travail est placée sur des feuilles de métal qui sont enroulées autour d'un cylindre sur la presse ; l'encre est captée par la feuille et transférée sur un cylindre « blanchet » ou « offset » qui est en contact avec le premier cylindre. À son tour, l'encre du cylindre offset est transférée sur le papier qui est pressé contre lui.

Aujourd'hui, l'image originale est créée sur un ordinateur et les films sont produits automatiquement. Le système est excellent pour les travaux en couleur — un film est produit pour chaque couleur, selon le système de couleur soustractif CMYK (cyan, magenta, jaune, noir [7]) (les téléviseurs et les moniteurs d'ordinateur utilisent le système de couleur additif RGB (Rouge, Vert, Bleu)). Dans la situation où le coût d'investissement est le plus bas, seule une presse à une station est utilisée, qui peut imprimer une seule couleur. Pour obtenir la pallet complète de

6. Rubel était américain ; avec un prénom pareil, il ne pouvait certainement pas être anglais.

7. En anglais : *cyan*, *magenta*, *yellow*, *key*, où *key* veut dire « valeur ».

then another four times for the second side. Moving up the scale there are two stand presses that can do two colours in one run, four stand presses that will do all four in one run. [7] In most smaller printing shops single sheets of paper are used which have to be put through the pres(ses) at least twice, once for each side. Newspapers are also printed using offset lithography. In their case, though, web offset printers are used where the paper is fed in continuously from a large roll and is printed on both sides on its journey through the press.

Up and coming are digital presses operating directly from the computer. [8] These are approaching the cost and quality tradeoffs of offset printers and are increasingly being used for on-demand small quantity printing.

Apart from the time and effort involved the principal difference between traditional letterpress printing and the modern methods is the way the ink is put onto the paper. In the traditional method the type is inked and then pressed *into* the paper (think typewriters), while in modern methods the ink is effectively laid *onto* the paper (think inkjet printers). You can sometimes tell if something has been printed by letterpress methods by running a finger lightly over the page; if the lines are 'bumpy' then it has been printed letterpress. Printers using letterpress actually face a dichotomy. In order to obtain the finest detail from the type then it should be pressed as lightly as possible into the paper, but to indicate clearly that it has been letterpress

7. The press shop where I occasionally go to do traditional hand set printing has all of these.

8. Think sophisticated inkjet or colour laser printers.

couleurs, le papier doit être passé quatre fois dans la presse, une fois pour chaque couleur (et le noir) et, si les deux faces doivent être imprimées, quatre autres fois pour la deuxième face. En montant dans l'échelle, on trouve des presses à deux postes qui peuvent faire deux couleurs en un seul passage, et des presses à quatre postes qui peuvent faire les quatre couleurs en un seul passage. [8] Dans la plupart des petites imprimeries, on utilise des feuilles de papier simples qui doivent passer au moins deux fois dans la presse, une fois pour chaque face. Les journaux sont également imprimés par lithographie offset. Mais dans ce cas, on utilise des imprimantes offset à bobines, où le papier est alimenté en continu à partir d'un grand rouleau et est imprimé sur les deux faces lors de son passage dans la presse.

Les presses numériques fonctionnant directement à partir de l'ordinateur [9] sont en plein essor. Ces presses se rapprochent des imprimantes offset en termes de coût et de qualité et sont de plus en plus utilisées pour l'impression de petites quantités à la demande.

Outre le temps et les efforts nécessaires, la principale différence entre l'impression typographique traditionnelle et les méthodes modernes réside dans la manière dont l'encre est appliquée sur le papier. Dans la méthode traditionnelle, les caractères sont encrés puis pressés *dans* le papier (pensez aux machines à écrire), tandis que dans les méthodes modernes, l'encre est effectivement déposée *sur* le papier (pensez aux imprimantes à jet d'encre). Vous pouvez parfois savoir si un document a été imprimé selon la méthode typographique en passant légèrement le doigt sur la page ; si les lignes sont « bosselées », le document a été imprimé selon la méthode typographique. Les impri-

8. L'imprimerie où je vais de temps en temps pour faire de l'impression traditionnelle à la main possède toutes ces presses.

9. Pensez aux imprimantes laser couleur ou à jet d'encre sophistiquées.

printed, then it is advisable to impress hard enough to leave permanent indentations, no matter how slight. As is common, tradeoffs seem inevitable.

meurs qui utilisent la typographie sont en fait confrontés à une dichotomie. Pour obtenir les détails les plus fins des caractères, il faut les presser le plus légèrement possible sur le papier, mais pour indiquer clairement qu'il s'agit d'une impression typographique, il est conseillé d'imprimer suffisamment fort pour laisser des empreintes permanentes, aussi légères soient-elles. Comme souvent, des compromis semblent inévitables.

1.6 Setting maths

I had always wondered how maths was typeset before TeX was available and I eventually found an answer in an article by David Wishart (Wishart 2003). The following is based upon his descriptions.

Je me suis toujours demandé comment les mathématiques étaient composées avant que TeX ne soit disponible et j'ai finalement trouvé une réponse dans un article de David Wishart (WISHART 2003). Ce qui suit est basé sur sa description.

As described above, before the advent of typesetting machines compositors picked pieces of type from a double typecase, typically just containing the upper and lower case roman characters, the numerals and punctuation marks, assembled some lines in a composing stick, and transferred them to a chase, which when full was locked up and then put into the press to print onto the paper. When setting text this is straightforward as each 'line' in the composing stick is a line of text. This is not the case with maths, such as this formula

Comme décrit ci-dessus, avant l'avènement des machines à composer, les typographes prélevaient les caractères dans une double casse, contenant généralement les caractères romains majuscules et minuscules, les chiffres et les signes de ponctuation, assemblaient quelques lignes dans un composteur et les transféraient sur un châssis, qui, une fois plein, était verrouillé puis placé dans la presse pour être imprimé sur le papier. Pour le texte, c'est simple, car chaque ligne du bâton de composition est une ligne de texte. Ce n'est pas le cas avec les mathématiques, comme cette formule :

$$P_{N_1+m} = \frac{C}{N_1+m}\binom{N_2-N_1}{m}\alpha^m\beta^{(N_2-N_1)-m} \tag{1.1}$$

For setting math the compositor will have two double typecases (roman and italic), a case of mathematical sorts containing signs, superscripts and subscripts, etc., and a case of unaccented Greek characters.

Pour la composition des mathématiques, le typographe disposera de deux double-casses (pour le romain et l'italique), d'une casse de caractères mathématiques contenant des signes, des exposants et des souscripteurs, etc. et d'une casse de caractères grecs non accentués.

In order to set maths such as shown as formula 1.1, in an assumed 11 pt font with 24 pt spacing, the widest elements, properly

Pour composer une formule mathématique telle que la formule 1.1, dans une police de 11 pt avec un espacement de 24 pt, les

spaced and centered within the measure, are set in the composing stick as

$$P_{N_1+m} = N_1 + m\binom{N_2 - N_1}{}\alpha^m\beta^{(N_2-N_1)-m}$$

The terms to the right of the = sign are then removed and stored where hopefully they won't be disturbed. A lead of 6.5 pt is then inserted above and below the first terms. The $N_1 + m$ term is taken from the storage, and a piece of 2 pt rule is cut to the exact length of the term and the C centered above it. Then the opening parenthesis is added, so the contents of the composing stick look like:

éléments les plus larges, correctement espacés et centrés dans la ligne, sont placés dans le composteur comme ceci :

Les termes à droite du signe = sont ensuite retirés et stockés là où, espérons-le ils ne seront pas dérangés. Un plomb de 6.5 pt est est ensuite inséré au-dessus et au-dessous des premiers termes. Le terme $N_1 + m$ est pris dans le stock, et un morceau de règle de 2 pt est coupé à la longueur exacte du terme et le C est centré au-dessus de lui. Puis on ajoute la parenthèse ouvrante, de sorte que le contenu du composteur ressemble à ceci :

$$P_{N_1+m} = \frac{C}{N_1 + m}\Big($$

Moving on, the $N_2 - N_1$ term is put in the composing stick and a 2 pt lead put below it with the m centered underneath, then the closing parenthesis is added, so the formula now appears as:

$$P_{N_1+m} = \frac{C}{N_1 + m}\binom{N_2 - N_1}{m}$$

Finally the Greek terms are added, with 6.5 pt leads above and below, resulting in:

$$P_{N_1+m} = \frac{C}{N_1 + m}\binom{N_2 - N_1}{m}\alpha^m\beta^{(N_2-N_1)-m}$$

Even if an automatic caster, such as a Linotype or Monotype, was being used the process was certainly not automatic. With a Monotype caster the operator would produce

$$P_N\mathrm{i}_{+m} = N_1 + m\mathrm{x}N_2 - N_1\mathrm{x}\alpha^m\beta^{(N_\mathrm{i}-N_\mathrm{i})-m}\ C\ m$$

This would then go to the 'marker-up' who would turn it into

$$P_{N_1+m} = \frac{C}{N_1 + m}\binom{N_2 - N_1}{m}\alpha^m\beta^{(N_2-N_1)-m}$$

After 1958 it was slightly easier when Monotype had introduced the '4-line' system but there was still a lot of handwork required. It is, however, much easier using LaTeX where formula 1.1 above was specified as:

Après 1958, la tâche a été rendue un peu plus facile par l'introduction du système « à 4 lignes » de Monotype, mais il fallait encore beaucoup de travail manuel. Il est cependant beaucoup plus facile d'utiliser LaTeX, où la formule 1.1 ci-dessus a été écrite ainsi :

```
\begin{equation}
P_{N_1 + m} = \frac{C}{N_{1} + m} \binom{N_{2} - N_{1}}{m}
              \alpha^{m}\beta^{(N_{2}-N_{1}) - m}
\end{equation}
```

Two

The Parts of a Book

This chapter describes the various parts of a book, the ordering of the parts, and the typical page numbering scheme used in books.

Ce chapitre décrit les différentes parties d'un livre, l'ordre de ces parties et le système de numérotation des pages habituellement utilisé dans les livres.

2.1 Front matter

There are three major divisions in a book: the front matter or preliminaries, the main matter or text, and the back matter or references. The main differences as far as appearance goes is that in the front matter the folios are expressed as roman numerals and sectional divisions are not numbered. The folios are expressed as arabic numerals in the main matter and back matter. Sectional divisions are numbered in the main matter but not in the back matter.

Il y a trois grandes divisions dans un livre : le corps du texte ou les préliminaires, le corps du texte ou le texte principal, et le fond ou les références. En ce qui concerne l'apparence, les principales différences sont les suivantes : dans le corps du texte, les folios sont exprimés en chiffres romains et les divisions en sections ne sont pas numérotées. Les folios sont exprimés en chiffres arabes dans le corps du texte et dans les documents de fond. Les divisions en sections sont numérotées dans le corps du texte mais pas dans le dos du livre.

The front matter consists of such elements as the title of the book, a table of contents, and similar items. All pages are paginated — that is they are counted — but the first few pages in the front matter, the title pages and such, do not usually have folios. The remainder of the pages in the front matter do have folios which are usually expressed as roman numerals. Not all books have all the elements described below.

Le corps du livre comprend des éléments tels que le titre du livre, une table des matières et d'autres éléments similaires. Toutes les pages sont numérotées, c'est-à-dire qu'elles sont comptées, mais les premières pages du frontispice, les pages de titre et autres, ne comportent généralement pas de folios. Les autres pages du frontispice ont des folios qui sont généralement exprimés en chiffres romains. Tous les livres ne comportent pas tous les éléments décrits ci-dessous.

The first page is a recto *half-title*, or *bastard title*, page with no folio. The page is very simple and displays just the main title of the book — no subtitle, author, or other informa-

La première page est appelée *faux-titre*. Cette page est très simple et n'affiche que le titre principal du livre — sans sous-titre, auteur, folio ou autre information. L'un des

tion. One purported purpose of this page is to protect the main title page.

The first verso page, the back of the half-title page, may contain the series title, if the book is one in a series, a list of contributors, a frontispiece, or may be blank. The series title may instead be put on the half-title page or on the copyright page.

The *title page* is recto and contains the full title of the work, the names of the author(s) or editor(s), and often at the bottom of the page the name of the publisher, together with the publisher's logo if it has one.

The title page(s) may be laid out in a simple manner or can have various fol-de-rols, depending on the impression the designer wants to give. In any event the style of this page should give an indication of the style used in the main body of the work.

The verso of the title page is the copyright page. This contains the copyright notice, the publishing/printing history, the country where printed, ISBN and/or CIP information. The page is usually typeset in a smaller font than the normal text.

Following the copyright page may come a dedication or an epigraph, on a recto page, with the following verso page blank.

This essentially completes the unfolioed pages.

The headings and textual forms for the paginated pages should be the same as those for the main matter, except that headings are usually unnumbered.

The first folioed page, usually with roman numerals (e.g., this is folio iii), is recto with the Table of Contents (ToC). If the book contains figures (illustrations) and/or tables, the List of Figures (LoF) and/or List of Tables (LoT) come after the ToC, with no blank pages separating them. The ToC should contain an entry for each following major element.

objectifs de cette page est de protéger la page de titre principale.


Le premier verso, le verso de la page de faux-titre, peut contenir le titre de la série, si le livre fait partie d'une série, une liste des collaborateurs, un frontispice, ou peut être vide. Le titre de la série peut être placé sur la page de faux-titre ou sur la page de copyright.


La *page de titre* est un recto et contient le titre complet de l'ouvrage, le nom de l'auteur ou des auteurs, le nom de l'éditeur et souvent, en bas de page, le nom de l'éditeur, ainsi que son logo s'il en a un.


La ou les pages de titre peuvent être mises en page de manière simple ou comporter des fioritures, selon l'impression que le concepteur veut donner. Dans tous les cas, il est de bon ton que le style de cette page donne une indication du style utilisé dans le corps de l'ouvrage.


Le verso de la page de titre est la page de copyright. Elle contient l'avis de droit d'auteur, l'historique de l'édition/impression, le pays où l'ouvrage a été imprimé, l'ISBN et/ou les informations de catalogage. Cette page est généralement composée en une police de caractères plus petite que le texte normal.


La page de copyright peut être suivie d'une dédicace ou d'une épigraphe, sur une page recto, la page verso suivante étant vierge.


Cela constitue l'essentiel des pages non foliotées.


Les titres et les textes des pages paginées doivent être les mêmes que ceux de la matière principale, sauf que les titres ne sont généralement pas numérotés.


La première page foliotée, généralement en chiffres romains (par exemple, page « iii »), est une page de recto et porte la Table des matières (TdM). Si le livre contient des figures (illustrations) et/ou des tableaux, la liste des figures (LdF) et/ou la liste des tableaux (LdT) viennent après la table des matières, sans page blanche. La table des matières doit

ment. If there is a LoT, say, this should be listed in the ToC. The main chapters must be listed, of course, and so should elements like a preface, bibliography or an index.

There may be a foreword after the listings, with no blank separator. A foreword is usually written by someone other than the author, preferably an eminent person whose name will help increase the sales potential, and is signed by the writer. The writer's signature is often typeset in small caps after the end of the piece.

A preface is normally written by the author, in which he includes reasons why he wrote the work in the first place, and perhaps to provide some more personal comments than would be justified in the body. A preface starts on the page immediately following a foreword, or the lists.

If any acknowledgements are required that have not already appeared in the preface, these may come next in sequence.

Following may be an introduction if this is not part of the main text. The last elements in the front material may be a list of abbreviations, list of symbols, a chronology of events, a family tree, or other information of a like sort depending on the particular work.

Table 2.1 summarises the potential elements in the front matter.

Note that the titles Foreword, Preface and Introduction are somewhat interchangeable. In some books the title Introduction may be used for what is described here as the preface, and similar changes may be made among the other terms and titles in other books.

2.1.1 COPYRIGHT PAGE

Most people are familiar with titles, ToC, prefaces, etc., but like me are probably less

contenir une entrée pour chaque élément majeur suivant. Par exemple, s'il existe une LdT, elle doit être mentionnée dans la TdM. Les principaux chapitres doivent bien sûr être énumérés, tout comme les éléments tels que la préface, la bibliographie ou l'index.

Il peut y avoir un avant-propos après les listes, sans séparateur vide. Un avant-propos est généralement écrit par une personne autre que l'auteur, de préférence une personnalité éminente dont le nom contribuera à augmenter le potentiel de vente, et il est signé par l'auteur. La signature de l'écrivain est souvent tapée en petites capitales après la fin du texte.

Une préface est normalement rédigée par l'auteur, dans laquelle il indique les raisons pour lesquelles il a écrit l'ouvrage en premier lieu, et peut-être quelques commentaires plus personnels que ceux qui seraient justifiés dans le corps du texte. Une préface commence sur la page qui suit immédiatement l'avant-propos, ou les listes.

Si des remerciements sont nécessaires et qu'ils ne figurent pas déjà dans la préface, ils peuvent suivre dans l'ordre.

Une introduction peut suivre si elle ne fait pas partie du texte principal. Les derniers éléments de la préface peuvent être une liste d'abréviations, une liste de symboles, une chronologie des événements, un arbre généalogique ou d'autres informations du même type, selon l'ouvrage concerné.

Le tableau 2.1 résume les éléments candidats de la première partie d'un livre.

Notez que les titres « Avant-propos », « Préface » et « Introduction » sont relativement interchangeables. Dans certains ouvrages, « Introduction » est utilisé pour ce qui est décrit ici comme la préface, et des modifications similaires peuvent être apportées aux autres termes et titres dans d'autres ouvrages.

La plupart des gens connaissent titres, tables des matières, préfaces, etc., mais si

TABLE 2.1 – Front matter

Element	Page	Folio	Leaf
Half-title page	recto	no	1
Frontispiece, etc., or blank	verso	no	1
Title page	recto	no	2
Copyright page	verso	no	2
Dedication	recto	no	3
Blank	verso	no	3
Table of Contents	recto	yes	3 or 4
List of Figures	recto or verso	yes	3 or 4
List of Tables	recto or verso	yes	etc.
Foreword	recto or verso	yes	etc.
Preface	recto or verso	yes	etc.
Acknowledgements	recto or verso	yes	etc.
Introduction	recto or verso	yes	etc.
Abbreviations, etc	recto or verso	yes	etc.

familiar with the contents of the copyright page. In any event this is usually laid out by the publishing house, but some authors may like to be, or are forced into being, their own publisher.

The main point of the copyright page is to display the copyright notice. The Berne Convention does not require that published works carry a copyright notice in order to secure copyright protection but most play it on the safe side and include a copyright notice. This usually comes in three parts: the word *Copyright* or more usually the symbol ©, the year of publication, and the name of the copyright owner. The copyright symbol matches the requirements of the Universal Copyright Convention to which the USA, the majority of European and many Asian countries belong. The phrase 'All rights reserved' is often added to ensure protection under the Buenos Aires Convention, to which most of the Americas belong. A typical copyright notice may look like:

© 2035 by Frederick Jones. All rights reserved.

vous êtes comme moi, vous connaissez sans doute moins bien le contenu de la page de copyright. Quoi qu'il en soit, cette page est généralement établie par la maison d'édition, mais certains auteurs sont leur propre éditeur, par choix ou par contrainte.

L'objectif principal de la page de copyright est d'afficher la mention du copyright. La Convention de Berne n'exige pas que les œuvres publiées portent cette mention afin de garantir la protection du droit d'auteur, mais la plupart des auteurs jouent la carte de la sécurité et incluent le copyright. Celle-ci se compose généralement de trois parties : le mot *Copyright* ou, plus souvent, le symbole ©, l'année de publication et le nom du titulaire du droit d'auteur. Le symbole du droit d'auteur répond aux exigences de la Convention universelle sur le droit d'auteur, à laquelle adhèrent les États-Unis, la majorité des pays européens et de nombreux pays asiatiques. La phrase « Tous droits réservés » est souvent ajoutée pour garantir la protection de la Convention de Buenos Aires, à laquelle adhèrent la plupart des pays d'Amérique. Un avis de droit d'auteur typique ressemble généralement à ceci :

Somewhere on the page, but often near the copyright notice, is the name and location(s) of the publisher.

Also on the copyright page is the publishing history, denoting the edition or editions [1] and their dates, and often where the book has been printed. One thing that has puzzled me in the past is the mysterious row of numbers you often see, looking like:

```
02 01 00 99 98 97    10 9 8 7 6 5
```

The set on the left, reading from right to left, are the last two digits of years starting with the original year of publication. The set on the right, and again reading from right to left, represents the potential number of new impressions (print runs). The lowest number in each group indicates the edition date and the current impression. So, the example indicates the fifth impression of a book first published in 1997.

In the USA, the page often includes the Library of Congress Cataloging-in-Publication (CIP) data, which has to be obtained from the Library of Congress. This provides some keywords about the book.

The copyright page is also the place for the ISBN (International Standard Book Number) number. This uniquely identifies the book. For example: ISBN 0-NNN-NNNNN-2. The initial 0 means that the book was published in an English-speaking country, the next group of digits identify the publisher, the third group identifies the particular book by the publisher, and the final digit, 2 in the example, is a check digit.

It is left as an exercise for the reader to garner more information about obtaining CIP and ISBN data.

1. A second edition should be more valuable than a first edition as there are many fewer of them.

Quelque part sur la page, mais souvent à proximité du copyright, figurent le nom et la ou les adresses de l'éditeur.

La page de copyright contient également l'historique de la publication, indiquant l'édition ou les éditions [1] et leurs dates, et souvent le lieu où le livre a été imprimé. Une chose qui m'a laissé perplexe dans le passé est la mystérieuse rangée de chiffres que l'on voit souvent et qui ressemble à ceci :

```
02 01 00 99 98 97    10 9 8 7 6 5
```

La série de gauche, lue de droite à gauche, correspond aux deux derniers chiffres des années, en commençant par l'année de publication originale. Le groupe de droite, également lu de droite à gauche, représente le nombre potentiel de nouvelles impressions (tirages). Le chiffre le plus bas de chaque groupe indique la date d'édition et l'impression en cours. Ainsi, l'exemple indique la cinquième impression d'un livre publié pour la première fois en 1997.

Aux États-Unis, la page comprend souvent les données de « catalogage avant publication » (CIP, *cataloging in publication*) de la Bibliothèque du Congrès, qui doivent être obtenues auprès de cette dernière. Ces données fournissent quelques mots-clefs relatifs au livre.

La page des droits d'auteur est également l'endroit où figure le numéro ISBN (*International Standard Book Number*). Ce numéro identifie le livre de manière unique. Par exemple : ISBN 0-NNN-NNNNN-2. Le 0 initial signifie que le livre a été publié dans un pays anglophone, le groupe de chiffres suivant identifie l'éditeur, le troisième groupe identifie le livre particulier de l'éditeur, et le dernier chiffre, 2 dans l'exemple, est un chiffre de contrôle.

Nous laissons au lecteur le soin d'obtenir plus d'informations sur l'obtention des

1. Une deuxième édition devrait avoir plus de valeur qu'une première édition car il y en a beaucoup moins.

données CIP et de l'ISBN.

2.2 Main matter

The main matter forms the heart of the book.

Just as in all the other parts of a book the pages within the main matter are included in the pagination, even though some folios may not be expressed. The folios are normally presented as arabic numerals, with the numbering starting at 1 on the first recto page of the main matter.

The main matter is at least divided into *chapters*, unless it is something like a young child's book which consists of a single short story. When the material may be logically divided into sections larger than chapters, the chapters may be grouped into *parts* which would then be the highest level of division within the book. Frederic Connes has told me that in French typography there is often a division above the part level. This is also sometimes the case with English typography where it is typically called a *book* — the *Chicago Manual of Style* (Grossman 1993, p. 21) shows an example. A single physical book may thus be divided into levels from *book* through *part* and *chapter* to further refinements. Typically all of books, parts and chapters are numbered. Obviously, part numbering should be continuous throughout the book, but even with parts the chapter numbering is also continuous throughout the book.

The title of a part is usually on a recto page which just contains the part title, and number if there is one. Book titles are usually treated the same way. Chapters also start on recto pages but in this case the text of the chapter starts on the same page as the chapter title.

Le corps du texte constitue le cœur du livre.

Comme dans toutes les autres parties d'un livre, les pages du corps du texte sont incluses dans la pagination, même si certains folios ne sont pas exprimés. Les folios sont normalement présentés en chiffres arabes, la numérotation commençant à 1 sur la première page recto du corps du texte.

Le corps du texte est au moins divisé en *chapitres*, à moins qu'il ne s'agisse d'un livre pour enfants qui consiste en une seule histoire courte. Lorsque le matériel peut être logiquement divisé en sections plus grandes que des chapitres, les chapitres peuvent être regroupés en *parties* qui constituent alors le plus haut niveau de division du livre. Frédéric Connes m'a dit que dans la typographie française, il y a souvent une division au-dessus du niveau de la partie. C'est aussi parfois le cas dans la typographie anglaise où l'on parle généralement de *livre* — le *Chicago Manual of Style* (GROSSMAN 1993, p. 21) en donne un exemple. Un livre physique unique peut donc être divisé en plusieurs niveaux, du *livre* à la *partie* et au *chapitre*, en passant par d'autres raffinements. En général, tous les livres, parties et chapitres sont numérotés. Il est évident que la numérotation des parties doit être continue tout au long du livre, mais même avec les parties, la numérotation des chapitres est également continue tout au long du livre.

Le titre d'une partie se trouve généralement sur une page recto qui ne contient que le titre de la partie et son numéro, s'il y en a un. Les titres des livres sont généralement traités de la même manière. Les chapitres commencent également sur des pages recto, mais dans ce cas, le texte du chapitre commence sur la même page que le titre du chapitre.

Where chapters are long, or when the material is complicated, they may be divided into sections, each introduced by a subhead, either numbered or unnumbered, with the numbering scheme starting afresh within each chapter. Similarly sections may be partitioned into subsections by inserting sub-subheads, but except for more technical works this is usually as fine as the subdivisions need go to. Normally there are no required page breaks before the start of any subhead within a chapter.

Lorsque les chapitres sont longs, ou lorsque la contenu est complexe, ils peuvent être divisés en sections, chacune étant introduite par un sous-titre, numéroté ou non, le schéma de numérotation recommençant à l'intérieur de chaque chapitre. De même, les sections peuvent être divisées en sous-sections en insérant des sous-sous-titres, mais, sauf pour les ouvrages plus techniques, cette subdivision est généralement aussi fine que nécessaire. Normalement, il n'y a pas de saut de page obligatoire avant le début d'un sous-titre à l'intérieur d'un chapitre.

The title page of a part or chapter need not have the folio expressed, nor a possibly textless verso page before the start of a chapter, but all other pages should display their folios.

La page de titre d'une partie ou d'un chapitre n'a pas besoin d'avoir de folio exprimé, ni une page verso éventuellement sans texte avant le début d'un chapitre, mais toutes les autres pages doivent afficher leurs folios.

There may be a final chapter in the main matter called Conclusions, or similar, which may be a lengthy summary of the work presented, untouched areas, ideas for future work, and so on.

Il peut y avoir un chapitre final dans le corps du livre, intitulé « Conclusion », ou équivalent, qui peut être un long résumé du travail présenté, des domaines non abordés, des idées pour un travail futur, et ainsi de suite.

If there are any numbered appendices they logically come at the end of the main matter. Appendices are often 'numbered' alphabetically rather than numerically, so the first might be Appendix A, the second Appendix B, and so on.

S'il y a des annexes numérotées, elles viennent logiquement à la fin de la partie principale. Les annexes sont souvent "numérotées" par ordre alphabétique plutôt que numérique, de sorte que la première annexe peut être intitulée « Annexe A », la deuxième « Annexe B », et ainsi de suite.

An epilogue or an afterword is a relatively short piece that the author may include. These are not normally treated as prominently as the preceding chapters, and may well be put into the back matter if they are unnumbered.

Un épilogue ou une postface est une pièce relativement courte que l'auteur peut inclure. Ils ne sont généralement pas traités de manière aussi importante que les chapitres précédents et peuvent être placés en fin d'ouvrage s'ils ne sont pas numérotés.

2.3 Back matter

The back matter is optional but if present conveys information ancilliary to that in the main matter. The elements are not normally numbered, so an unnumbered appendix would normally come in the back matter.

La dernière partie est facultative mais, si elle est présente, elle fournit des informations complémentaires à celles de la partie principale. Les éléments ne sont normalement pas numérotés, de sorte qu'un appendice non numéroté se trouve normalement

Other elements include Notes, a Glossary and/or lists of symbols or abbreviations, which could be in the front matter instead. These elements are normally unnumbered, as is any list of contributors, Bibliography or Index.

In some instances appendices and notes may be given at the end of each chapter instead of being lumped at the back.

The first element in the back matter starts on a recto page but the remainder may start on either recto or verso pages.

In older books it was often the custom to have a colophon as the final element in a book. This is an inscription which includes information about the production and design of the book and nearly always indicates which fonts were used.

dans la dernière partie.

D'autres éléments, tels que des notes, un glossaire et/ou des listes de symboles ou d'abréviations, peuvent également figurer au début du livre. Ces éléments ne sont normalement pas numérotés, tout comme la liste des collaborateurs, la bibliographie ou l'index.

Dans certains cas, les annexes et les notes peuvent figurer à la fin de chaque chapitre au lieu d'être regroupées à la fin.

Le premier élément du dos du livre commence sur une page recto, mais les autres peuvent commencer sur des pages recto ou verso.

Dans les livres anciens, il était souvent d'usage d'avoir un colophon comme dernier élément du livre. Il s'agit d'une inscription qui comprend des informations sur la production et la conception du livre et qui indique souvent les polices de caractères utilisées.

2.4 Signatures and casting off

Professionally printed books have many pages printed per sheet of (large) paper, which is then folded and cut where necessary to produce a *gathering* or *signature* of several smaller sheets. An unfolded sheet is called a *broadside*. Folding a sheet in half produces a one sheet *folio* signature with two leaves and four pages. Folding it in half again and cutting along the original fold gives a two sheet *quarto* signature with four leaves and eight pages. Folding in half again, results in a four sheet *octavo* signature with eight leaves and 16 pages, and so on as listed in Table 2.2.

In Table 2.2 the Size column is the untrimmed size of a leaf in the signature with respect to the size of the broadside. When made up into a book the leaves will be trimmed to a slightly smaller size, at the discretion of the designer and publisher; typ-

Quand un professionnel fabrique un livre, il imprime plusieurs pages sur une seule feuille de papier de grande taille, qu'il plie et découpe ensuite pour produire un *cahier* de plusieurs feuilles plus petites. Une feuille dépliée s'appelle un *in-plano*. En pliant une feuille en deux, on obtient un folio de deux feuilles ou de quatre pages. En la pliant à nouveau en deux et en la coupant le long du pli initial, on obtient un cahier *in-quarto* de quatre feuilles ou huit pages. En la pliant à nouveau en deux, on obtient un cahier *in-octavo* comportant huit feuilles ou 16 pages, et ainsi de suite, comme l'indique le tableau 2.2.

Dans le tableau 2.2, la colonne Taille indique la taille non rognée d'un feuillet du cahier par rapport à la taille de l'in-plano. Lorsqu'elles sont assemblées pour former un livre, les feuilles sont rognées à une taille légèrement inférieure, à la discrétion du

TABLE 2.3 – Some American paper sizes (in inches)

'Dollar bill'	7×3	Used for origami, not bills
Statement	8.5×5.5	
Executive	10.5×7.25	
Letter	11×8.5	Also in double, half or quarter size
Old (untrimmed)	12×9	Also called Architectural-A
Legal	14×8.5	
Ledger	17×11	Also called Tabloid
Broadsheet	22×17	As used in newsprint

TABLE 2.2 – Common signatures

Name	Folds	Size	Sheets	Leaves	Pages
Broadside	0	$a \times b$	1	1	2
Folio	1	$b/2 \times a$	1	2	4
Quarto, *4to*	2	$a/2 \times b/2$	2	4	8
Octavo, *8vo*	3	$b/4 \times a/2$	4	8	16
16mo	4	$a/4 \times b/4$	8	16	32
32mo	5	$b/8 \times a/4$	16	32	64
64mo	6	$a/8 \times b/8$	32	64	128

ically a minimum of 1/8 inch or 3 millimetres would be cut from the top, bottom and fore-edge of a leaf.

Other folds can produce other signatures. For example a *sexto*, obtained by folding in thirds and then folding in half, is a three sheet signature with six leaves and 12 pages.

Paper has always been made in a wide range of sizes for a myriad of uses. Table 2.3 lists some common American paper sizes.

Traditionally the sizes are denoted by name but manufacturers did not necessarily make paper of the size that matched the name they gave it. Some common names and trimmed sizes for British book work are given in Table 2.4.

The metric sizes, given in Table 2.5, are those now recommended for book produc-

concepteur et de l'éditeur ; en général, un minimum de 3 millimètres (1/8 de pouce) est coupé en haut, en bas et sur le bord extérieur d'une feuille.

D'autres plis peuvent produire d'autres formats de cahiers. Par exemple, un *in-sexto*, obtenu en pliant en trois puis en deux, est un cahier de six feuilles ou 12 pages.

Le papier a toujours été fabriqué dans une grande variété de formats pour une myriade d'utilisations. Le tableau 2.3 énumère certains formats de papier américains courants.

Traditionnellement, les formats sont désignés par leur nom, mais les fabricants ne produisaient pas nécessairement le papier correspondant au nom qu'ils lui donnaient. Le tableau 2.4 présente quelques noms et formats courants pour les ouvrages britanniques.

Les formats métriques, présentés dans le tableau 2.5, sont ceux qui sont actuelle-

TABLE 2.5 – Metric book paper sizes (in mm)

	untrimmed	trimmed
metric crown octavo	192×126	186×123
metric large crown octavo	205×132	198×129
metric demy octavo	222×141	216×138
metric small royal octavo	240×158	234×156
A5		210×148

TABLE 2.4 – Some traditional British book paper sizes (in inches)

Name	Quarto	Octavo
pott	8×6.5	6.25×4in
foolscap	8.5×6.75	6.75×4.25
crown	10×7.5	7.5×5
post	10×8	8×5
large crown	10.5×8	8×5.25
large post	10.25×8.25	8.25×5.25
small demy	11.25×8.5	8.5×5.675
demy	11.25×8.75	8.75×5.675
medium	11.5×9	9×5.75
small royal	12.25×9.25	9.25×6.175
royal	12.5×10	10×6.25
super royal	13.5×10.25	10.25×6.75
imperial	15×11	11×7.5

tion where the metric system holds sway, which includes the UK (McLean 1980, p. 104).

In making up the book, the pages in each signature are first fastened together, usually by sewing through the folds. The signatures are then bound together and the covers, end papers and spine are attached to form the completed whole.

Commercial printers use paper larger than shown in the previous tables; they print several (final) pages on a single sheet, then fold it and trim it down to the finished page size. Table 2.6 is from (Wilson 1993, p. 59). He also says that other common trimmed sizes are 9.25×6.125 in out of 50×38 in sheets, 10.25×8.25 in out of 45×35 in sheets, and

ment recommandés pour la production de livres dans les pays où le système métrique est en vigueur, ce qui inclut le Royaume-Uni (MCLEAN 1980, p. 104).

Lors de la fabrication du livre, les pages de chaque cahier sont d'abord attachées ensemble, généralement en cousant à travers les plis. Les cahiers sont ensuite reliés ensemble et les couvertures, les pages de garde et le dos sont fixés pour former l'ensemble.

Les imprimeurs commerciaux utilisent du papier plus grand que celui indiqué dans les tableaux précédents ; ils impriment plusieurs pages (finales) sur une seule feuille, puis la plient et la coupent au format de la page finie. Le tableau 2.6 est tiré de (WILSON 1993, p. 59). Il indique également que d'autres formats rognés courants sont

TABLE 2.6 – Common American commercial paper sizes (in inches)

Sheet size	Book trim size	Common use	Pages per sheet (max)
45×35	8.5×5.5	scholarly works	32 pages
50×38	9.25×6.125	major nonfiction	32 pages
66×44	8×5.375	fiction & minor fiction	64 pages
68×45	8.25×5.5	major fiction & nonfiction	64 pages
45×35	11×8.5	children's books, manuals	16 pages
50×38	12.125×9.25	art monographs, children's books	16 pages

so on.

Publishers like the final typeset book to be of a length that just fits within an integral number of signatures, with few if any blank pages required to make up the final signature. Casting off is the process of determining how many lines a given text will make in a given size of type, and hence how many pages will be required.

To cast off you need to know how many characters there will be in a line, and how many characters there are, or will be, in the text. For the purposes of casting off, 'characters' includes punctuation as well as letters and digits. The first number can be easily obtained, either from copy fitting tables or by measurement; this is described in more detail in §3.3. The second is more problematic, especially when the manuscript has yet to be written. A useful rule of thumb is that words in an English text average five letters plus one space (i.e., six characters); word length in technical texts might be greater than this.

To determine the number of words it is probably easiest to type a representative portion of the manuscript, hand count the words and then divide that result by the proportion

9.25×6.125 po sur des feuilles de 50×38 po, 10.25×8.25 po sur des feuilles de 45×35 po, et ainsi de suite.

Les éditeurs aiment que le livre final soit d'une longueur qui corresponde à un nombre entier de cahiers, avec peu ou pas de pages blanches à ajouter pour remplir le dernier cahier. Le *casting off* (**Traduction :** ??? Le dictionnaire dit « To estimate the space a manuscript will occupy when set into type ») est le processus qui consiste à déterminer le nombre de lignes d'un texte donné dans une taille de caractères donnée, et donc le nombre de pages nécessaires.

Pour effectuer ce calcul, il faut savoir combien de caractères il y aura dans une ligne et combien de caractères il y a ou il y aura dans le texte. Dans le cadre du décalage, les « caractères » comprennent la ponctuation, les lettres et les chiffres. Le premier nombre peut être facilement obtenu, soit à partir des tables d'ajustement des copies, soit par mesure ; ceci est décrit plus en détail au§ 3.3. Le second est plus problématique, surtout lorsque le manuscrit n'a pas encore été écrit. Une règle empirique utile est que les mots d'un texte anglais ont en moyenne cinq lettres plus un espace (c'est-à-dire six caractères) ; la longueur moyenne des mots dans les textes techniques peut être supérieure à cette valeur.

Pour déterminer le nombre de mots, le plus simple est probablement de taper une partie représentative du manuscrit, de compter les mots à la main, puis de diviser le ré-

of the complete text that you have typed. For example, if you have typed 1/20 th of the whole, then divide by 1/20, which is equivalent to multiplying by 20. To fully estimate the number of pages required it is also necessary to make allowance for chapter titles, illustrations, and so forth.

If it turns out, say, that your work will require 3 signatures plus 2 pages then it will be more convenient to make it fit into 3 signatures, or 4 signatures minus a page or two. This can be done by expanding or cutting the text and/or by changing the font and/or by changing the number or width of lines on a page.

When I was editing a technical journal the authors were given a word limit. The primary reason was not that we were interested in the actual word count but rather so that we could estimate, and possibly limit, the number of pages allotted to each article; we used *octavo* signatures and no blank pages. I suspect that it is the same with most publishers — it is the page count not the word count that is important to them.

In some special cases, extra pages may be 'tipped in' to the body of the book. This is most likely to occur for illustrations which require special paper for printing and it would be too costly to use that paper for the whole work. Another example is for a fold-out of some sort, a large map, say, or a triple spread illustration. The tipped in pages are glued into place in the book and may or may not be paginated. For tipped in illustrations, a List of Illustrations may well start with a phrase like: 'Between pages 52 and 53'.

sultat par la proportion du texte complet que vous avez tapé. Par exemple, si vous avez tapé un vingtième de l'ensemble, divisez par 1/20, ce qui équivaut à multiplier par 20. Pour bien estimer le nombre de pages nécessaires, il faut également tenir compte des titres de chapitre, des illustrations, etc.

S'il s'avère, par exemple, que votre travail nécessitera 3 cahiers plus 2 pages, il sera plus pratique de le faire tenir dans 3 cahiers, ou 4 cahiers moins une page ou deux. Cela peut se faire en élargissant ou en coupant le texte et/ou en changeant la police de caractères et/ou en modifiant le nombre ou la largeur des lignes sur une page.

Lorsque j'étais rédacteur d'une revue technique, les auteurs étaient soumis à une limite de mots. La raison principale n'était pas que nous étions intéressés par le nombre réel de mots mais plutôt que nous pouvions estimer, et éventuellement limiter, le nombre de pages allouées à chaque article ; nous utilisions des cahiers *in octavo* et aucune page blanche. Je soupçonne qu'il en va de même pour la plupart des éditeurs - c'est le nombre de pages et non le nombre de mots qui est important pour eux.

Dans certains cas particuliers, des pages supplémentaires peuvent être insérées dans le corps du livre. Cela se produit le plus souvent pour des illustrations qui nécessitent un papier spécial pour l'impression et il serait trop coûteux d'utiliser ce papier pour l'ensemble de l'ouvrage. Un autre exemple est celui d'un dépliant, une grande carte, par exemple, ou une illustration à triple page. Les pages encartées sont collées dans le livre et peuvent être paginées ou non. Dans le cas d'illustrations encartées, la liste des figures peut commencer par une phrase comme « Entre les pages 52 et 53 ».

2.5 Paper

Paper, on which I assume your work will be printed, can be thought of in seven cate-

gories, six of which are used in the making of books. The categories are:

Special is not used for books. It includes 'wet strength tissues' and other sanitary, cosmetic and industrial papers.

Wrapping papers are for protective purposes. Of these kraft paper is made from unbleached chemical wood fibre sized with resin. The fibres are long and strong, hence the name 'kraft' from the German word for 'strength'. The usual colour is brown. Kraft paper is used in bookbinding for reinforcing endpapers and, strengthening and shaping spines.

Printing paper covers a wide range, from economical to expensive, in surface finish from rough to highly polished (for fine art four colour printing), and in colour.

Writing paper is suitable for all stationery requirements. Ledger paper is made from rag fibre, or a mixture of rag and wood pulp, and is strong, opaque and durable, with a smooth surface. It is used for visitor's and account books and registers, and for fine printing. Bank and bond papers are of good quality, strong, durable and nearly Ph neutral; they are made from fibres of chemical wood sized with resin. In books they are mainly used for strengthening damaged signatures. Artists' and designers' drawing papers usually have a rough surface — cartridge paper, made from well sized chemical wood fibres, is often used for tipped on endpapers.

Decorative papers used for the endpapers and sides of books are of an extensive variety of colours, textures, patterns, and quality. Any decorative paper used in a book should be strong with a good firm surface.

Ingres and similar papers are mould-made from linen and/or cotton with a little

wood pulp. They come from Europe in a variety of quiet colours and are used in fine bindings for sides and endpapers.

Japanese papers and tissues are mould-made from good quality rag fibre. They are fine but strong and are extensively used for repairing documents, mending leaves, and replacing damaged or missing areas. I find Kozo paper very useful for repairing documents and, for example, as hinges when bookbinding. Although not paper, there are some wonderful Japanese bookcloths for binding covers.

Machine-made paper, which is the commonest, comes in a number of sometimes overlapping categories, of which the main ones are:

Antique papers are soft textured papers originally made for letterpress printing, but there are now surface sized ones for offset lithography.

Machine finish papers have varying degrees of surface smoothness. They are also known as super-calendered or English.

Coated paper has been flooded with fine clay and adhesive to make them particularly good for halftones. Finishes range from dull through matte to glossy.

Impregnated papers are also known as pigmented. They are surface sized, lightly coated and calendered and can take halftones, especially by lithography.

Text papers are textured and coloured and are useful for limited editions, book jackets and end papers. They often have a deckle edge on the two long sides.

Cover papers are heavier varieties of text and other papers and are typically used for pamphlet binding and paperback covers.

Moldmade papers are made by machine to resemble handmade papers, with deckle edges. They come in a wide range of textures, colours, and weights. The available range includes papers suitable for binding sides, endpapers, book jackets, or the text block.

Handmade paper comes as single sheets but machine made paper can be obtained in either rolls or sheets. For some letterpress printing I recently bought some Strathmore 400 Drawing Paper as 3×30 feet rolls at about $1/3$ the price of the same quantity of paper in sheet form; the downside was that I had to slice it up into the sheet size I wanted to use, but in this case the upside was that I tore rather than cut and obtained sheets with deckle edges on all four sides so that at the end it looked rather like handmade paper.

Paper for printing comes in different grades according to the intended use. The common ones, together with their manufactured size in inches, are (Ramano and Riordan 2007):

Bond (17×22**)** Commonly used for letters and business forms. They have surfaces acceptible for both pen and pencil.

Coated (25×38**)** For high quality printed work because of their surface smoothness and uniform ink receptivity.

Text (25×38**)** These often have interesting textures and a range of colours and are used for notices, brochures and booklets. There are often treated with a special sizing making them more resistant to water penetration and easy to print.

Book (25×38**)** Are used for book and trade printing. They are less expensive than text papers but come in a wider range of weights and bulk.

Offset (25×38**)** Are similar to the coated and uncoated book paper used for letterpress printing but with sizing added to enhance offset printing.

Cover (20×26**)** Complement coated and text papers in matching colours and heavier weights for booklet covers, etc. It is a handy rule of thumb that cover paper has about twice the thickness of text paper of the same weight. If being used for postcards check that your choice is acceptable to the postal services.

Index (22.5×35 **and** 25.5×30.5**)** Is stiff and easy to write on with a pen.

Tag (24×36**)** A strong utility paper for making tags.

Bristol (22.5×28.5**)** One of the board grades but softer than index or tag and easier to fold.

Newsprint(24×36**)** The paper newspapers are printed on.

Lightweight Covers a wide range of specialty papers such as onion skin or Bible paper.

Digital Specialty paper for use with digital printers. Each technology (e.g., inkjet, laser) and often the particular printer tends to have its own requirements.

It is not often that books include information about the paper on which they are printed. If they do they are likely to be fine press books or limited editions, but even then most I have seen are silent on the matter. A few trade books do include details. Among the more popular papers[2] I have come across are: Arches, of various kinds; Curtis Rag; Fabriano; Glatfelter; Linweave Early American, which has been used by the University of California press; Mohawk Superfine; Warren's Old Style, which has been used for several books published by the University of California; and Strathmore of several kinds.

2. Meaning that I know that they have been used in more than one book.

Il est rare que les livres contiennent des informations sur le papier sur lequel ils sont imprimés. S'ils le font, il s'agit probablement de livres de luxe ou d'éditions limitées, mais même dans ce cas, la plupart des livres que j'ai vus sont muets à ce sujet. Quelques livres commerciaux contiennent des détails. Parmi les papiers les plus populaires que j'ai rencontrés, on trouve : Arches, de différentes sortes ; Curtis Rag ; Fabriano ; Glatfelter ; Linweave Early American, qui a été utilisé par la presse de l'Université de Californie ; Mohawk Superfine ; Warren's Old Style, qui a été utilisé pour plusieurs livres publiés par l'Université de Californie ; et Strathmore de différentes sortes.

TABLE 2.7 – US basis size of various papers

Paper type	Size (inches)	Ream (sheets)
Bond, writing, ledger	17×22	500
Coated, book, offset, text	25×28	500
Cover	20×26	500 or 1000
Index	$25\,1/2 \times 30\,1/2$	500
Tag	24×36	500
Bristol	$22\,1/2 \times 28\,1/2$	500
Newsprint	24×36	500
Tissue	24×36	480
Paperboard	12×12	1000

At the time of writing I have finished hand letterpress printing a small book of 35 printed pages on Strathmore 400 Drawing Paper and an accordian book on Chinese Scholars on Southworth 32 lb cotton paper. I am in the process of letterpress printing a collection of poems as individual broadsides and for these I am using a variety of papers from my local retail paper suppliers, all in letterpaper size — the regular US paper size for most non-commercial printing (in most of the world this would be the A4 size). These include: Wausau Royal Silk 24 lb (90g/m^2); Construction 70 lb text; Exact Opaque Colors 24/60 lb text; Wausau Exact Vellum Bristol 67 lb (145g/m^2); Curious Lightspecs 70 lb text; Eames Furniture Weave 80 lb text; Speckletone Kraft 70 lb text; and various Southworth papers. Thus, in different weights (thicknesses), colours and surface finishes.

As you can see, paper comes in various weights. In most of the world this is simply specified as grams per square meter (g/m^2, sometimes designated as *gsm*). This quantity is properly called *grammage* but English speaking countries often use *weight* instead. Typical office paper is about 80g/m^2, so an A4 sheet (1/16m^2) weighs about 5g.

In the US and a few other places it is much more complicated. The weight is ex-

TABLE 2.8 – Approximate paper weight equivalents

Paper grade	Grammage g/m^2	Thickness inches	Caliper mm
16 lb bond, 40 lb text	59	0.0032	0.081
45 lb text	67	0.0036	0.092
20 lb bond	75	0.0038	0.097
24 lb bond, 60 lb text	89	0.0048	0.120
70 lb text	104	0.0058	0.147
80 lb text	118	0.0061	0.155
67 lb bristol, 100 lb text	148	0.0073	0.185
60 lb cover, 90 lb index	162	0.0074	0.188
65 lb cover, 80 lb bristol	176	0.0078	0.198
110 lb index	199	0.0085	0.216
80 lb cover	216	0.0092	0.234

pressed in terms of *basis weight* in pounds (lbs) for a known quantity of the paper. The 'known quantity' is a ream of paper of given dimensions. However, the 'given dimensions' and the 'ream' varies according to the type of paper. The dimensions are usually not those of the finished product, but of the paper as made before being cut into the final sizes. The advertised weight on a package of paper is no measure of the actual weight of the package that is being presented for sale. In some cases, though, an 'M weight' is also given, which is the weight (in pounds) of 1000 cut sheets. Suppliers will often charge by the M weight as it is always consistent for a given paper size and it also makes the shipping weight easy to calculate. Some basis weights are listed in Table 2.7.

Sheets 17×22 in can be cut into four $8\,1/2 \times 11$ in letterpaper sized sheets, the regular size used by business. Similarly sheets 25×38 in can be cut into sixteen 6×9 in book-sized sheets with little wastage. These two ream sizes are among the most common ones.

Paper thickness, or *caliper*, is a common measurement used for some printing applications. This is usually measured directly because it can only be estimated as the density of the paper is not known. However rea-

sonable estimates can be made for different weights of the same kind of paper.

Approximate paper weight equivalents are shown in Table 2.8. These are approximate because there are trade-offs between the characteristics within the same basic weight which vary between manufactures.

Three

The page

Authors usually want their works to be read by others than themselves, and this implies that their manuscript will be reproduced in some manner. It is to be hoped that the published version of their work will attract readers and there are two aspects to this. The major is the actual content of the work — the thoughts of the author couched in an interesting manner — if something is boring, then there are too many other interesting things for the reader to do than to plow on until the bitter end, assuming that he even started to read seriously after an initial scan. The other aspect is the manner in which the content is displayed. Or, in other words, the *typography* of the book, which is the subject of this chapter.

The essence of good typography is that it is not noticeable at first, or even second or later, glances to any without a trained eye. If your initial reaction when glancing through a book is to exclaim about its layout then it is most probably badly designed, if it was designed at all. Good typography is subtle, not strident.

With the advent of desktop publishing many authors are tempted to design their own books. It is seemingly all too easy to do. Just pick a few of the thousands of fonts that are available, use this one for headings, that one for the main text, another one for captions, decide how big the typeblock is to be, and there you are.

However, just as writing is a skill that has

Les auteurs souhaitent généralement que leurs œuvres soient lues par d'autres qu'eux-mêmes, ce qui implique que leur manuscrit sera reproduit d'une manière ou d'une autre. Il est à espérer que la version publiée de leur œuvre attirera des lecteurs et il y a deux aspects à cela. Le principal est le contenu de l'œuvre — les pensées de l'auteur formulées de manière intéressante — si quelque chose est ennuyeux, alors le lecteur aura bien d'autres choses à faire que de continuer la lecture de ce livre, en supposant qu'il ait commencé à lire sérieusement après un premier coup d'œil. L'autre aspect est la manière dont le contenu est présenté. Ou, en d'autres termes, la *typographie* du livre, qui fait l'objet de ce chapitre.

L'essence d'une bonne typographie est qu'elle ne se remarque pas au premier, voire au deuxième ou au troisième regard, pour qui n'a pas l'œil exercé. Si votre première réaction en feuilletant un livre est de vous exclamer sur sa mise en page, c'est qu'il est très probablement mal conçu, si tant est qu'il l'ait été. Une bonne typographie est subtile, pas ostentatoire.

Avec l'avènement de la publication assistée par ordinateur, de nombreux auteurs sont tentés de concevoir leurs propres livres. C'est en apparence très simple à faire. Il suffit de choisir quelques polices parmi les milliers disponibles, d'utiliser celle-ci pour les titres, celle-là pour le texte principal, une autre pour les légendes, de décider de la taille du bloc de caractères et le tour est joué.

Cependant, tout comme l'écriture est

to be learned, typography is also an art that has to be learned and practised. There are hundreds of years of experience embodied in the good design of a book. These are not to be cast aside lightly and many authors who design their own books do not know what some of the hard-earned lessons are, let alone that what they are doing may be the very antithesis of these. An expert can break the rules, but then he is aware that he has good reasons for breaking them.

une compétence qui doit être apprise, la typographie est également un art qui doit être appris et pratiqué. La bonne conception d'un livre est le fruit de centaines d'années d'expérience. Elles ne doivent pas être mises de côté à la légère et de nombreux auteurs qui conçoivent leurs propres livres ne connaissent pas ces leçons durement apprises, et ce qu'ils font peut en être l'antithèse. Un expert peut enfreindre les règles, mais il sait alors qu'il a de bonnes raisons de le faire.

The author supplies the message and the typographer supplies the medium. Contrary to Marshall McLuhan, the medium is *not* the message, and the typographer's job is not to intrude between the message and the audience, but to subtly increase the reader's enjoyment and involvement. If a book shouts 'look at me!' then it is an advertisement, and a bad one at that, for the designer.

L'auteur fournit le message et le typographe fournit le support. Contrairement à Marshall McLuhan, le support n'est *pas* le message, et le travail du typographe n'est pas de s'immiscer entre le message et le public, mais d'augmenter subtilement le plaisir et l'implication du lecteur. Si un livre crie « regardez-moi ! », il s'agit d'une publicité, et d'une mauvaise publicité, pour le concepteur.

3.1 The shape of a book

Books come in many shapes and sizes, but over the centuries certain shapes have been found to be more pleasurable and convenient than others. Thus books, except for a very very few, are rectangular in shape. The exceptions on the whole are books for young children, although I do have a book edited by Fritz Spiegl and published by Pan Books entitled *A Small Book of Grave Humour*, which is in the shape of a tombstone — this is an anthology of epitaphs. Normally the height of a book, when closed, is greater than the width. Apart from any aesthetic reasons, a book of this shape is physically more comfortable to hold than one which is wider than it is high.

Les livres existent en toutes sortes de formes et de tailles, mais au fil des siècles, certaines formes se sont avérées plus agréables et plus pratiques que d'autres. Ainsi, les livres, à l'exception d'un très petit nombre, sont de forme rectangulaire. Les exceptions sont généralement des livres pour jeunes enfants, bien que je possède un livre édité par Fritz Spiegl et publié par Pan Books, intitulé *A Small Book of Grave Humour*, qui a la forme d'une pierre tombale — il s'agit d'une anthologie d'épitaphes. Normalement, la hauteur d'un livre, lorsqu'il est fermé, est supérieure à sa largeur. En dehors de toute raison esthétique, un livre de cette forme est physiquement plus confortable à tenir qu'un livre plus large que haut.

It might appear that the designer has great freedom in choosing the size of the work, but for economic reasons this is not normally the case. Much typographical de-

On pourrait penser que le concepteur a une grande liberté dans le choix du format de l'œuvre, mais pour des raisons économiques, ce n'est généralement pas le cas.

sign is based upon the availabilty of certain standard industrial sizes of sheets of paper. A page size of 12×8 inches will be much more expensive than one which fits on a standard US letter sheet of $11 \times 8\,1/2$ inches. Similarly, one of the standard sizes for a business envelope is $4\,1/8 \times 9\,1/2$ inches. Brochures for mailing should be designed so that they can be inserted into the envelope with minimal folding. Thus a brochure size of 5×10 inches will be highly inconvenient, no matter how good it looks visually.

Over the years books have been produced in an almost infinite variety of proportions, where by *proportion* I mean the ratio of the height to the width of a rectangle. However, certain proportions occur time after time throughout the centuries and across many different countries and civilizations. This is because some proportions are inherently more pleasing to the eye than others are. These pleasing proportions are also commonly found in nature — in physical, biological, and chemical systems and constructs.

Some examples of pleasing proportions can be seen in Japanese wood block prints, such as the *Hoso-ye* size $(2 : 1)$ which is a double square, the *Oban* $(3 : 2)$, the *Chuban* $(11 : 8)$ and the *Koban* size $(\sqrt{2} : 1)$. Sometimes these prints were made up into books, but were often published as stand-alone art work. Similarly Indian paintings, at least in the 16th to the 18th century, often come in the range $1.701 : 1$ to $13 : 9$, thus being around $3 : 2$ in proportion.

In medieval Europe page proportions were generally in the range $1.25 : 1$ to $1.5 : 1$. Sheets of paper were typically produced in the proportion $4 : 3$ $(1.33 : 1)$ or $3 : 2$ $(1.5 : 1)$. All sheet proportions have the property that they are reproduced with each alternate folding of the sheet. For example, if a sheet starts at a size of 60×40 (i.e., $3 : 2$), then the

Une grande partie de la conception typographique est basée sur la disponibilité de certains formats industriels standard de feuilles de papier. Une page de 12×8 pouces sera beaucoup plus chère que celle qui tient sur une feuille de papier standard de $11 \times 8\,1/2$ pouces. De même, l'un des formats standard d'une enveloppe commerciale est de $4\,1/8 \times 9\,1/2$ pouces. Les brochures destinées à être envoyées par la poste doivent être conçues de manière à pouvoir être insérées dans l'enveloppe avec un minimum de pliage. Ainsi, une brochure de 5×10 pouces sera très peu pratique, quelles que soient ses qualités esthétiques.

Au fil des ans, les livres ont été produits dans une variété presque infinie de proportions. Par proportion, j'entends le rapport entre la hauteur et la largeur d'un rectangle. Cependant, certaines proportions reviennent régulièrement au fil des siècles et dans de nombreux pays et civilisations différents. Cela s'explique par le fait que certaines proportions sont intrinsèquement plus agréables à l'œil que d'autres. Ces proportions agréables se retrouvent également dans la nature, dans les systèmes et constructions physiques, biologiques et chimiques.

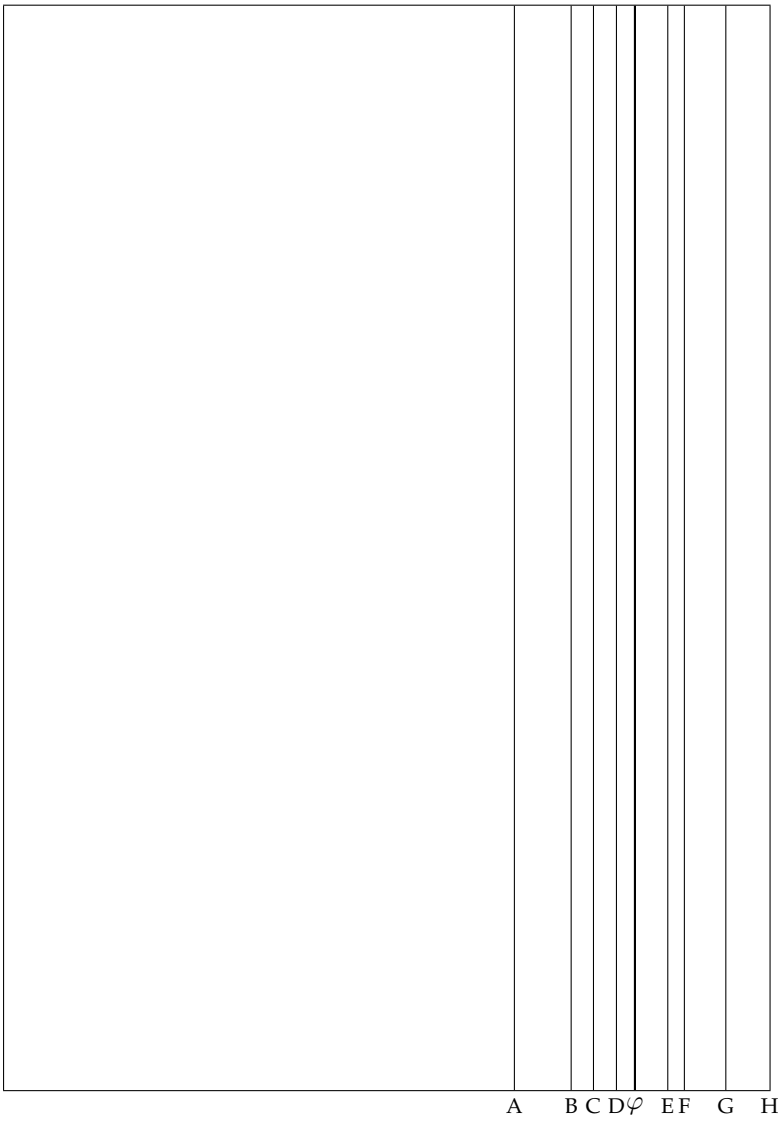
first fold will make a double sheet of size 30×40 (i.e., $3 : 4$). The next fold will produce a quadrupled sheet of size 30×20, which is again $3 : 2$, and so on. The Renaissance typographers tended to like taller books, and their proportions would go up to $1.87 : 1$ or so. The style nowadays has tended to go back towards the medieval proportions.

The standard ISO page proportions are $\sqrt{2} : 1$ ($1.414 : 1$). These have a similar folding property to the other proportions, except in this case each fold reproduces the original page proportion. Thus halving an A0 sheet (size 1189×841 mm) produces an A1 size sheet (594×841), which in turn being halved produces the A2 sheet (420×594), down through the A3, A4 (210×297 mm), A5, ... sheets.

For many years it was thought that it was impossible to fold a sheet of paper, no matter how large and thin, more than eight times altogether. This is not so as in 2002 a high school student, Britney Gallivan, managed to fold a sheet of paper in half twelve times (see, for example, http://mathworld.wolfram.com/Folding.html).

There is no one perfect proportion for a page, although some are clearly better than others. For ordinary books both publishers and readers tend to prefer books whose proportions range from the light $9 : 5$ ($1.8 : 1$) to the heavy $5 : 4$ ($1.25 : 1$). Some examples are shown in Figure 3.1. Wider pages, those with proportions less than $\sqrt{2} : 1$ ($1.414 : 1$), are principally useful for documents that need extra width for tables, marginal notes, or where multi-column printing is preferred.

In books where the illustrations are the primary concern, the shape of the illustrations is generally the major influence on the page proportion. The page size should be somewhat higher than that of the average illustration. The extra height is required for the insertion of captions describing the illustration. A proportion of $\pi : e$ ($1.156 : 1$), which is slightly higher than a perfect square,



A $2:1$
B $9:5$
C $1.732:1$ ($\sqrt{3}:1$)
D $5:3$
φ $1.618:1$ ($\varphi:1$)
E $1.538:1$
F $3:2$
G $1.414:1$ ($\sqrt{2}:1$)
H $4:3$

FIGURE 3.1 – Some page proportions

is good for square illustrations.[1] The $e : \pi$ ($0.864 : 1$) proportion is useful for landscape photographs taken with a 4×5 format camera, while those from a 35 mm camera (which produces a negative with a $2 : 3$ proportion) are better accomodated on an $0.83 : 1$ page.

1. Both e and π are well known mathematical numbers. e ($= 2.718\ldots$) is the base of natural logarithms and π ($= 3.141\ldots$) is the ratio of the circumference of a circle to its diameter.

3.1.1 THE GOLDEN SECTION AND FIBONACCI SERIES

Typographers need a modicum of mathematical ability, but no more than an average teenager can do — basically simple arithmetic. You can skip this section if you wish as it just provides some background mathematical material which might be of interest.

Since ancient Greek times or even before, the golden section, which is denoted by the Greek letter φ (phi), has been considered to be a particularly harmonious proportion. It should come as no surprise, then, that this also has applications in typography.

The Greeks were interested in geometry (think of Euclid). They discovered that if you divide a straight line into two unequal parts then a certain division appeared to have an especially appealing aesthetic quality about it. Call the length of the line l and the length of the two parts a and b, where a is the smaller and b is the larger. The division in question is when the ratio of the larger to the smaller division (b/a) is the same as the ratio of the whole line to the larger division (l/b). More formally, two elements embody the golden section, symbolised by φ, when the ratio of the larger to the smaller is the same as the ratio of the sum of the two to the larger. If the two elements are a and b, with $a < b$, then

$$\varphi = \frac{b}{a} = \frac{a+b}{b} = (1+\sqrt{5})/2 \qquad (3.1)$$

The golden section has been called by a number of different names during its history.

Euclid called it the 'extreme and mean ratio' while Renaissance writers called it the 'divine proportion'; now it is called either the 'golden section' or the 'golden ratio'. The symbol φ is said to come from the name of the Greek artist Phidias (C5th BC) who often used the golden section in his sculpture. A rectangle whose sides are in the same proportion as the golden section is often called a 'golden rectangle'. The front of the Parthenon on the Acropolis in Athens is a golden rectangle, and such rectangles appear often in Greek architecture. The symbol of the Pythagoran school was the star pentagram, where each line is divided in the golden section.

The approximate decimal value for φ is 1.61803. The number has some unusual properties. If you add one to φ you get its square, while subtracting one from φ gives its reciprocal.

$$\varphi + 1 = \varphi^2 \tag{3.2}$$
$$\varphi - 1 = 1/\varphi \tag{3.3}$$

It also has a very simple definition as the continued fraction

$$\varphi = 1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{1 + \cdots}}}} \tag{3.4}$$

In 1202 Leonardo Pisano, also known as Leonardo Fibonacci, wrote a book called *Liber Abbaci.* [2] One of the topics he was interested in was population growth. The book included this exercise:

> How many pairs of rabbits can be produced from a single pair in a year? Assume that each pair produces a new pair of offspring every month, a rabbit becomes fertile at age one month, and no rabbits die during the year.

2. Book of the Abacus.

After a month there will be two pairs. At the end of the next month the first pair will have produced another pair, so now there are three pairs. At the end of the following month the original pair will have produced a third pair of offspring and their firstborn will also have produced a pair, to make five pairs in all. And so on. If, like the rabbits, you are not too exhausted to continue, you can get the following series of numbers [3]:

$$0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89 \ldots$$

After the first two terms, each term in the series is the sum of the two preceding terms. Also, as one progresses along the series, the ratio of any adjacent pair of terms oscillates around φ ($= 1.618\ldots$), approaching it ever more closely.

$$\begin{aligned} 8/5 &= 1.6 \\ 13/8 &= 1.625 \\ 21/13 &= 1.615 \\ 34/21 &= 1.619 \\ 55/34 &= 1.6176 \\ 89/55 &= 1.6182 \end{aligned}$$

For the mathematically inclined there is another, to me, typographically striking relationship between φ and the Fibonacci series. Define the Fibonacci numbers as F_n, where

$$F_0 = 0; \quad F_1 = 1; \quad F_{n+2} = F_{n+1} + F_n, \quad n \geq 0. \tag{3.5}$$

Then

$$F_n = \frac{1}{\sqrt{5}}(\varphi^n - (-\varphi)^{-n}) \tag{3.6}$$

Both the Fibonacci series and the golden section appear in nature. The arrangement of seeds in a sunflower, the pattern on the surface of a pinecone, and the spacing of leaves around a stalk all exhibit Fibonacci paterns (for example see (Conway and Guy

3. The numbers at the start of the series depend on whether you consider the initial pair of rabbits to be adults or babies.

1996)). Martin Gardner (Gardner 1996) reports on a study of 65 women that claimed that the average ratio of a person's height to the height of the navel is $1.618+$ — suspiciously close to φ. According to Dan Brown, the author of *The Da Vinci Code*, Mario Livio's *The Golden Ratio* (Livio 2002) '... unveils the history and mystery of the remarkable number phi in such a way that ... you will never again look at a pyramid, pinecone, or Picasso in the same light'.

3.2 The spread

The typeblock is that part of the page which is normally covered with type. The same proportions that are useful for the shape of a page are also useful for the shape of the typeblock. This does not mean, though, that the proportions of the page and the typeblock should be the same. For instance, a square typeblock on a square page is inherently dull.

Le bloc de texte est la partie de la page qui est normalement couverte de caractères. Les mêmes proportions utiles pour la forme d'une page le sont aussi pour la forme du bloc de caractères. Cela ne signifie pas pour autant que les proportions de la page et du bloc de caractères doivent être identiques. Par exemple, un bloc de caractères carré sur une page carrée est intrinsèquement rébarbatif.

When we first start to learn to read we scan horizontally along each line of text. As our skills improve we tend to scan vertically rather than horizontally. A tall column of text helps in this process, provided that the column is not too wide.

Lorsque nous commençons à apprendre à lire, nous balayons horizontalement chaque ligne de texte. Au fur et à mesure que nos compétences s'améliorent, nous avons tendance à balayer verticalement plutôt qu'horizontalement. Une colonne de texte haute facilite ce processus, à condition que la colonne ne soit pas trop large.

A page in a book will typically contain several elements. Principal among these is the typeblock, but there are also items like the folio (that is, the page number), a running header and/or footer which carries the chapter and/or book title, and possibly marginalia and footnotes. These latter elements, although essential to the content of the book, are minor visual elements compared to the typeblock. But even minor decoration can obscure or kill an otherwise good design.

Dans un livre, une page contient généralement plusieurs éléments. Le principal d'entre eux est le bloc de texte, mais il y a aussi des éléments tels que le folio (c'est-à-dire le numéro de page), un en-tête et/ou un pied de page courant qui porte le titre du chapitre et/ou du livre, et éventuellement des notes marginales et des notes de bas de page. Ces derniers éléments, bien qu'essentiels au contenu du livre, sont des éléments visuels mineurs comparés au bloc de caractères. Cependant, même une décoration mineure peut ternir ou détruire une bonne conception.

The major concern is the positioning of

Le principal choix est le positionnement

the typeblock on the page. The mere fact of positioning the typeblock also has the result of producing margins onto the page. Page design is a question of balancing the page proportions with the proportions of the typeblock and the proportions of the margins to create an interesting yet harmonious composition. A single page, except for a title page, is never the subject of a design but rather the design is in terms of the two pages that are on view when a book is opened — the left and right hand pages are considered as a whole. More technically, the design is in terms of a *double spread*.

Table 3.1 gives some examples of page designs. These are arranged in increasing order of fatness. In this table, and afterwards, I have just used a single number to represent the ratio of the page height to the width; that is, for example, 1.5 instead of $1.5 : 1$ or $12/7$ instead of $12 : 7$. The following symbols are used in the table:

Proportions :

P = page proportion = h/w
T = typeblock proportion = d/m

Page size :

w = width of page
h = height of page

Typeblock :

m = measure (i.e., width) of primary typeblock
d = depth (excluding folios, running heads, etc.)

Margins :

s = spine margin (back margin)
t = top margin (head margin)
e = fore-edge (front margin)
f = foot margin (bottom margin)
g = internal gutter (on a multi-column page)

Theoretically the following relationship holds among the several variables:

$$f + t - T(s + e) = w(P - T)$$

However, due to measurement and other difficulties, the numbers given in the table do

du bloc de texte sur la page. Le simple fait de le placer quelque part a pour effet secondaire immédiat de produire des marges sur la page. La conception de la page vise à équilibrer les proportions de la page avec les proportions du bloc de texte et les proportions des marges pour créer une composition intéressante mais harmonieuse. À l'exception de la page de titre, on ne travaille pas sur une page unique, mais sur les deux pages qui sont visibles lorsqu'un livre est ouvert — les pages de gauche et de droite sont considérées comme un tout. Plus techniquement, la maquette est celle d'une *double page*.

TABLE 3.1 – Some page designs

P	T	Margins & Columns					Figure
		s	t	e	f	g	
$\sqrt{3}$	2	$w/13$	$8s/5$	$16s/5$	$16s/5$		3.2 left
$\sqrt{3}$	e/φ	$w/10$	$2s$	$2s$	$3s$		3.2 right
$12/7$	1.701	$w/7$	$8s/5$	$8s/5$	$14s/5$		3.3 left
e/φ	$7/4$	$w/10$	$5s/4$	$5s/3$	$11s/8$		3.3 right
φ	1.866	$w/9$	s	$2s$	$7s/3$		3.4 left
φ	φ	$w/12$	$2s$	$5s/2$	$4s$		3.4 right
$8/5$	1.634	$2w/15$	$7s/5$	$9s/5$	$13s/5$		3.5 left
$19/12$	$7/4$	$2w/15$	s	$9s/8$	$11s/8$		3.5 right
$19/12$	$\sqrt{3}$	$w/7$	s	$5s/4$	$1.84s$		3.6 left
$19/12$	$8/5$	$w/12$	$7s/5$	$8s/5$	$2s$		3.6 right
$\pi/2$	$9/5$	$w/9$	$3s/2$	$5s/2$	$3s$		3.7 left
$e/\sqrt{3}$	1.71	$w/10$	$11s/8$	$24s/11$	$8s/3$		3.7 right
1.553	1.658	$w/11$	φs	φs	φs		3.8 left
1.538	$\sqrt{7}$	$w/10$	s	$23s/6$	$3s/2$		3.8 right
$3/2$	2	$w/5$	$s/2$	s	s		3.10 left
$3/2$	1.701	$w/9$	s	$2s$	$7s/3$		3.10 right
$3/2$	$\pi/2$	$w/13$	$2s$	$10s/3$	$30s/7$		3.11 left
$3/2$	$3/2$	$w/9$	$3s/2$	$2s$	$3s$		3.11 right
$3/2$	1.68	$w/23$	$2s$	$5s$	$2s$		3.12 left
$3/2$	$3/2$	$w/10$	$2s$	$5s/2$	$2.85s$		3.12 right
1.48	1.376	$w/12$	$7s/4$	$2s$	$7s/2$		3.13 left
$13/9$	$\sqrt{2}$	$w/30$	$2s$	$9s/2$	$4s$	$s/2$	3.13 right
$\sqrt{2}$	φ	$w/9$	s	$2s$	$2s$		3.14 left
$\sqrt{2}$	φ	$w/8$	s	$5s/3$	$5s/3$		3.14 right
$7/5$	1.641	$w/7$	s	$8s/5$	$8s/5$		3.15 left
$17/22$	1.594	$0.176w$	$1.21s$	$1.47s$	$1.05s$		3.15 right
1.294	$13/9$	$w/12$	s	$2s$	$10s/7$	$s/2$	3.16 left
$9/7$	$19/9$	$2w/5$	$5s/8$	$5s/8$	$5s/6$		3.16 right
$5/4$	$13/11$	$w/10$	$3s/2$	$2s$	$8s/3$		3.18 left
$7/6$	$55/48$	$w/10$	$9s/10$	$8s/10$	$13s/10$	$1.05s$	3.18 right
e/π	0.951	$w/9$	s	$2s$	$3s/2$		3.19 left
$5/7$	$2/3$	$w/9$	$s/2$	$2s/3$	s	$s/3$	3.19 right

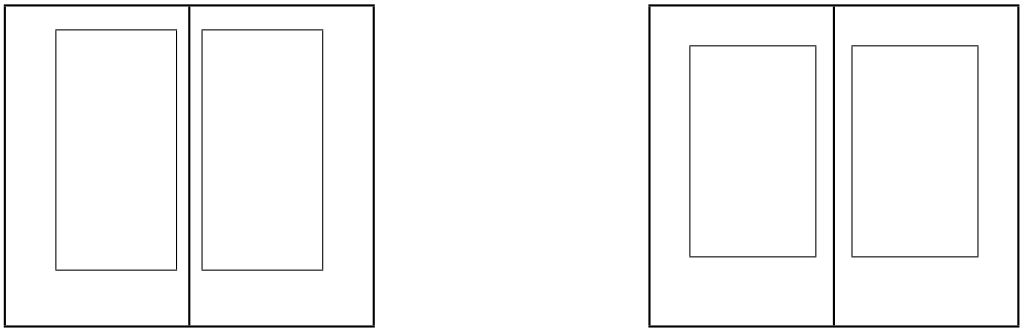


FIGURE 3.2 – Two spreads : (Left) Canada, 1992. (Right) England, 1970.

not always obey this rule but they are close enough to give a good idea of the relative values. In any event, page design is not a simple arithmetic exercise but requires aesthetic judgement.

The designs are also shown in Figures 3.2 to 3.19. Each of these shows a double page spread; the page width has been kept constant throughout the series to enable easier visual comparison — it is the relative proportions, not the absolute size, that are important. I have only shown the pages and the typeblocks to avoid confusing the diagrams with headers, footers or folios.

Shown in Figure 3.2 are two modern books. On the left is the layout for Robert Bringhurst's *The Elements of Typographical Style* published by Hartley & Marks in 1992, and designed by Bringhurst (Bringhurst 1999). The text face is Minion set with 12pt leading on a 21pc measure. The captions are set in Scala Sans. The original size is 227×132 mm and is printed on Glatfelter laid paper. I highly recommend this book if you are interested in typography.

The layout on the right is The Folio Society's 1970 edition of *The Prince* by Niccolò Machiavelli. The original size is 216×125 mm and the text is set in $12/13 \times 22$ Centaur. Chapter titles are set as raggedright block paragraphs using Roman numbers and small caps for the text; not all chapters start a new page. There are no running headers and

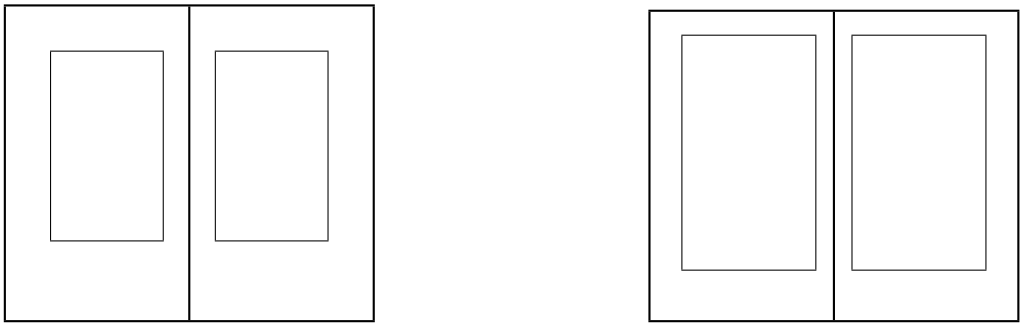


FIGURE 3.3 – Two spreads : (Left) USA, 1909. (Right) England, 1964.

the folios are set at the center of the footer. The ToC is typeset like the standard LaTeX ToC but with the chapter titles in small caps.

Figure 3.3 (left) illustrates a small book by Wilfred T. Grenfell entitled *Adrift on an Ice-Pan* published in 1909 by the Riverside Press of Boston. The text is set with a leading of 16pt on a 16pc measure. The large leading and small measure combine to give a very open appearance. The original size is 184×107 mm. The half-title is set in bold uppercase about 1/3 of the way down the page. Uppercase is used for chapter headings which are centered. Captions for the photographs are also uppercase and are listed on an illustrations page. The folios are centered in the footer and enclosed in square brackets (e.g., [17]), and the headers contain the book title, centered, and in uppercase.

On the right is another book from the Folio Society — *Three Men in a Boat* by Jerome K. Jerome printed in 1964. The original size is 215×128 mm and is typeset with Ehrhardt at $11/12 \times 22$. Chapter titles are centered and simply consist of the word 'CHAPTER' followed by the number. There are no headers and the folio is set between square brackets (like [27]) in the center of the footer. The ToC title is centered, and the chapter entries are like standard LaTeX except that the numbers are set in a roman font while the texts, which give a summary of the chapter contents, are typeset in italic.

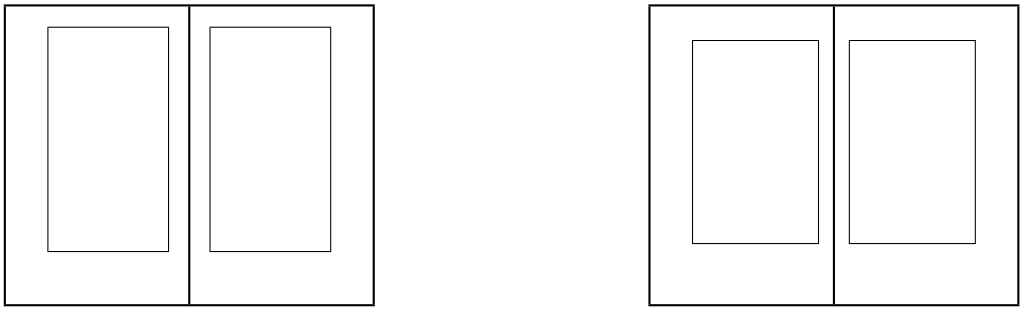


FIGURE 3.4 – Two spreads : (Left) France, 1559. (Right) Canada, 1995.

Jean de Tourmes, a Parisian publisher, printed *Histoire et Chronique* by Jean Froissart in 1559. This is a history book with the main text in roman and sidenotes in italic at roughly 80% of the size of the main text. The layout is shown in Figure 3.4 (left). The gutter (not shown) between the main text and the sidenote column is very small, but the change in fonts and sizes enables the book to be read with no confusion.

Another Hartley & Marks typography book — *Finer Points in the Spacing & Arrangement of Type* by Geoffrey Dowding — is shown at the right of Figure 3.4. This is typeset in Ehrhardt at $10.5/14 \times 23$ on a page size of 231×143 mm on Glatfelter Laid Offset paper. The half-title is uppercased, centered, and in the upper quarter of the page. On the title page the title is typeset with a large bold italic font while the author's name is set using normal uppercase and the publisher is set in small caps. Dowding uses 'part' instead of 'chapter'. Chapter heads are centered with the number written out, like 'PART ONE', and below this is the title set in large italics. Section heads are in uppercase and subsection heads in small caps, both centered. Folios are in the center of the footer; verso running heads consist of the book title in small caps and centered, and recto heads contain the chapter title in italics and centered. On the contents page the part (chapter) numbers and titles are centered, using

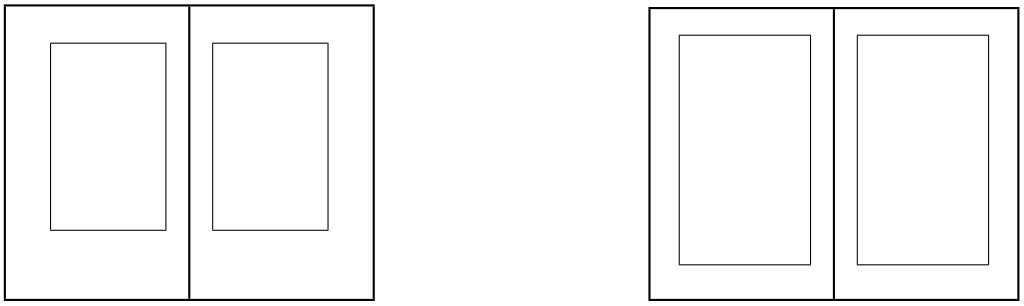


FIGURE 3.5 – Two spreads : (Left) USA, 1949. (Right) USA, 1990.

small caps and large italics respectively (and no page numbers). Section titles are in small caps, left justified with the page numbers right justified. Titles from the front matter and back matter, for example the Foreword and Bibliography, are typeset in italics.

Bruce Rogers (1870–1957) described how he came to design his Centaur typeface in *Centaur Types*, a privately published book by his studio October House in 1949. The layout of this book, which of course was typeset in Centaur, is shown at the left of Figure 3.5. Centaur is an upright seriffed type based on Nicolas Jenson's type as used in *Eusebius* published in 1470. *Centaur Types* demonstrates typefaces other than Centaur, and also includes exact size reproductions of the engraver's patterns. It is set at $14/16 \times 22$ on a page size of 240×150 mm.

Figure 3.5 (right) is the layout of another book on typefaces. It is *The Anatomy of a Typeface* by Alexander Lawson published by David R. Godine in 1990 (Lawson 1990). This is set in Galliard with 13pt leading and a measure of 24pc on a page size of 227.5×150 mm on Glatfelter Offset Smooth Eggshell paper. The half-title is set in uppercase in the upper quarter of the page. On the title page the title is in uppercase in a large outline font, with a double rule above and a short single rule below. The author is set in small caps (both upper- and lowercase like LAWSON) and the publisher is in

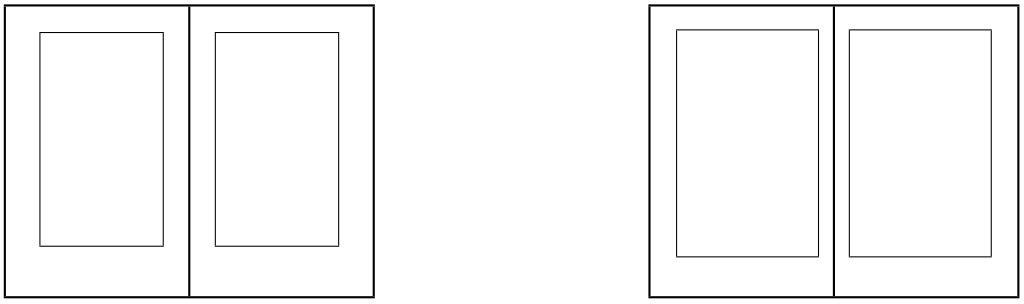


FIGURE 3.6 – Two spreads : (Left) England, 1908. (Right) USA, 1993.

regular lowercase small caps. Chapter heads are centered with the number set between a pair of fleurons, followed by the title in large uppercase, and with a short rule between the title and the start of the text. The folios are in the center of the footer with a short rule above them; there are no running headers. The contents page is set with the body type; chapter numbers are flushleft with a following period and the page numbers are flushright.

Microcosmographica Academia by F. M. Cornford is shown in Figure 3.6. Despite its title, it is written in English and was published by Bowes & Bowes, London, in 1908. It is a dryly humourous look at academic politics as practised in Cambridge University at the turn of the nineteenth century (probably in the twentieth and twenty-first as well). It is set with 14pt leading on 22pc. The original page size is 216×136 mm. The half-title is in normal uppercase in the upper sixth of the page; the title page is all uppercase in various sizes. Chapter heads are centered with first the number in Roman numerals and below the title in uppercase. Folios are centered in the footer and there are no running heads. There is no table of contents.

The right of this figure illustrates a book with another unusual title — *The Alphabet Abecedarium* by Richard A. Firmage and published by David R. Godine in 1993. It is set in Adobe Garamond on a 27pc measure with 14pt leading. The original page size is

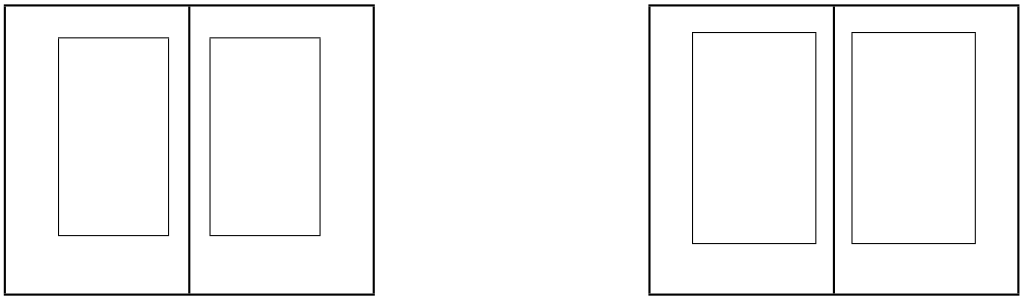


FIGURE 3.7 – Two spreads : (Left) USA, 1931. (Right) England, 1968.

227.5 × 150 mm. The book gives a history of each letter of the Latin alphabet. Chapter heads are centered and consist of an ornamental version of the letter in question. One unusual feature is that there is a deep footer on each page showing many examples of typefaces of the letter being described. Verso running headers consist of the book title in mixed small caps and centered with the folio flushleft. Recto headers have the folio flushright, and centered is the alphabet, typeset in small caps except for the current letter which is enlarged.

W. A. Dwiggins was, among many other things, an American book designer. Figure 3.7 (left) shows his layout of H. G. Wells' *The Time Machine* for Random House in 1931. The page size is 231 × 147mm.

The right of the figure illustrates the layout of a book called *Two Men — Walter Lewis and Stanley Morrison at Cambridge* by Brooke Crutchley and published by Cambridge University Press in 1968. This is typeset in Monotype Barbon with 17.5pt leading on a 26pc measure on a 253 × 162 mm page. Crutchley was the Cambridge University Printer and each year would produce a limited edition of a book about Cambridge or typography, and preferably both together, for presentation to friends of the Press. The tradition of the Printer's Christmas Book was started by Stanley Morison in 1930 and continued until 1974. The books usually consisted of a short essay on a particular topic, so they did not

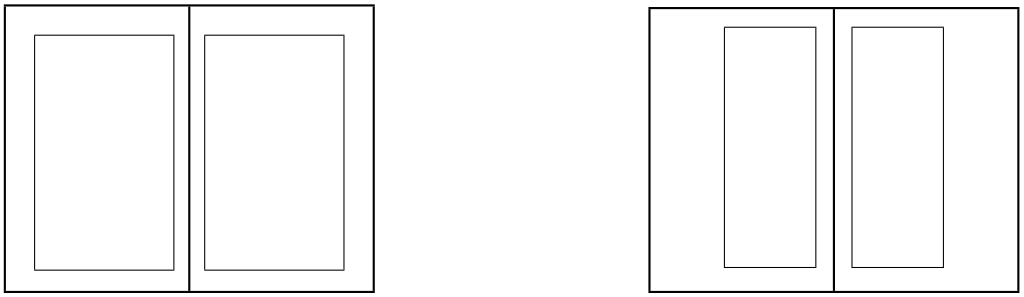


FIGURE 3.8 – Two spreads : (Left) USA, 1994. (Right) England 1988.

have chapter heads, tables of contents, or other appurtenances, apart from a Preface.

A modern technical book layout is given in Figure 3.8. The book is *Information Modeling the EXPRESS Way* by Douglas Schenck and Peter Wilson, published by Oxford University Press (New York) in 1994. This is set in Computer Modern Roman at $10/12 \times 27$ on a page 233×150 mm. It has the typical LaTeX appearance with perhaps the exception of the epigraphs after each chapter heading.

Ruari McLean's *The Thames and Hudson Manual of Typography* (1988) is at the right in Figure 3.8. This is typeset in $10/11 \times 20$ Monophoto Garamond on a 240×156 mm page. The wide fore-edge is used for small illustrations. Notes are also set in this margin rather than at the foot of the page. The half-title is in a bold font, flushright, in the upper quarter of the page; there is a wood engraving of a galleon at the bottom, also flushright. The title uses a mixture of fonts and is set flushright; an example title page based on this design is shown in Figure **??**. Chapter are on recto pages and consist of the number and title in a bold font, flushleft and near the top of the page, and an engraving of some kind is at the bottom right of the page; there is no other text on this page, the body of the chapter starting at the top of the following verso page. Folios are in the footers at the outer edge of the page. Running headers contain the chapter title in small caps flushright in the outer margin.

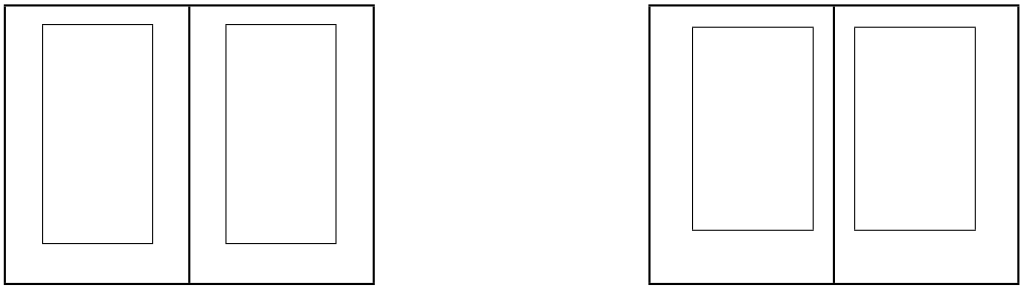


FIGURE 3.10 – Two spreads : (Left) Italy, 1523. (Right) Italy 1499.

Many page layouts in earlier days were constructed by drawing with compass and ruler, usually based on regular geometric figures; the use of squares, pentagons and hexagons being particularly prevelant. Unusually, the typeblock in Figure 3.10 (left) is centered on the page. The typeblock is based on a square, the depth being twice the measure. The book, *Canzone* by Giangiorgio Trissino, is a volume of poems and was published in Rome about 1523 by Ludovico degli Arrighi. Prose works from the same typographer followed the normal style of having the fore-edge wider than the spine margin.

The page proportion in Figure 3.10 (right) is also a simple $3 : 2$ ratio. The proportions of the typeblock, being $1.7 : 1$, are based upon a pentagon. The book is *Hypnerotomachia Poliphili* by Francesco Colonna and was published by Aldus Manutius in Venice in 1499. The story of this, including some reproductions from the original, is told by Helen Barolini (Barolini 1992).

In 1519 the Portugese explorer Ferdinand Magellan set sail from Sanlúcar de Barramada, near Cádiz in Spain, with five ships and about 270 men. Three years later one ship and 18 men returned, having made the first circumnavigation. Among the few survivors was Antonio Pigafetta who recorded the adventure. A very few manuscripts of his report are in existence. The layout of one of these manuscripts which is in the Beinecke Rare Book and Manuscript Library at

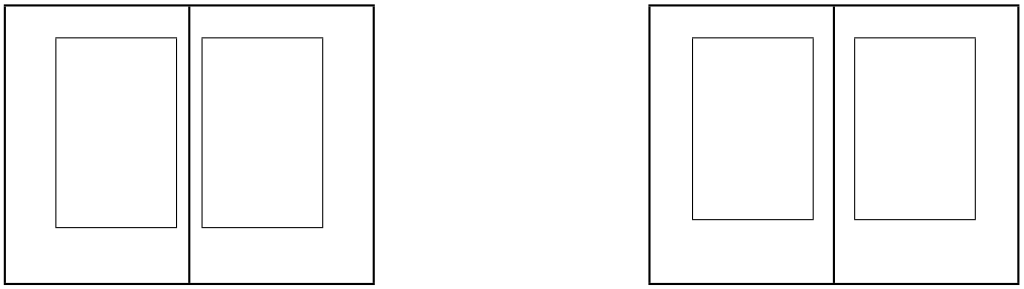


FIGURE 3.11 – Two spreads : (Left) France/Portugal, 1530. (Right) Gutenberg, C15th.

Yale is shown at the left of Figure 3.11. The manuscript, which is written in French, is called *Navigation et descouurement de la Inde superieure et isles de Malueque ou naissent les cloux de Girofle* (Navigation and discovery of Upper India and the Isles of Molucca where the cloves grow) is written in a beautiful humanistic minuscule. There are 27 lines to a page, which is 286×190 mm and made of vellum. The text measure is 29.5pc and the 'leading' is 21pt. The wide outer (fore-edge) margin is used for sidenotes indicating highlights of the story. The manuscript was probably prepared soon before 1530; the scribe and where he worked is unknown.

Many of the books produced by Johannes Gutenberg (1398–1468) and his early successors followed the form shown in Figure 3.11 (right). This set of proportions was also often used in medieval incunabula [4] and manuscripts. The page and typeblock proportions are the same $(3 : 2)$. The margins are in the proportions $2 : 3 : 4 : 6$. A graphical method for constructing this, and similar designs, is shown later in Figure 3.20.

4. Early books, especially those printed before 1500.

Two versions of the same publication are shown in Figure 3.12. On the left is a Persian manuscript *Khamsch of Nizami* written about 1525. The page size is about 324×216 mm. The illustrations and the typeblock are inextricably mixed. On the right is a translation of some of the manuscript published

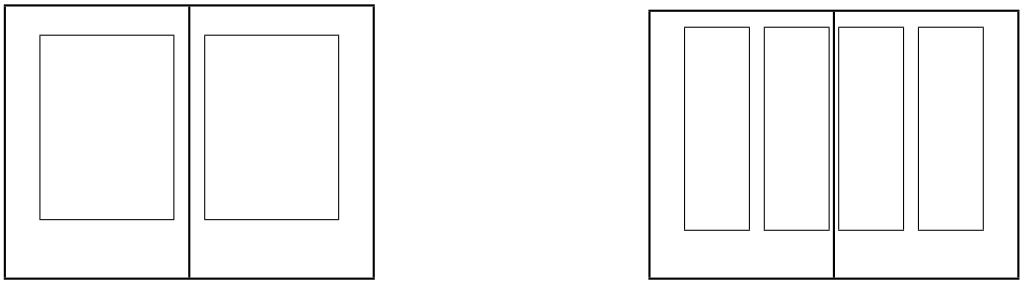


FIGURE 3.13 – Two spreads : (Left) USA, 1952. (Right) England, 1087.

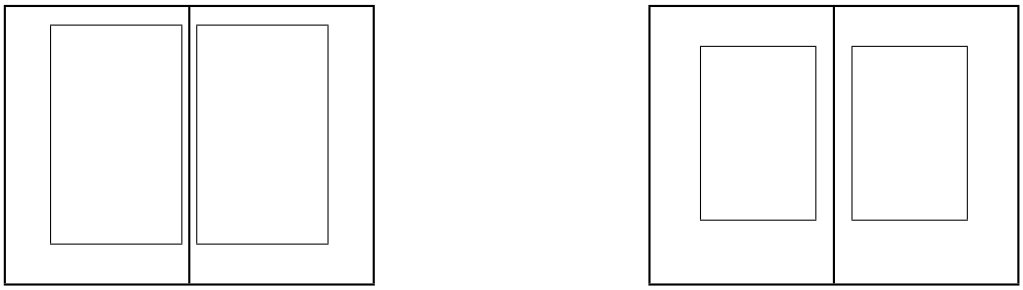


FIGURE 3.12 – Two spreads : (Left) Persia, 1525. (Right) USA, 1975.

as *Tales from the Khamsch of Nizami* by the Metropolitan Museum of Art, New York, in 1975. The modern version has a page size of 300×200 mm, slightly smaller than the original but in the same proportions. The typeblock is 32pc wide and the type is set with a 15pt leading.

Frederic Goudy was a prolific American type designer. Shown at the left of Figure 3.13 is the layout of his book *The Alphabet and Elements of Lettering* published by the University of California Press in 1952. This is typeset in his University of California Old Style, which has interesting ct and st ligatures. The measure is 36pc and the leading is 18pt. The first half of the book gives a short history of the development of writing and fonts. The second half consists of 27 plates, one for each letter of the alphabet, and the last one for the ampersand character. These show the evolution of each letter from Roman times to the mid-twentieth century.

FIGURE 3.15 – Two spreads : (Left) England, 1973. (Right) LaTeX 10pt book style.

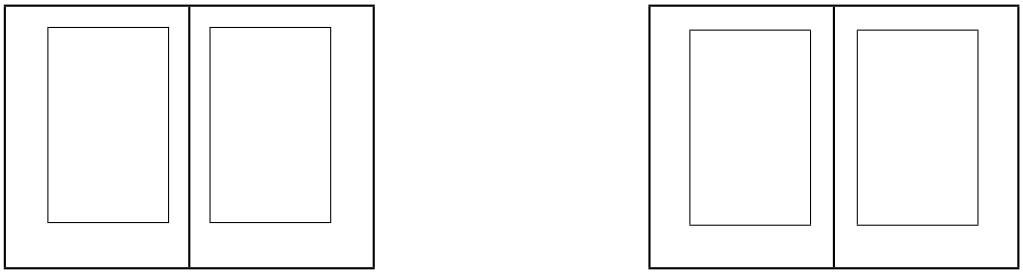


FIGURE 3.14 – Two spreads : (Left) ISO (1). (Right) ISO (2).

Figure 3.13 (right) shows the layout of the English *Domesday Book* which is a manuscript book written in 1087. It records all the domains won by William the Conqueror in 1066. The book is written in a Carolingian minuscule in two columns, with 44 lines per column ragged right. The two columns have slightly different widths. The first part of the book is more meticulously written than the later parts, where the scribe appears to be in haste to finish.

Figure 3.14 shows two different layouts for a page corresponding to the ISO international standard proportion of $\sqrt{2}$. In each case the typeblock is the same and proportioned in the golden section, but the margins are different. The layout on the left provides adequate room for marginal notes in the foreedge.

Another of the Cambridge University Printer's Christmas books is at the left of Figure 3.15. In this case it is *Emery Walker* —

FIGURE 3.16 – Two spreads : (Left) USA, 1967. (Right) England, 1982.

Some Light on his Theories of Printing and on his Relations with William Morris and Cobden-Sanderson by Colin Franklin and published in 1973. The page size is 295×210 mm with a measure of 31pc set with 15pt leading. Unusually for this series it has chapter heads which are simply the number centered above the title in a large font. It also has illustrations which are listed on an illustrations page where the caption titles are set flush-left and page numbers flushright. The page is divided into two lists. The first has a heading (centered) in italics of *'In text'* with *'page'* flushright above the page numbers. The second has the centered heading *'In pocket at end'* and there are no page numbers in this list as the corresponding illustrations are not bound into the book, instead thay are loosely inserted in a pocket at the end of the book.

On the right is the default layout provided by the LaTeX 10pt book class on US letterpaper.

Adrian Wilson, who died in 1988, was an acclaimed American book designer. His work on book design, *The Design of Books*, out of print since 1988 but reissued in 1993 by Chronicle Books, is outlined at the left of Figure 3.16. This is in two columns, with many illustrations, on letterpaper size pages. It is typeset in Palatino and Linotype Aldus with 12pt leading. Each column is 18pc wide. The title page is a simple design and an example based on it is shown in Figure 3.17. Chapter heads are flushright in a large italic, preceeded by the number. Section heads are

flushleft in uppercase and subsection heads are also flushleft but in normal sized italics. The Contents list is in the left hand column, typeset using the normal font with titles flushleft and page numbers flushright; there is an engraving in the bottom half of the right hand column. There are no running headers. Verso footers have the chapter title flushleft in small caps with the folio to the left of this (i.e., in the margin); recto footers similarly have the chapter title flushright and the folio to the right in the margin.

The other layout in this figure is B. W. Robinson's *Kuniyoshi: The Warrior Prints* published by Phaidon, Oxford in 1982. The page size is 310×242 mm with a measure of 28.5pc. The type is set with 13pt leading. The wide spine margin is used for some small reproductions of Japanese woodblock prints, some of which extend across the binding itself. The majority of the book has no text apart from captioning the many reproduced prints which take up full pages.

The Waterways of the Fens by Peter Eden with drawings by Warwick Hutton is another of the Cambridge Printer's Christmas books. This is set with 17pt leading on a measure of 27pc. The original page size is 195×150 mm and is illustrated on the left of Figure 3.18. The amount of text on a page varies and there are many line drawings, some of which take a double spread. Folios are in the outer margin level with the top line of text.

On the right of this figure is another art book, namely *Dürer* by Fedja Anzelewsky published by Chartwell Books in 1980. This is set in two columns with 14pt leading on a 23.5pc measure, although there are more illustrations than text. The page size is 280×240 mm, considerably larger than its companion in the figure, yet with much smaller margins. Roman numerals are used for chapter heads which are set flushleft in a large font. Immediately below the chapter head is a line of 'section' titles, flushleft, in a

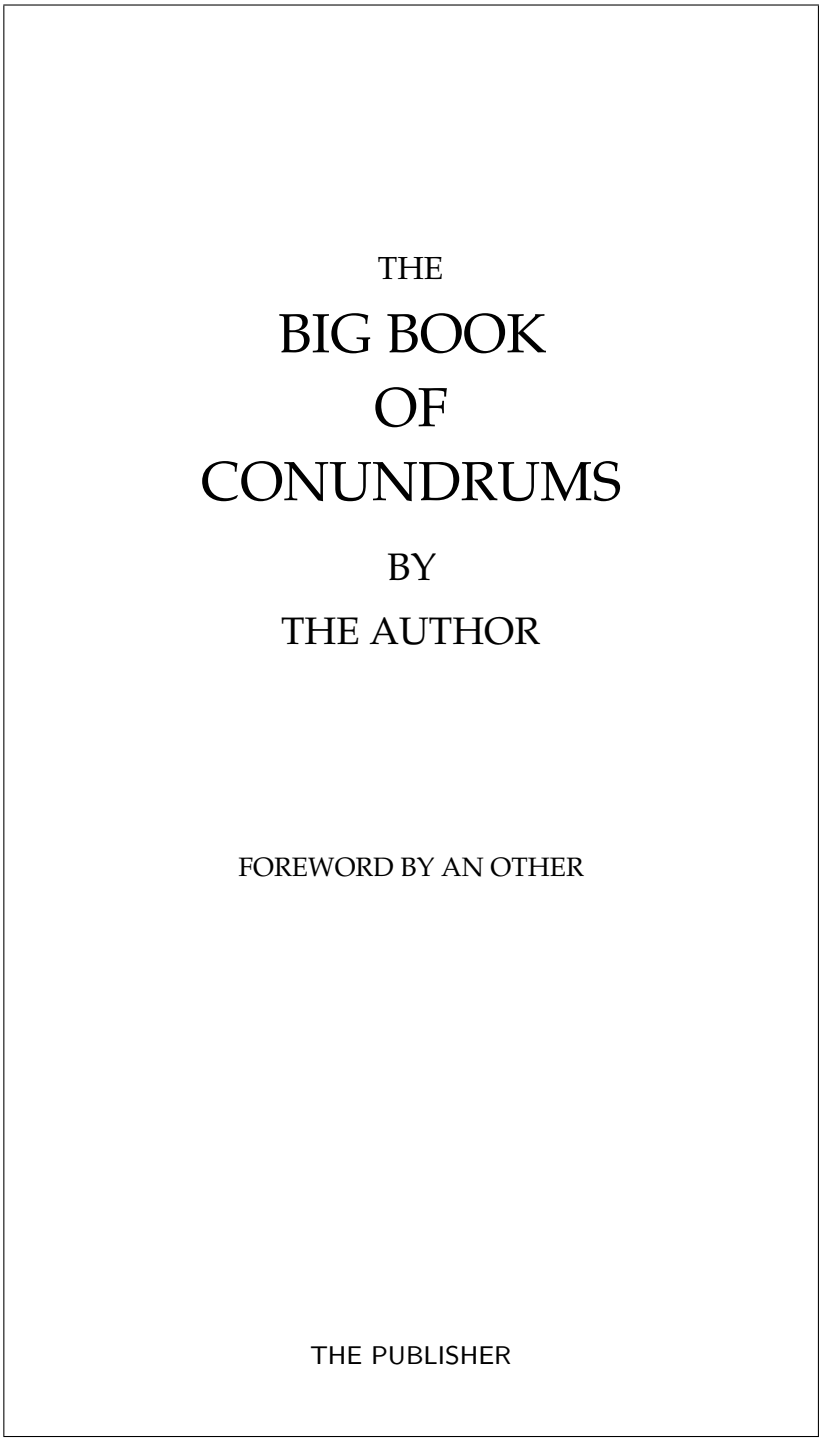


FIGURE 3.17 – Title page design based on Adrian Wilson's *The Design of Books*

FIGURE 3.19 – Two spreads : (Left) England, 1969. (Right) USA, 1989.

FIGURE 3.18 – Two spreads : (Left) England, 1972. (Right) Switzerland, 1980.

font size intermediate between the chapter head and the body. A centered dot is used to separate the section titles. Folios are set in the foot flush with the outside of the type-block; there are no running heads. The Table of Contents title matches the chapter heads. Chapter title entries are set flushleft with their page numbers flushright. The section titles are set in a line below the chapter entry, again separated by centered dots. In the text, references to illustrations are placed in the outside margins in a small font.

Two more layouts for illustrated books are given in Figure 3.19. In this case the illustrations are drawings in landscape mode (i.e., they are wider than they are high); the shape of the drawings has had a major effect on the page proportions. In the case on the left the page proportion is in the ratio $\pi : e$. The measure is longer than usual at 37pc and to compensate for this the leading of 17pt is also larger than customary. It is typeset in Centaur. The book is *Hammer and Hand* by Raymond Lister with drawings by Richard Bawden. It was published in 1969 by Cambridge University Press and is another of the University Printer's Christmas books. Folios

are in a large font at the outside edge of the page and level with the top text line.

Shown on the right of Figure 3.19 is *Hokusai — One Hundred Poets* by Peter Morse and published by George Braziller in 1989. The introductory text is set in two columns as shown. The body consists of illustrations of Japanese wood block prints, originally in the large *oban* size of about 250×380 mm. The half-title is set in a large font in the top right hand corner of the page, but the text on the title page is centered. The main body is organised with a wood block print on each recto page and the commentary on the facing verso page. At the top of each commentary page, centered, is the number of the print, a short rule, the title of the print in a large italic font, a longer rule, and then side by side the poem in Japanese and an English translation. The commentary itself is underneath, set in three raggedright columns; minor heading in the commentary are flushleft in small caps. The folio is at the center of the foot. At the end of the book is a commentary on those poems where there are no known illustrations; this is typeset raggedright in four columns.

3.2.1 A GEOMETRIC CONSTRUCTION

Nowadays it is easy to pick and calculate any kind of page proportion that takes your fancy, but how did the early printers do it? They certainly did not have the use of calculators and I suspect that they had only enough arithmetic to keep their accounts. Printing was a craft and craftsmen did not release their trade secrets lightly. I believe that most of the designs were based on simple geometric figures, which required nothing more than a ruler and a pair of compasses.

Jan Tschichold gives a simple construction for the layout of many of the books based on Gutenberg's work (Tschichold 1991, pages 44–57), which is shown in Figure 3.20. The construction actually divides the page up into ninths (the point P in the diagram, which is at the intersection of the main and half diagonal construction lines, is one third

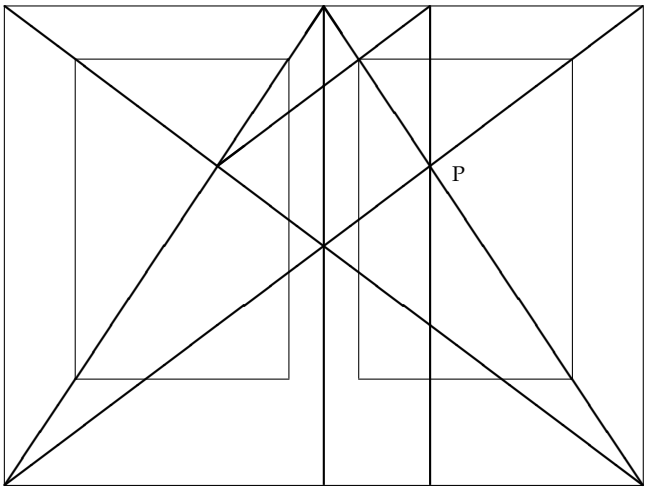


FIGURE 3.20 – The construction of the Gutenberg page design

of the way down and across both the page and the typeblock). This construction can be used no matter what the page proportions and will give the same relative result.

3.3 The typeblock

The typeblock is not just a rectangular block of text. If the typeblock does consist of text, then this will normally be broken up into paragraphs; it is not good authorial style to have paragraphs that are longer than a page. Also, the typeblock may include tables and illustrations which provide relief from straight text. Some pages may have chapter or section headings on them which will also break the run of the text. In general the typeblock will be a mixture of text, white space, and possibly non-text items.

Consider a typeblock that includes no illustrations or tables. The lines of text must be laid out so that they are easy to read. Common practice, and more recently psychological testing, has shown that long lines of text are difficult to read. Thus, there is a

Le bloc de texte n'est pas seulement un pavé rectangulaire constitué de texte. S'il contient bien du texte, celui-ci sera normalement divisé en paragraphes. Il n'est pas bon pour le style de l'auteur d'avoir des paragraphes de plus d'une page. De même, le bloc de texte peut contenir des tableaux et des illustrations qui interrompent le texte. Certaines pages peuvent comporter des titres de chapitre ou de section qui rompent également le fil du texte. En général, le bloc de texte sera un mélange de texte, d'espaces blancs et éventuellement d'éléments non textuels.

Prenons l'exemple d'un bloc de texte qui ne comporte ni illustrations ni tableaux. Les lignes de texte doivent être disposées de manière à être faciles à lire. La pratique courante, et plus récemment les tests psychologiques, ont montré que les longues lignes de

physiological upper limit to the width of the typeblock. From a practical viewpoint, a line should not be too short because then there is difficulty in justifying the text.

Experiments have shown that the number of characters in a line of single column text on a page should be in the range 60 to 70 for ease of reading. The range may be as much as 45 to 75 characters but 66 characters is often considered to be the ideal number. Much shorter and the eye is dashing back and forth between each line. Much longer and it is hard to pick up the start of the next line if the eye has to jump back too far — the same line may be read twice or the following line may be inadvertently jumped over. For double column text the ideal number of characters is around 45, give or take 5 or so.

Bringhurst (Bringhurst 1999) gives a method for determining the number of characters in a line for any font: measure the length of the lowercase alphabet and use a copyfitting table that shows for a given alphabet length and line length, the average number of characters in that line. Table 3.2 is an abridged version of Bringhurt's copyfitting table. For example, it suggests that a font with a length of 130 pt should be set on a measure of about 26 pc for a single column or in an 18 pc wide column if there are multiple columns.

Morten Høgholm has done some curve fitting to the data. He determined that the expressions

$$L_{65} = 2.042\alpha + 33.41 \tag{3.7}$$

and

$$L_{45} = 1.415\alpha + 23.03 \tag{3.8}$$

fitted aspects of the data, where α is the length of the alphabet in points, and L_i is the suggested width in points, for a line with i characters (remember that 1 pc = 12 pt).

The vertical height of the typeblock should be constant from page to page. The

texte sont difficiles à lire. Il existe donc une limite physiologique supérieure à la largeur du bloc de texte. D'un point de vue pratique, une ligne ne doit pas être trop courte car il devient alors difficile de justifier le texte.

Des expériences ont montré que le nombre de caractères d'une ligne de texte en une seule colonne sur une page devrait se situer entre 60 et 70 pour faciliter la lecture. La fourchette peut aller jusqu'à 45 à 75 caractères, mais on considère souvent que 66 caractères est le nombre idéal. Si le texte est plus court, l'ŏ153il fait des allers-retours entre chaque ligne. S'il est plus long, il est difficile de repérer le début de la ligne suivante si l'ŏ153il doit trop reculer - la même ligne peut être lue deux fois ou la ligne suivante peut être sautée par inadvertance. Pour un texte en double colonne, le nombre idéal de caractères est d'environ 45, à 5 près.

TABLE 3.2 – Average characters per line. The bold numbers mark the combination that gives 60–70 chars pr line, whereas the italic marks the corresponding values around 45 chars. Abridged version of corresponding table in BRINGHURST 1999.

Pts.	Line length in picas							
	10	14	18	22	26	30	35	40
80	*40*	**56**	**72**	88	104			
85	*38*	*53*	**68**	83	98	113		
90	*36*	*50*	**64**	79	93	107		
95	34	*48*	**62**	75	89	103		
100	33	*46*	**59**	**73**	86	99	116	
105	32	*44*	57	**70**	82	95	111	
110	30	*43*	55	**67**	79	92	107	
115	29	*41*	53	**64**	76	88	103	
120	28	*39*	*50*	**62**	73	84	98	112
125	27	38	*48*	**59**	**70**	81	94	108
130	26	36	*47*	57	**67**	78	91	104
135	25	35	*45*	55	**65**	75	88	100
140	24	34	*44*	53	**63**	73	85	97
145	23	33	*42*	51	**61**	**70**	82	94
150	23	32	*41*	*51*	**60**	**69**	81	92
155	22	31	*40*	*49*	58	**67**	79	90
160	22	30	39	*48*	56	**65**	76	87
165	21	30	38	*46*	55	**63**	74	84
170	21	29	37	*45*	53	**62**	72	82
175	20	28	36	*44*	52	**60**	**70**	80
180	20	27	35	*43*	51	59	**68**	78
185	19	27	34	*42*	*49*	57	**67**	76
190	19	26	33	41	*48*	56	**65**	74
195	18	25	32	40	*47*	54	**63**	72
200	18	25	32	39	*46*	53	**62**	**70**
220	16	22	29	35	*41*	*48*	56	**64**
240	15	20	26	32	38	*44*	51	58
260	14	19	24	30	35	41	*48*	54
280	13	18	23	28	33	38	*44*	50
300	12	17	21	26	31	35	41	*47*
320	11	16	20	25	29	34	39	*45*
340	10	15	19	23	27	32	37	42

lines of text on facing pages should be aligned horizontally across the spine, which also means that they will be at the same place on both sides of a leaf. Alignment across the spine means that the eye is not distracted by an irregularity at the centre of a spread, and leaf alignment stops ghosting of text through a thin page, giving a crisper look to the work. So, the spacing between lines should be constant. This implies that the depth of the typeblock should be an integral multiple of the space required for each line; that is, be specified as a multiple of the leading. A ten point type, for example, will normally have two points between lines, to give a leading of 12 points. This can be written as 10/12. Usefully, one pica is 12 points so with a 12 pt leading vertical distances can be conveniently expressed in picas (one pica per line). Another implication of this is that any space left for illustrations or tables, or the amount of space taken by chapter and section headings should also be an integer multiple of the leading.

A ten point type set solid is described as 10/10. The theoretical face of the type is ten points high, from the top of a *d* to the bottom of a *p*, and the distance of the baseline of one row of text to the next row of text is also ten points. Note that if a *p* is vertically above a *b* then the ascender of the *b* will meet the descender of the *p*. To avoid this, the vertical separation between baselines is increased above the type size. Adding two extra points of vertical space allows the text to breathe, and gives a leading of 12 points. Few fonts read well when set solid. Typical settings are 9/11, 10/12, 11/13 and 12/15. Longer measures require more leading than shorter ones, as do darker and larger fonts compared with lighter and smaller fonts. More leading is also useful if the text contains many super- or sub-scripts, or many uppercase letters.

3.3.1 PAGE COLOR

One of the aims of the typographer is to produce pages that are uniform in 'color'.

L'un des objectifs du typographe est de produire des pages dont la « couleur » est

By this they mean that the typeblock has a reasonably constant grayness, not being broken up by too much white space which is a distraction to the reader. There will be white space around headings, which is acceptable as a heading is meant to attract attention. There may be white space between paragraphs, and this is usually under the control of the designer. But there may be vertical rivulets, or even rivers, of white space when the interword spaces on adjacent lines coincide; fixing this usually requires some handwork, either by the author changing his wording so as to alter the location of the spaces, or by the typesetter tweaking a little bit.

Another form of distraction is if too many lines end with hyphens, or several adjacent lines start or end with the same text; not only does this cause a stack of identical characters but will make it harder for the reader to reliably jump to the next line.

The main font used controls the depth of the color of a page. To see what color is produced by a particular font it is necessary to look at a fairly long, preferably a page, piece of normal text. Fonts from different families produce different colors, and so may mixed fonts from the same family. You can try this yourself by typesetting the same page in, say, Computer Modern Roman, Italic, and Sans-serif fonts. The books by Rogers (Rogers 1943), Lawson (Lawson 1990), Dowding (Dowding 1998), and Morison (Morison 1999) all show pages set in many different fonts.

3.3.2 LEGIBILITY

One of the principle requirements on the typography of a document is that the document is *legible*. Legibility means that the document is uniforme. Cela signifie que le bloc de texte a un ton gris raisonnablement constant et qu'il n'est pas interrompu par trop d'espaces blancs qui pourraient distraire le lecteur. Il y aura des espaces blancs autour des titres, ce qui est acceptable car un titre est censé attirer l'attention. Il peut y avoir des espaces blancs entre les paragraphes, ce qui est généralement sous le contrôle du maquettiste. Mais il peut y avoir des rivières verticales d'espace blanc lorsque les espaces entre les mots de lignes adjacentes coïncident ; pour y remédier, il faut généralement un peu de travail manuel, soit que l'auteur modifie sa formulation de manière à changer l'emplacement des espaces, soit que le typographe fasse quelques ajustements.

Une autre source de distraction est le fait qu'un trop grand nombre de lignes se terminent par des traits de césure, ou que plusieurs lignes adjacentes commencent ou se terminent par le même texte ; non seulement cela provoque un empilement de caractères identiques, mais l'œil du lecteur aura du mal à passer à la ligne suivante en toute confiance.

La police principale utilisée contrôle la densité du gris de la page. Pour voir quelle nuance est obtenue avec une police particulière, il est nécessaire de regarder un texte normal assez long, de préférence une page. Les polices de différentes familles produisent des nuances différentes, tout comme les polices mixtes de la même famille. Vous pouvez essayer vous-même en composant la même page avec, par exemple, les polices Computer Modern Roman, Italic et Sans-serif. Les livres de Rogers (ROGERS 1943), Lawson (LAWSON 1990), Dowding (DOWDING 1998) et Morison (MORISON 1999) montrent tous des pages composées de nombreuses polices différentes.

L'une des principales exigences en matière de typographie d'un document est que celui-ci soit lisible. La lisibilité signifie que le

ument is designed to be easily read under a certain set of circumstances. The criteria for legibility on a poster that is placed on the side of a bus, for example, are different from those that apply to a book to be read while sitting in an easy chair. Essentially, the viewer should be able to read the document with no physical strain caused by the appearance, but the contents, of course, may lead to anything ranging from acute mental strain to extreme boredom.

Typefaces and the layout of the typeblock must be chosen to optimise between legibility and 'artistic' presentation. The design of the document should be almost invisible, giving full compliments to the author's communication. However, if you are a master, like Hermann Zapf (Zapf 2000), you can break the rules.

document est conçu pour être lu facilement dans certaines circonstances. Les critères de lisibilité d'une affiche placée sur le côté d'un bus, par exemple, sont différents de ceux qui s'appliquent à un livre à lire assis dans un fauteuil. Pour l'essentiel, le lecteur doit pouvoir lire le document sans que l'apparence ne lui impose de contraintes physiques, mais le contenu, bien entendu, peut entraîner des contraintes mentales aiguës ou un ennui extrême.

Les caractères et la mise en page du bloc de caractères doivent être choisis de manière à optimiser la lisibilité et l'aspect « artistique ». Le design du document doit être presque invisible, laissant toute sa place à la communication de l'auteur. Toutefois, si vous êtes un maître, comme Hermann Zapf (ZAPF 2000), vous pouvez enfreindre les règles.

Typefaces

The first European letter forms that have survived are Greek inscriptions carved into stone. These were freehand carvings with thin strokes. In time, the lettering became thicker and serifs started to appear. The Romans picked up on this later style of letterform. In carving inscriptions, they first wrote the inscription on the stone using a broad, flat brush. This naturally led to serifs and differing thicknesses of the letter strokes, depending on the angle of the stroke with respect to the movement and orientation of the brush. Similarly the written letterforms included serifs.

Les premières formes de caractères européennes qui ont survécu sont des inscriptions grecques gravées dans la pierre. Il s'agissait de gravures à main levée avec des traits fins. Avec le temps, le lettrage s'est épaissi et les empattements ont commencé à apparaître. Les Romains ont repris ce style de lettres plus tardif. Pour graver les inscriptions, ils commençaient par écrire l'inscription sur la pierre à l'aide d'un pinceau large et plat. Cela a naturellement donné lieu à des empattements et à des épaisseurs différentes des traits de lettres, en fonction de l'angle du trait par rapport au mouvement et à l'orientation du pinceau. De même, les formes de lettres écrites comprenaient des empattements.

Between the Roman times and Gutenberg there were many changes and experiments in European letterforms. The scribes used different scripts for titles, subheads, continuous text, illuminated initial letters, and so on. In time, two families of letterforms evolved, called *majuscules* and *minuscules*. The former were larger and more formal, while the lat-

Entre l'époque romaine et Gutenberg, les formes de lettres européennes ont connu de nombreux changements et expériences. Les scribes utilisaient différentes écritures pour les titres, les sous-titres, le texte continu, les lettres initiales enluminées, etc. Avec le temps, deux familles de formes de lettres se sont développées, appelées *majuscules* et *mi-*

ter were smaller and less formal. We now call these two divisions uppercase and lowercase. The uppercase derives from Roman times, while the lowercase acquired its fundamental form during the reign of the Holy Roman Emperor Charlemagne a thousand years later. In order to promote communication throughout his wide flung empire the Anglo Saxon Benedictine monk Alcuin, at the behest of Charlemagne, established a common script to be used; this is now called Carolingian minuscule. A further division also appeared, between black letter (what is commonly referred to as Gothic or Old English) type and the roman type.

These types were all upright. Italic letterforms were cut in Italy in the early sixteenth century, as a more cursive style. Initially these were lowercase only, used in conjunction with uppercase roman. By the end of the century, sloped roman capitals were also in use with italic.

The late nineteenth century saw the appearance again of Sans-serif typefaces.

Looking carefully at seriffed and sans fonts it is apparent that the serifs have three main functions:

1. They help to keep letters apart.
2. At the same time, they help to keep letters in a word together. This helps with legibility as research has shown that we tend to recognize words by the shape of the word rather than by individual characters.
3. They help to differentiate between individual but similar letters.

Long experience has shown that a seriffed

nuscules. Les premières étaient plus grandes et plus formelles, tandis que les secondes étaient plus petites et moins formelles. Nous appelons maintenant ces deux divisions majuscules et minuscules. La majuscule dérive de l'époque romaine, tandis que la minuscule a acquis sa forme fondamentale sous le règne de l'empereur romain Charlemagne, mille ans plus tard. Afin de favoriser la communication à travers son vaste empire, le moine bénédictin anglo-saxon Alcuin, à la demande de Charlemagne, a établi une écriture commune à utiliser, appelée aujourd'hui minuscule carolingienne. Une autre division est également apparue, entre les caractères noirs (ce que l'on appelle communément le gothique ou *Old English*) et les caractères romains.

Ces caractères étaient tous verticaux. Les formes de lettres italiques ont été créées en Italie au début du XVI^{e} siècle, dans un style plus cursif. Au départ, il s'agissait uniquement de minuscules, utilisées en conjonction avec des majuscules romaines. À la fin du siècle, les capitales romaines inclinées étaient également utilisées avec l'italique.

La fin du XIX^{e} siècle vit réapparaître les caractères sans empattement.

En examinant attentivement les polices avec et sans empattement, il apparaît que les empattements ont trois fonctions principales :

1. Ils aident à séparer les lettres.
2. En même temps, ils aident à maintenir les lettres d'un mot ensemble. Cela contribue à la lisibilité, car les recherches ont montré que nous avons tendance à reconnaître les mots par leur forme plutôt que par les caractères individuels.
3. Ils aident à différencier les lettres individuelles mais similaires.

L'expérience a montré depuis longtemps qu'une police avec empattement est plus

font is easier to read [5] than a Sans-serif font, particularly if part of the text is obscured. You can try an experiment yourself to verify this. Try writing a phrase, once using a Sans-serif font and then with a seriffed font. Cover up the top halves of the two phrases and try to make out what they say. Then repeat this, except this time cover up the bottom halves of the phrase. Which is easier to read? Here are some example characters, firstly in sans-serif:

a c l m n p q o

and then in roman:

a c l m n p q o

Sans-serif fonts often require context to decipher the word. For example (McLean 1980), seeing this in isolation

lll

does it stand for 'Ill', 'one hundred and eleven', 'three', or something completely different like a dingbat or a set of cricket stumps?

There are three generally agreed legibility principles for setting text for continuous reading.

1. *Sans-serif type is intrinsically less legible than seriffed type* (Wheildon 1995).

   We have already seen that this is the case — there is more variety among seriffed letters than among sans-serif letters. Further, serifs perform other functions as well, such as binding letters together within a word.

   This is not to say that a sans-serif letterform is always more illegible than a roman one. A poor seriffed form can be much more illegible than a well

5. This is actually somewhat contentious as some take the view that with enough practice, Sans-serif is just as easy to read.

facile à lire [1] qu'une police sans empattement, en particulier si une partie du texte est masquée. Vous pouvez tenter une expérience vous-même pour vérifier cela. Essayez d'écrire une phrase, une première fois avec une police sans-serif, puis avec une police avec serif. Couvrez les moitiés supérieures des deux phrases et essayez de comprendre ce qu'elles disent. Répétez ensuite l'opération, mais en recouvrant cette fois la moitié inférieure de la phrase. Laquelle est la plus facile à lire ? Voici quelques exemples de caractères, d'abord en sans-serif :

1. Ce qui est en fait quelque peu controversé, certains estimant qu'avec suffisamment de pratique, une police sans empattement est tout aussi facile à lire.

used good sans-serif. In general, there is an illegibility factor associated with sans-serif that must be borne in mind; for general *continuous* reading, a good seriffed form is more likely to be easy on the eye than a good sans form.

2. *Well designed upper- and lowercase roman type is easier to read than any of its variants.*

   This is a guiding principle with many exceptions. Among the variants can be considered to be italic and bold types. These have usually been designed for a special purpose, like emphasing certain pieces of text, rather than for general legibility. Some italic types, though, are as legible as their roman counterparts. In the seventeenth century many books were set entirely in italic, but we have become accustomed to the roman type.

3. *Words should be set closer together than the space between lines.*

   All text is a mixture of ink and white space. The eye, when reading, tends to jump over the white spaces. Given a choice between two spaces, it will tend to jump over the smaller of the two. If the word spacing is greater than the line spacing, then you can find yourself skipping from one line to the next before finishing the first one.

   Further, if the lines are too long, then when the eye jumps back from the end of one line to the start of the next, it may have difficulty in picking up the correct one.

   Text lines are justified by altering the inter-word spacing, and possibly by hyphenating the last word on the line if the spacing would be too bad otherwise. Sans-serif fonts often look best if set ragged right, as this will keep the inter-word spacing constant. Text set in narrow columns also often looks best when set ragged right.

Seriffed versus Sans-seriffed fonts

As noted earlier there seems to be a permanent debate over the use of seriffed and sans fonts. You will have to make up your own mind as to what is best for any particular work, but here are a few general comments from some of the literature on the subject.

Bohle (Bohle 1990) notes: Readers prefer a roman typeface for body type because they are most used to seeing that face (Rehe 1972). Roman type may well also be more readable than sans serif faces because the serifs help connect the letters to form the word shape when we read (Rehe 1972).

Craig (Craig 1992) says: You will find that the serifs on a typeface facilitate the horizontal flow necessary to comfortable reading.

Degani (Degani 1992) in a study of pilots reading checklists in emergency cockpit situations decided that sans serif faces were better than serif faces.

Schriver (Schriver 1997) notes: Serif and sans serif typefaces are likely to be equally preferred by readers (Hartley and Rooum 1983; Tinker 1963) and read equally quickly (Gould et al. 1987; Hartley and Rooum 1983; Zachrissom 1969). Serif faces may be easier to read in continuous text than sans serif faces (Burt 1959; Hvistendahl and Kahl 1975; Robinson, Abbamonte, and Evans 1971; Wheildon 1995).

Wheildon (Wheildon 1995) did a series of studies with around 250 readers in Sydney, Australia, asking them to rate serif and sans fonts in a variety of uses. Among the many results he reported:

— More than five times as many readers are likely to show good comprehension when a serif body type is used instead of a sans serif

body type.
- The top half of [uppercase] letters is more recognizable than the bottom half.
- There is little difference in legibility between headlines [section titles] set in serif and sans serif typefaces, or between roman and italic.
- Headlines set in capital letters are significantly less legible than those set in lowercase.

The consensus, such as it is, seems to lean towards seriffed typefaces for continuous reading, but for titling the choice is wide open.

To finish off in a lighter vein, Daniel Luecking had this to say on the subject in a posting to CTT in January 2002.

> It is often conjectured that seriffed fonts are easier to read because the serifs contribute more points of difference between words. This is often countered with the conjecture that they are easier to read because that is what we are used to reading. But no one can doubt that words like Ill, Iliad and Illinois in a sans-serif font [e.g., Ill, Iliad and Illinois] are going to cause the eye/brain system at last momentary confusion while it sorts out which plain vertical lines are uppercase i's and which lowercase L's.
>
> I don't know if this contributes anything, but I can say unequivocally that serif fonts are somwhat easier to read upside down than sans-serif, but sans-serif is far easier to read mirored than serif. (I spent much of my time as a child reading comics on the floor with my brother. As he hated reading any way but straight on, we faced in different

> directions and I saw the page upside down. I tried mirror reading just to see if I could do that as easily. Serif fonts were almost impossible, sans-serif actually quite easy.)

He later expanded on the mirror reading to me as follows.

> Here's an interesting (to me) anecdote about mirror reading: I was waiting in line at an airport lunch counter, reading the menu posted on the wall, when it suddenly struck me as odd that the menu was on the wall opposite (so that one had to turn away from the counter to read it). Then I realized in a sort of flash that I was reading it from a mirror. I turned to look at the real menu and was momentarily disoriented (while my brain turned itself around I guess) before I could read the actual menu. That was when I first ran some tests to see why that was so easy to read and other mirror writing was not. It seemed to be serif vs sans-serif, but it might also be the typical letter forms: the typical serif lowercase 'a', the one with the 'flag' above the bowl [e.g., a], is particularly difficult to recognize compared to the simple 'circle plus stick' [e.g., *a*] form.
>
> Some sort of dyslexia (or eulexia), no doubt, when backwards words are nearly as easy to read as normal ones.

3.3.3 WIDOWS AND ORPHANS

Inconvenient page breaks can also cause a hiatus in the reader's perusal of a work. These happen when a page break occurs near the start or end of a paragraph.

Les sauts de page inopportuns peuvent également causer un hiatus dans le parcours d'un ouvrage par le lecteur. Cela se produit lorsqu'un saut de page se produit près du début ou de la fin d'un paragraphe.

A *widow* is where the last line of a paragraph is the first line on the page. The term is sometimes also used to refer to when the last word in a paragraph is on a line by itself. A widow looks forlorn. In German they are called *Hurenkinder* — whores' children — which seems rather cruel to me. As Robert Bringhurst said, 'A widow has a past but no future'. Typographically, widows should be avoided as they are a weak start to a page and may optically destroy the page and type rectangle. However, a single widow is not too troubling if the header includes a rule across the width of the typeblock. Especially to be avoided are widows that are the only line on a page, for example at the end of a chapter. Five lines on the last page of a chapter is a reasonable minimum. Jan Tschichold (Tschichold 1991) claims that Hurenkinder can always be avoided by even if a recto (verso) page must be made a line shorter or longer than the corresponding verso (recto) page, which he considers to be less of an affront than widows.

On parle de *veuve* lorsque la dernière ligne d'un paragraphe est la première ligne de la page. Le terme est parfois aussi utilisé pour désigner le cas où le dernier mot d'un paragraphe se trouve sur une ligne à part. Une veuve a l'air désespérée. En allemand, on les appelle *Hurenkinder* — enfants de putains — ce qui me semble plutôt cruel. Comme le disait Robert Bringhurst, « Une veuve a un passé mais pas d'avenir ». D'un point de vue typographique, les veuves doivent être évitées car elles constituent un début de page faible et peuvent détruire optiquement la page et le rectangle de caractères. Toutefois, une seule veuve n'est pas trop gênante si l'en-tête comprend une règle sur toute la largeur du bloc de caractères. Il faut surtout éviter les veuves qui sont la seule ligne d'une page, par exemple à la fin d'un chapitre. Cinq lignes sur la dernière page d'un chapitre est un minimum raisonnable. Jan Tschichold (TSCHICHOLD 1991) affirme que les Hurenkinder peuvent toujours être évités, même si une page recto (verso) doit être raccourcie ou rallongée d'une ligne par rapport à la page verso (recto) correspondante, ce qu'il considère comme un moindre affront que les veuves.

An orphan is not nearly so troubling to typographers as a widow. An *orphan* is where the first one or two lines of a paragraph are at the bottom of a page. In German they are called *Schusterjungen* — cobbler's apprentices. Bringhurt's memory trick for orphans is, 'An orphan has a future but no past'.

Une *orpheline* est loin d'être aussi gênante pour les typographes qu'une veuve. On parle d'orpheline lorsque la première ou les deux premières lignes d'un paragraphe se trouvent au bas d'une page. En allemand, on les appelle *Schusterjungen* — les apprentis cordonniers. L'astuce mnémotechnique de Bringhurt pour les orphelines est la suivants : « Une orpheline a un avenir mais pas de passé ».

3.3.4 PARAGRAPHS AND VERSALS

Early books did not have paragraphs as we know them nowadays; the text was written continuously, except for a break at a major division like the start of a new book in a bible. Instead the scribes used a symbol like ¶ (the pilcrow) to mark the beginning

Les premiers livres ne comportaient pas de paragraphes tels que nous les connaissons aujourd'hui ; le texte était écrit en continu, à l'exception d'une pause lors d'une division majeure, comme le début d'un nouveau livre dans une bible. Au lieu de cela, les scribes

of paragraphs. This symbol is derived from the Greek Π, for *parágraphos*. Mind you, they often did not use any punctuation at all and were sparing in their use of uppercase letters, so you might have seen something like this [6]

> usque ¶ te canit adcelebratque polus rex gazifier hymnis ¶ transzephyrique globum scandunt tua facta per axem

Often the ¶ was colored red by the rubricators and the scribe, or printer, would leave a blank space for the rubricator to add the ¶. This did not always happen and the start of a paragraph eventually became marked by a space rather than a symbol.

Nowadays paragraphs are ended by stopping the line of text at the end of the paragraph, and then starting the next paragraph on a new line. The question then becomes: how do you indicate a new paragraph when the last line of the previous paragraph fills up the measure? There are two solutions, which unfortunately you sometimes see combined. Either indent the beginning of the first line of each paragraph, or put additional vertical space between the last and first lines of paragraphs.

The traditional technique, which has served well for centuries, is to indent the first line of a paragraph. The indentation need not be large, about an em will be enough, but more will be required if the typeblock is wide.

The other method is used mainly in business letters and is a recent invention. The first lines of paragraphs are not indented and typically one blank line is left between paragraphs. This may perhaps be acceptable when using a typewriter, but seems to have

6. But probably not. The two 'paragraphs' are Latin abecedarian sentences.

utilisaient un symbole comme ¶ (le pied-de-mouche). Ce symbole est dérivé du grec Π, pour *parágraphos*. Il est à noter que les scribes n'utilisaient souvent aucune ponctuation et qu'ils n'utilisaient que très peu de majuscules. Vous auriez donc pu voir quelque chose comme ceci : [2]

> usque ¶ te canit adcelebratque polus rex gazifier hymnis ¶ transzephyrique globum scandunt tua facta per axem

Souvent, le ¶ devait être tracé en rouge par les rubricateurs et le scribe, ou l'imprimeur, laissait un espace vide pour que le rubricateur puisse l'ajouter. Ce n'était pas toujours le cas et le début d'un paragraphe a fini par être marqué par un espace plutôt que par un symbole.

De nos jours, les fins de paragraphes sont indiquées en arrêtant la ligne de texte à la fin du paragraphe, puis en commençant le paragraphe suivant sur une nouvelle ligne. La question qui se pose alors est la suivante : comment indiquer un nouveau paragraphe lorsque la dernière ligne du paragraphe précédent remplit la totalité de la ligne ? Il existe deux solutions, que l'on voit malheureusement parfois combinées. Soit on met en retrait le début de la première ligne de chaque paragraphe, soit on met un espace vertical supplémentaire entre la dernière et la première ligne des paragraphes.

La technique traditionnelle, qui a fait ses preuves depuis des siècles, consiste à mettre en retrait la première ligne d'un paragraphe. Le retrait n'a pas besoin d'être important, environ un em suffit, mais il en faudra davantage si le bloc de texte est large.

L'autre méthode, utilisée principalement dans les lettres commerciales, est une invention récente. Les premières lignes des paragraphes ne sont pas mises en retrait et une ligne blanche est généralement laissée entre les paragraphes. Cette méthode peut être

2. ou peut-être pas : ces deux « paragraphes » sont des pangrammes latins.

no real justification aesthetically. There is also the problem when a paragraph both ends with a full line and ends a page. As the next paragraph then starts at the top of the next page, the blank line separating the two paragraphs has effectively disappeared, thus leaving the reader in a possible state of uncertainty as to whether the paragraph continues across the page break or not.

If the paragraph is the first one after a heading, then there is no need to indicate that it is a new paragraph — it is obvious from its position. So, the first paragraph after a heading need not be indented, and for some centuries now the tradition is not to indent after a heading. In some novels only chapters are headed yet each chapter is broken into sections by putting additional vertical blank space between the sections. Like nonindented paragraphs, this can cause problems where a section division coincides with a page break. In this case, typographers sometimes use a decoration to separate sections (for example, a short centered row of a few asterisks).

SOME TYPOGRAPHERS like to start the first paragraph in a chapter with a versal. A *versal* is a large initial letter, either raised or dropped. This comes from the scribal tradition of illuminating the first letter of a manuscript. The versal may be raised or dropped, as already noted, or it may be placed in the margin, or otherwise treated in a special manner.

SOME VERSALS, especially dropped versals, are very difficult to typeset correctly. Many attempts of this kind are abject failures, so be warned. For example, compare the dropped versals at the start of these first two paragraphs. They are both of

acceptable lorsqu'on utilise une machine à écrire, mais elle ne semble pas avoir de réelle justification sur le plan esthétique. Il y a également un problème lorsqu'un paragraphe se termine par une ligne complète et qu'il termine une page. Comme le paragraphe suivant commence alors en haut de la page suivante, la ligne blanche séparant les deux paragraphes a effectivement disparu, laissant ainsi le lecteur dans un état d'incertitude possible quant à savoir si le paragraphe continue au-delà du saut de page ou non.

Si le paragraphe est le premier après un titre, il n'est pas nécessaire d'indiquer qu'il s'agit d'un nouveau paragraphe : cela est évident de par sa position. Ainsi, le premier paragraphe après un titre n'a pas besoin d'être mis en retrait, et depuis quelques siècles, la tradition est de ne pas mettre en retrait après un titre. Dans certains romans, seuls les chapitres sont intitulés, mais chaque chapitre est divisé en sections en ajoutant un espace vertical entre les sections. Comme pour les paragraphes non indentés, cela peut poser des problèmes lorsqu'une division de section coïncide avec un saut de page. Dans ce cas, les typographes utilisent parfois une décoration pour séparer les sections (par exemple, une courte rangée centrée de quelques astérisques).

CERTAINS TYPOGRAPHES aiment bien commencer le premier paragraphe d'un chapitre par une lettrine. Il s'agit d'une grande lettre initiale, dépassant de la ligne soit vers le haut, soit vers le bas. Cela vient de la tradition scribe qui consistait à enluminer la première lettre d'un manuscrit. La lettrine peut être plus haute ou plus basse, comme nous l'avons déjà noté, ou bien elle peut être placée dans la marge, ou encore être tracée de façon particulière.

CERTAINES LETTRINES, en particulier les lettrines descendantes, sont très difficiles à composer correctement. De nombreuses tentatives de ce genre sont des échecs cuisants, soyez donc prévenus. Par exemple, comparez les lettrines descen-

the same letter and font, yet the first one is horrible compared to the one starting this paragraph.

A RAISED VERSAL is often easier to use to start a paragraph than a dropped versal. However, a raised versal should only be used where there is naturally some vertical space above it. As you can see, extra spacing has had to be inserted before this paragraph to accomodate the versal. There are still problems with typesetting a raised versal but as these tend to be subtler than with a dropped versal, readers are less likely to notice problems.

Typically, small caps are used for a little while following a versal to provide a transition between the large versal font and the normal body font. These should not continue throughout the first line as this tends to divorce it from the remainder of the paragraph.

ANOTHER WAY OF STARTING a paragraph is to use small caps for the first few words. The font difference highlights the start of the paragraph but in a much quieter manner than a versal does. Using normal sized uppercase instead of the small caps is too much of a contrast with the lowercase.

dantes au début de ces deux premiers paragraphes. Elles utilisent toutes deux la même lettre et la même police, mais la première est horrible comparée à celle qui commence ce paragraphe.

UNE LETTRINE MONTANTE est souvent plus facile à utiliser pour commencer un paragraphe qu'une lettrine descendante. Cependant, une lettrine montante ne doit être utilisé que lorsqu'il y a naturellement un espace vertical au-dessus. Comme vous pouvez le constater, un espace supplémentaire a dû être inséré avant ce paragraphe pour tenir compte de la lettrine. La composition d'une lettrine haute pose toujours des problèmes, mais comme ils sont généralement plus subtils que ceux d'une lettrine basse, les lecteurs sont moins susceptibles de les remarquer.

En général, les petites capitales sont utilisées sur quelques mots après la lettrine pour assurer la transition entre la grande taille de caractère de celle-ci et la police courante du texte. Elles ne doivent pas être utilisées tout au long de la première ligne, car cela tendrait à la séparer du reste du paragraphe.

UNE AUTRE FAÇON DE COMMENCER un paragraphe est d'utiliser des petites capitales pour les premiers mots. Cette différence de police met en évidence le début du paragraphe, mais d'une manière beaucoup plus discrète que ne le fait une lettrine. L'utilisation de majuscules de taille normale au lieu de petites capitales créerait un contraste trop important avec les minuscules.

3.3.5 FOOTNOTES

Footnotes are considered to be part of the typeblock. They are typeset in the space allocated for the typeblock, in contrast to footers which are typeset below the typeblock.

Footnotes are normally set in the same type style as the typeblock. That is, if an upright seriffed font is used for the typeblock, it is also used for the footnote. The type size is smaller to distinguish the note from the

Les notes de bas de page sont considérées comme faisant partie du bloc de texte. Elles sont composées dans l'espace alloué au bloc de texte, contrairement aux pieds de page qui sont composés en-dessous.

Les notes de bas de page sont normalement placées dans le même style de caractères que le texte courant. En d'autres termes, si une police droite à empattements est utilisée pour le bloc de texte, elle l'est également

body text and often the leading in the footnote is also reduced from that in the main text body. The bottom footnote line should be at the same height as the bottom line of the typeblock. This usually requires some adjustment of the vertical space before the footnotes.

A vertical blank space is often used to set off the footnotes from the main text, and sometimes a short horizontal line is also used as demarcation.

pour la note de bas de page. La taille des caractères est plus petite pour distinguer la note du corps du texte et, souvent, l'interlignage de la note de bas de page est également réduit par rapport à celui du corps du texte. La ligne inférieure de la note de bas de page doit être à la même hauteur que la ligne inférieure du bloc de caractères. Cela nécessite généralement un ajustement de l'espace vertical avant les notes de bas de page.

Un espace blanc vertical est souvent utilisé pour pour séparer les notes de bas de page du texte principal. Parfois, une courte ligne horizontale est également utilisée comme démarcation.

3.4 Folios

The word *folio* is a homonym. It can mean a leaf (two back-to-back pages) in a book, the size of a book or a book of folded sheets (as in Shakespeare's first folio), or the printed page number in a book. Here I use folio in this last sense.

Documents should have folios, at a minimum to help the reader know where he is. Occasionally books have their folios placed near the spine but this positioning is unhelpful for navigation. The more usual positions are either centered with respect to the typeblock or aligned with the outside of the typeblock, and sometimes even in the outside margin. The folios can be either at the top or bottom of the page but at least on pages with chapter openings are normally placed at the bottom of the page so that they do not distract from the title text.

Every page in a book is numbered, even if the page does not have a folio. In books, the folios for the front material are often in roman numerals. The main matter and back matter folios are arabic numerals, with the sequence starting from 1 after the front matter. In certain technical documents, folios may be in the form of chapter number and page number, with the page number starting from

1 in each new chapter. Other folio schemes are possible but unusual.

Folios should be placed harmoniously with respect to the typeblock and page margins. The font used for the folios need not be the same as that for the typeblock but must at least be complementary and non-intrusive.

3.5 Headers and footers

Headers and footers are repetitive material that is placed at either the head or the foot of the page. Typically, folios are headers or footers, but not always as sometimes they are placed in the margin at or below the first line in the typeblock.

For the time being I will not distinguish between headers and footers and just use the word header. Sometimes the header is purely decorative (apart from a folio) like a horizontal line or some other non-textual marking. Normally, though, they have a functional use in helping the reader locate himself in the document.

The most ubiquitous header is one which gives the title of the document. If this is the only header, then I consider this to be decorative rather than functional. As a reader I know what document I am reading and do not need to be reminded every time I turn a page. More useful are headers that identify the current part of the document, like a chapter title or number. When you put the document down and pick it up later to continue reading, these help you find your place, or if you need to refer back to a previous chapter for some reason, then it is a boon to have a chapter heading on each spread. The minimally functional headers are where the document title is on one page and the chapter heading is on the facing page. In more technical documents it may be more useful to have headers of chapter and section titles on alternate pages.

Les en-têtes et les pieds de page sont des éléments répétitifs qui sont placés soit en tête, soit en pied de page. En général, les folios sont des en-têtes ou des pieds de page, mais pas toujours, car ils sont parfois placés dans la marge, au niveau ou en dessous de la première ligne du bloc de texte.

Pour l'instant, je ne ferai pas de distinction entre les en-têtes et les pieds de page et j'utiliserai simplement le mot en-tête. Parfois, l'en-tête est purement décoratif (sauf dans le cas d'un folio), comme une ligne horizontale ou une autre marque non textuelle. Normalement, cependant, ils ont une utilité fonctionnelle en aidant le lecteur à se situer dans le document.

L'en-tête le plus répandu est celui qui donne le titre du document. Si c'est le seul en-tête, je considère qu'il est décoratif plutôt que fonctionnel. En tant que lecteur, je sais quel document je suis en train de lire et je n'ai pas besoin qu'on me le rappelle chaque fois que je tourne une page. Les en-têtes qui identifient la partie courante du document, comme le titre ou le numéro d'un chapitre, sont plus utiles. Lorsque vous posez le document et le reprenez plus tard pour poursuivre la lecture, ces en-têtes vous aident à retrouver votre page, ou si vous avez besoin de vous référer à un chapitre précédent pour une raison quelconque, c'est une aubaine d'avoir un titre de chapitre sur chaque page. Les en-têtes les moins fonctionnels sont ceux où le titre du document figure sur une page et la tête de chapitre sur la page opposée. Dans les documents plus techniques, il peut

Occasionally both headers and footers are used, in which case one normally has constant text, like a copyright notice. I have the feeling that using the latter is only functional for the publishers of the document when they fear photocopying or some such.

The header text is usually aligned with the spine side of the typeblock, but may be centered on top of the typeblock. In any event, it should not interfere with the folio. The type style need not be the same as the style for the typeblock. For example, headers could be set in italic or small caps, which, however, must blend with the style used for the typeblock.

être plus utile d'avoir les titres de chapitre et de section sur des pages alternées.

Il arrive que l'on utilise à la fois des en-têtes et des pieds de page, auquel cas l'un d'eux comporte habituellement un texte constant, comme une notice de copyright. J'ai l'impression que ce dernier n'est là que pour rassurer les éditeurs du document lorsqu'ils craignent la photocopie ou autre.

Le texte d'en-tête est généralement aligné sur le bord du bloc de caractères, mais il peut être centré sur le dessus du bloc de texte. Dans tous les cas, il ne doit pas interférer avec le folio. Le style de caractères ne doit pas nécessairement être le même que celui du bloc de caractères. Par exemple, les en-têtes peuvent être mis en italique ou en petites capitales, mais ils doivent s'harmoniser avec le style utilisé pour le bloc de texte.

3.6 Electronic books

For want of a better term I am calling electronic books, or Ebooks, those documents intended to be read on a computer screen. The vast bulk of Ebooks are in the form of email but I'm more interested here in publications that are akin to hardcopy reports and books that require more time than a few minutes to read.

Faute d'un meilleur terme, j'appelle livres électroniques, ou *e*-books, les documents destinés à être lus sur un écran d'ordinateur. La grande majorité des *e*-books se présentent sous la forme de courriers électroniques mais je m'intéresse ici davantage aux publications qui s'apparentent à des rapports sur papier et aux livres dont la lecture demande plus que quelques minutes.

Unlike real books which have been available for hundreds of years there is virtually no experience to act as a guide in suggesting how Ebooks should appear. However, I offer some suggestions for the layout of Ebooks, based on my experience of such works. Not considered are internal navigation aids (e.g., hyperlinks) within and between Ebooks, nor HTML documents where the visual appearance is meant to set by the viewing software and not by the publisher.

Contrairement aux vrais livres qui sont disponibles depuis des centaines d'années, il n'y a pratiquement aucune expérience qui puisse servir de guide pour suggérer comment les *e*-books devraient apparaître. Cependant, je propose quelques suggestions pour la mise en page des *e*-books, basées sur mon expérience de tels ouvrages. Ne sont pas pris en compte les aides à la navigation interne (par exemple, les hyperliens) à l'intérieur des livres électroniques et entre eux, ni les documents HTML dont l'aspect visuel est censé être défini par le logiciel de visualisation et non par l'éditeur.

The publication medium is obviously

Le support de publication est évidem-

very different — a TV-style screen with limited resolution and pretty much fixed in position versus foldable and markable paper held where the reader finds it best. These differences lead to the following suggestions.

A book can be held at whatever distance is comfortable for reading, even when standing up. The computer user is normally either sitting in a chair with the monitor on a desk or table, or is trying to read from a laptop, which may be lighter but nobody would want to hold one for any length of time. To try and alleviate the physical constraints on the Ebook reader the font size should be larger than normal for a similar printed book. This will provide a wider viewing range. A larger font will also tend to increase the sharpness of the print as more pixels will be available for displaying each character. The font size should not be less than 12 pt. The font may have to be more robust than you would normally use for printing, as fine hairlines or small serifs will not display well unless on a high resolution screen.

ment très différent : un écran de télévision a une résolution limitée et est pratiquement fixe, là ou un papier peut se plier et se mettre là où le lecteur le souhaite. Ces différences conduisent aux suggestions suivantes.

Un livre peut être tenu à la distance la plus confortable pour la lecture, même debout. L'utilisateur d'un ordinateur est normalement assis sur une chaise, l'écran posé sur un bureau ou une table, ou bien il essaie de lire sur un ordinateur portable, qui est peut-être plus léger, mais que personne n'a envie de tenir pendant un certain temps. Pour essayer d'alléger les contraintes physiques du lecteur d'*e*-book, la taille de la police doit être plus grande que la normale pour un livre imprimé similaire. Cela permettra d'élargir le champ de vision. Une police plus grande aura également tendance à augmenter la netteté de l'impression car plus de pixels seront disponibles pour afficher chaque caractère. La taille de la police ne doit pas être inférieure à 12 pt. Il se peut que la police doive être plus robuste que celle que vous utiliseriez normalement pour l'impression, car les traits fins ou les petits empattements ne s'afficheront pas bien, sauf sur un écran à haute résolution.

I find it extremely annoying if I have to keep scrolling up and down to read a page. Each page should fit within the screen, which means that Ebook pages will be shorter than traditional pages. A suggested size for an Ebook page, in round numbers, is about 9 by 6 inches (*How to Create Adobe PDF eBooks* 2001) or 23 by 15 centimetres overall.

Je trouve extrêmement gênant de devoir faire défiler la page de haut en bas pour la lire. Chaque page doit tenir sur l'écran, ce qui signifie que les pages des livres électroniques seront plus courtes que les pages traditionnelles. La taille suggérée pour une page d'*e*-book, en chiffres ronds, est d'environ 9 par 6 pouces (*How to Create Adobe PDF eBooks* 2001) ou 23 par 15 centimètres en tout.

The page design for printed books is based on a double spread. For Ebooks the design should be based on a single page. The typeblock must be centered on the page otherwise it gets tiring, not to mention aggravating, if your eyes have to flip from side to side when moving from one page to the next. Likewise any header and the top of the typeblock must be at a constant height on the screen. A constant position for the bottom of

La mise en page des livres imprimés est établie sur la base d'une double page. Pour les livres électroniques, la conception se fait sur la base d'une seule page. Le bloc de caractères doit être centré sur la page, sinon il devient fatigant, sans parler de l'aggravation, si vos yeux doivent passer d'un côté à l'autre lorsque vous passez d'une page à l'autre. De même, le haut du bloc de caractères ainsi que tout en-tête doivent être à une

the text is not nearly so critical.

It is more difficult with an Ebook than with a paper book to flip through it to find a particular place. Navigation aids — headers and footers — are therefore more critical. Each page should have both a chapter (perhaps also a section) header title and a page number. Note that I'm not considering HTML publications.

Many viewers for Ebooks let you jump to a particular page. The page numbers that they use, though, are often based on the sequence number from the first page, not the displayed folio. In such cases it can be helpful to arrange for a continuous sequence of page numbers, even if the folios are printed using different styles. For example, if the front matter uses roman numerals and the main matter arabic numerals and the last page of the front matter is page xi, then make the first page of the main matter page 12.

I see no point in Ebooks having any blank pages — effectively the concept of recto and verso pages is irrelevant.

Some printed books have illustrations that are tipped in, and the tipped in pages are sometimes excluded from the pagination. In an Ebook the illustrations have to be 'electronically tipped in' in some fashion, either by including the electronic source of the illustrations or by providing some navigation link to them. Especially in the former case, the tipped in elements should be included in the pagination.

Don't forget that a significant percentage of the population is color-blind. The most common form is a reduced ability to distinguish between red and green; for example some shades of pink may be perceived as being a shade of blue, or lemons, oranges and

hauteur constante sur l'écran. Une position constante pour le bas du texte n'est pas aussi importante.

Il est plus difficile avec un Ebook qu'avec un livre papier de le feuilleter pour trouver un endroit particulier. Les aides à la navigation — en-têtes et pieds de page — sont donc plus importantes. Chaque page doit comporter à la fois un titre de chapitre (et peut-être aussi de section) et un numéro de page. Notez que je ne tiens pas compte des publications HTML.

De nombreuses visionneuses de livres électroniques vous permettent de sauter à une page donnée. Cependant, les numéros de page qu'ils utilisent sont souvent basés sur le numéro de séquence de la première page, et non sur le folio affiché. Dans ce cas, il peut être utile de prévoir une séquence continue de numéros de page, même si les folios sont imprimés dans des styles différents. Par exemple, si la page de garde utilise des chiffres romains et la page principale des chiffres arabes et que la dernière page de la page de garde est la page xi, alors la première page de la page principale sera la page 12.

Je ne vois pas l'intérêt pour les livres électroniques d'avoir des pages blanches — en fait, le concept de recto ou de verso n'est pas pertinent.

Dans certains livres imprimés, les illustrations sont insérées dans le livre, et les pages insérées sont parfois exclues de la pagination. Dans un livre électronique, les illustrations doivent être intégrées électroniquement d'une manière ou d'une autre, soit en incluant la source électronique des illustrations, soit en fournissant un lien de navigation vers celles-ci. Dans le premier cas surtout, les éléments intégrés doivent être inclus dans la pagination.

N'oubliez pas qu'un pourcentage significatif de la population est daltonien. La forme la plus courante est une capacité réduite à faire la distinction entre le rouge et le vert ; par exemple, certaines nuances de rose peuvent être perçues comme une nuance de

limes may all appear to be the same color. Along with color-blindness there may be a reduced capacity to remember colors.

I have seen Ebooks where color has been liberally used to indicate, say, different revisions of the text or different sources for the data in a graph. Unless the colors used are really distinctive 10% or more of the potential readership will be lost or confused. Further, Ebooks may be printed for reading off-line and if a non-color printer is used then any colors will appear as shades of grey; these must be such that they are both readily distinguishable and legible. Yellow on white is almost as difficult to read as off-white on white or navy blue on black, all of which I have seen on web sites but rarely have I seen the text after I have tried to print the page.

bleu, ou les citrons, les oranges et les citrons verts peuvent sembler être tous de la même couleur. Le daltonisme peut s'accompagner d'une capacité réduite à se souvenir des couleurs.

J'ai vu des livres électroniques où la couleur a été utilisée généreusement pour indiquer, par exemple, différentes révisions du texte ou différentes sources de données dans un graphique. À moins que les couleurs utilisées ne soient vraiment distinctives, 10 % ou plus du lectorat potentiel sera perdu ou confus. De plus, les livres électroniques peuvent être imprimés pour être lus hors ligne et si une imprimante monochrome est utilisée, toutes les couleurs apparaîtront comme des nuances de gris ; celles-ci doivent être telles qu'elles soient à la fois faciles à distinguer et lisibles. Le jaune sur le blanc est presque aussi difficile à lire que le blanc cassé sur le blanc ou le bleu marine sur le noir, que j'ai tous vus sur des sites web mais dont j'ai rarement vu le texte après avoir essayé d'imprimer la page.

Four

Styling the elements

A book should present a consistent typographic style throughout, although some elements, principally those in the front matter and back matter may be treated slightly differently than the main body.

Much of this chapter is based on my interpretation of my namesake's work (Wilson 1993) and the *Chicago Manual of Style* (Grossman 1993).

Un livre doit présenter un style typographique cohérent d'un bout à l'autre, même si certains éléments, principalement ceux de la première et de la dernière parties, peuvent être traités légèrement différemment du corps principal.

Une grande partie de ce chapitre est fondée sur mon interprétation des travaux de mon homonyme (WILSON 1993) et du *Chicago Manual of Style* (GROSSMAN 1993).

4.1 Front matter

4.1.1 TITLE PAGES

The main and half-title pages are the gatekeepers to the book. As such, they need to be welcoming and give an indication of the 'look and feel' of the contents. You don't want to scare off potential readers before they have even cursorily scanned the contents.

The half-title, or bastard title, page contains just the title of the work, which is traditionally set high on the page — perhaps about as high as the chapter openings. The title page itself presents the title in full, the author and maybe the illustrator or other names likely to attract the reader, and perhaps the publisher and date. Both the title pages are recto but the full title may be a double spread. The full title layout in particular must be both attractive and informative.

Quoting from Ruari McLean (McLean 1980, p. 148) in reference to the title page he says:

> The title-page states, in words, the actual title (and subtitle, if there is one) of the book and the name of the author and publisher, and sometimes also the number of illustrations, but it should do more than that. From the designer's point of view, it is the most important page in the book: it sets the style. It is the page which opens communication with the reader…
>
> If illustrations play a large part in the book, the title-page opening should, or may, express this visually. If any form of decoration is used inside the book, e.g., for chapter openings, one would expect this to be repeated or echoed on the title-page.
>
> Whatever the style of the book, the title-page should give a foretaste of it. If the book consists of plain text, the title-page should at least be in harmony with it. The title itself should not exceed the width of the type area, and will normally be narrower…

Advertising

If the book is one of a series, or the author has been prolific, then details of associated works may be provided. Titles by the same author are usually set in italic, and a series title perhaps in small caps. The font size should be no larger than for the main text. This advertising material may be put on the copyright page but it is more often on the recto page immediately after the half-title, before the title page, or on the verso of the half-title page.

Si le livre fait partie d'une série, ou si l'auteur a été prolifique, les détails des ouvrages associés peuvent être fournis. Les titres d'un même auteur sont généralement mis en italique, et le titre d'une série peut-être en petites capitales. La taille de la police ne doit pas être supérieure à celle du texte principal. Ce matériel publicitaire peut être placé sur la page de copyright, mais il est plus souvent sur la page recto immédiatement après la page de faux-titre, avant la page de titre, ou au verso de la page de faux-titre.

Frontispiece

The traditional place for a frontispiece, which may be the only illustration in the

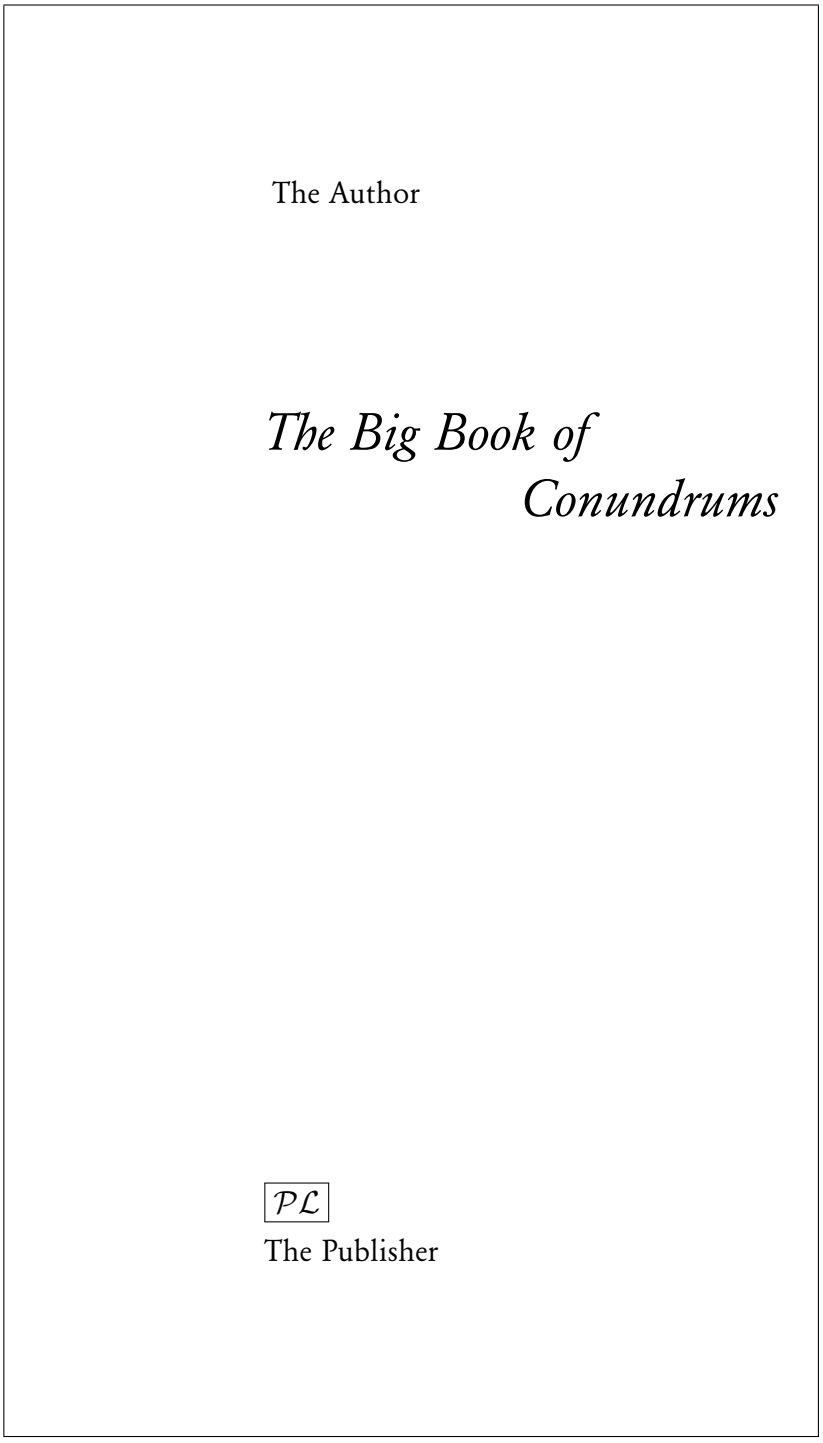


FIGURE 4.1 – Title page design based on Ruari McLean's *Jan Tschichold : Typographer*

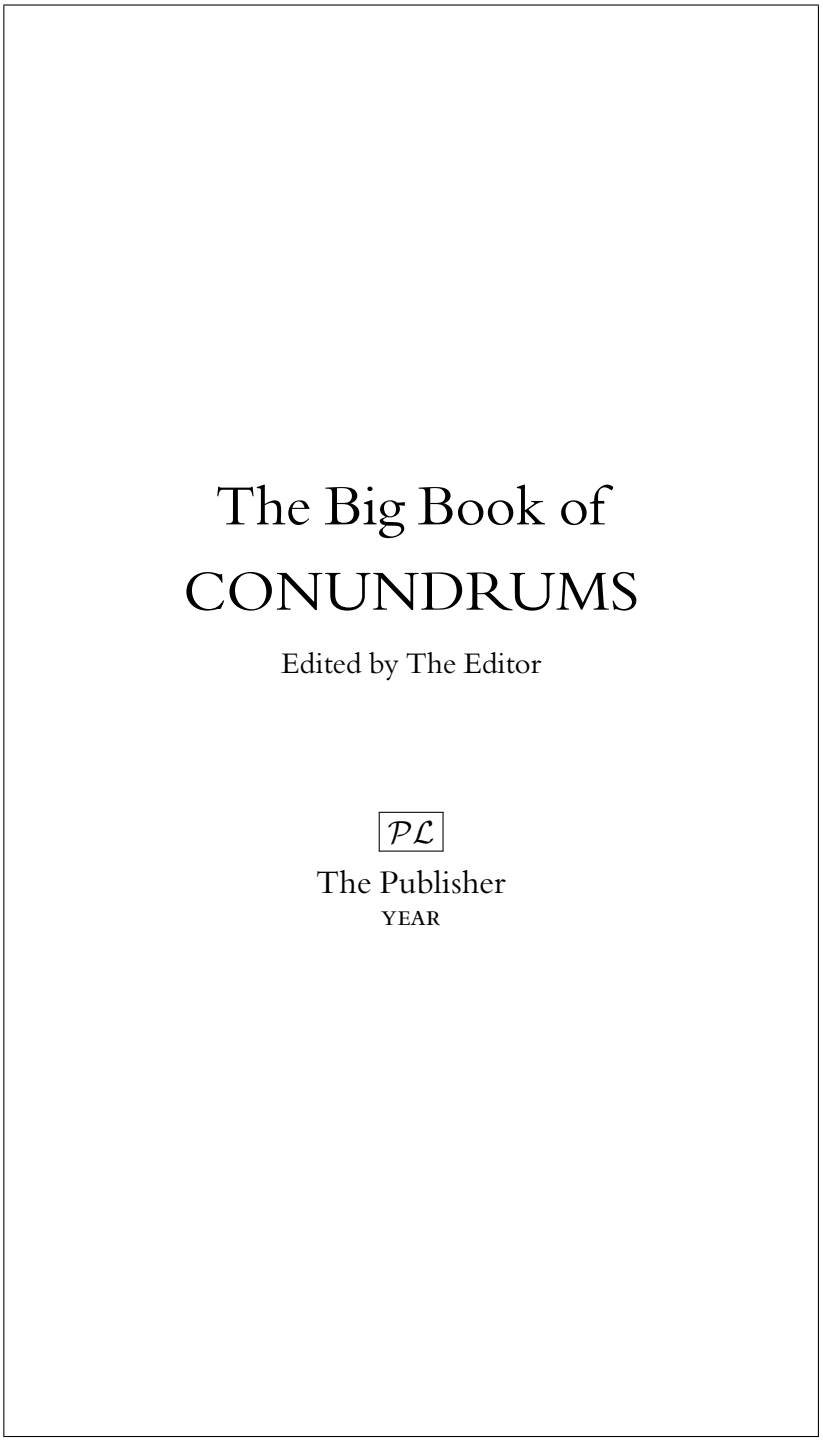


FIGURE 4.2 – Title page based on a design by Rudolph Ruzicka for a book of Robert Frost's poetry

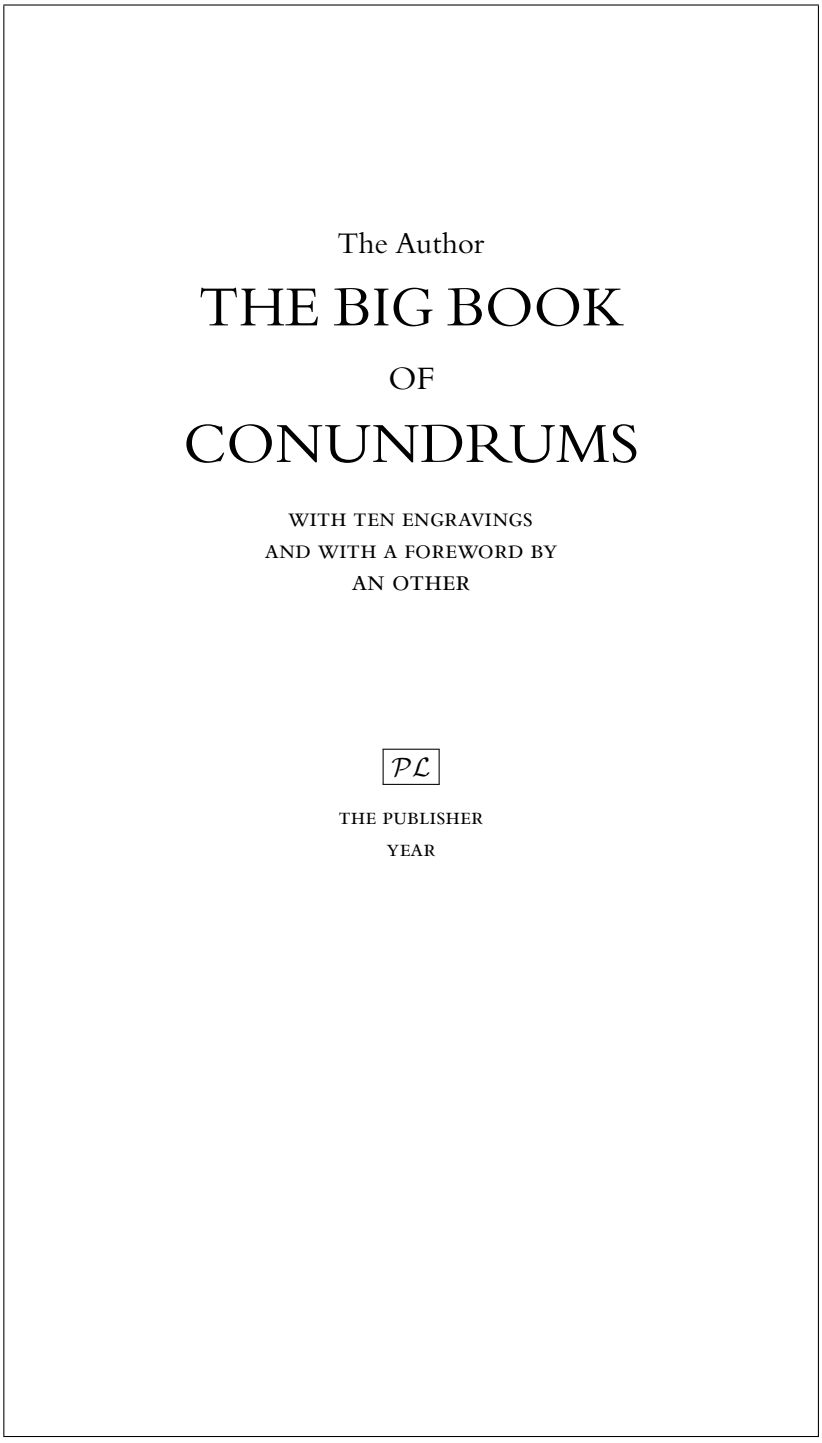


FIGURE 4.3 – Title page based on a design by Will Carter for *The Rime of the Ancient Mariner*

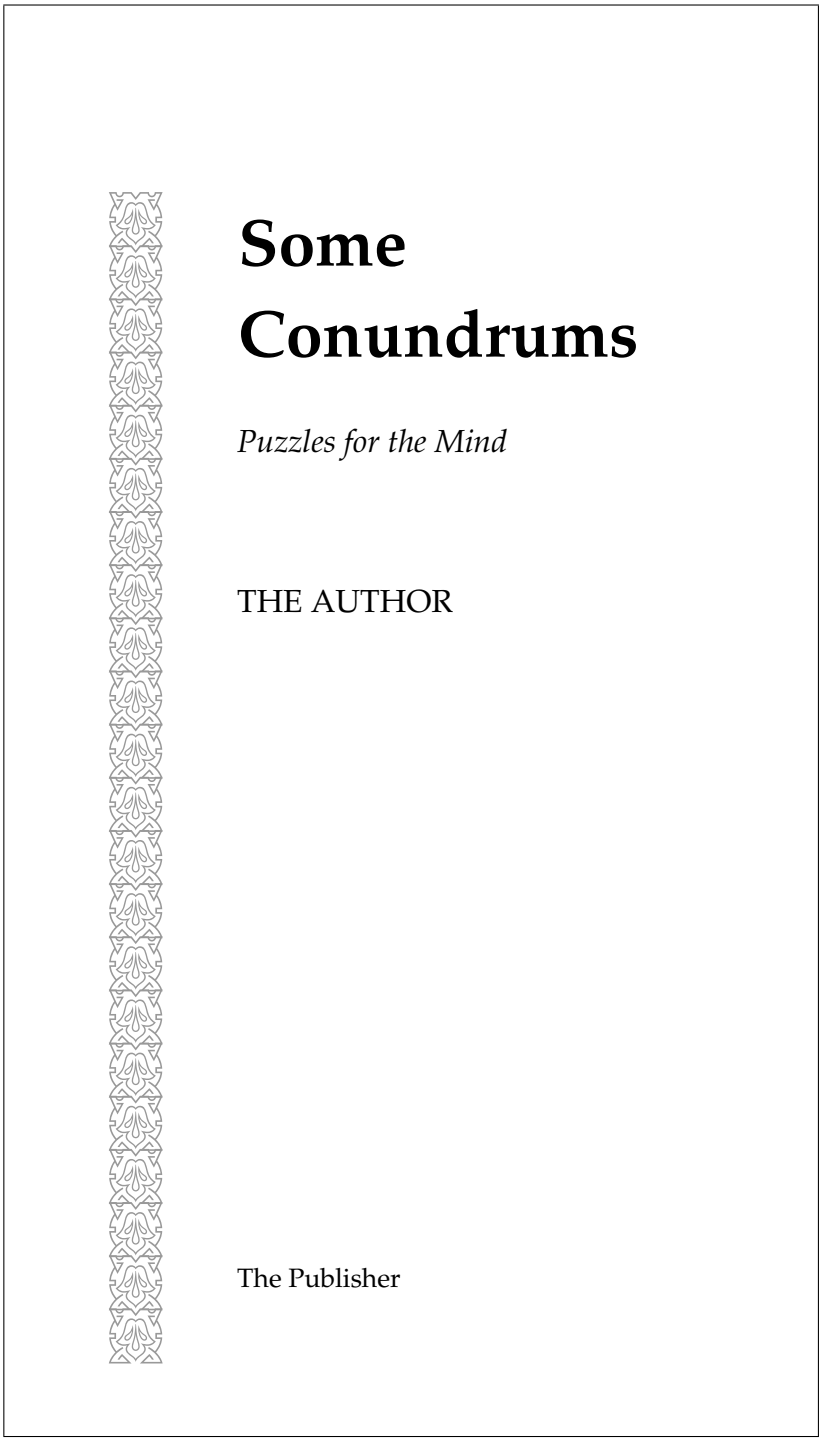


FIGURE 4.4 – Title page design based on Nicholas Basbanes' *Gentle Madness*

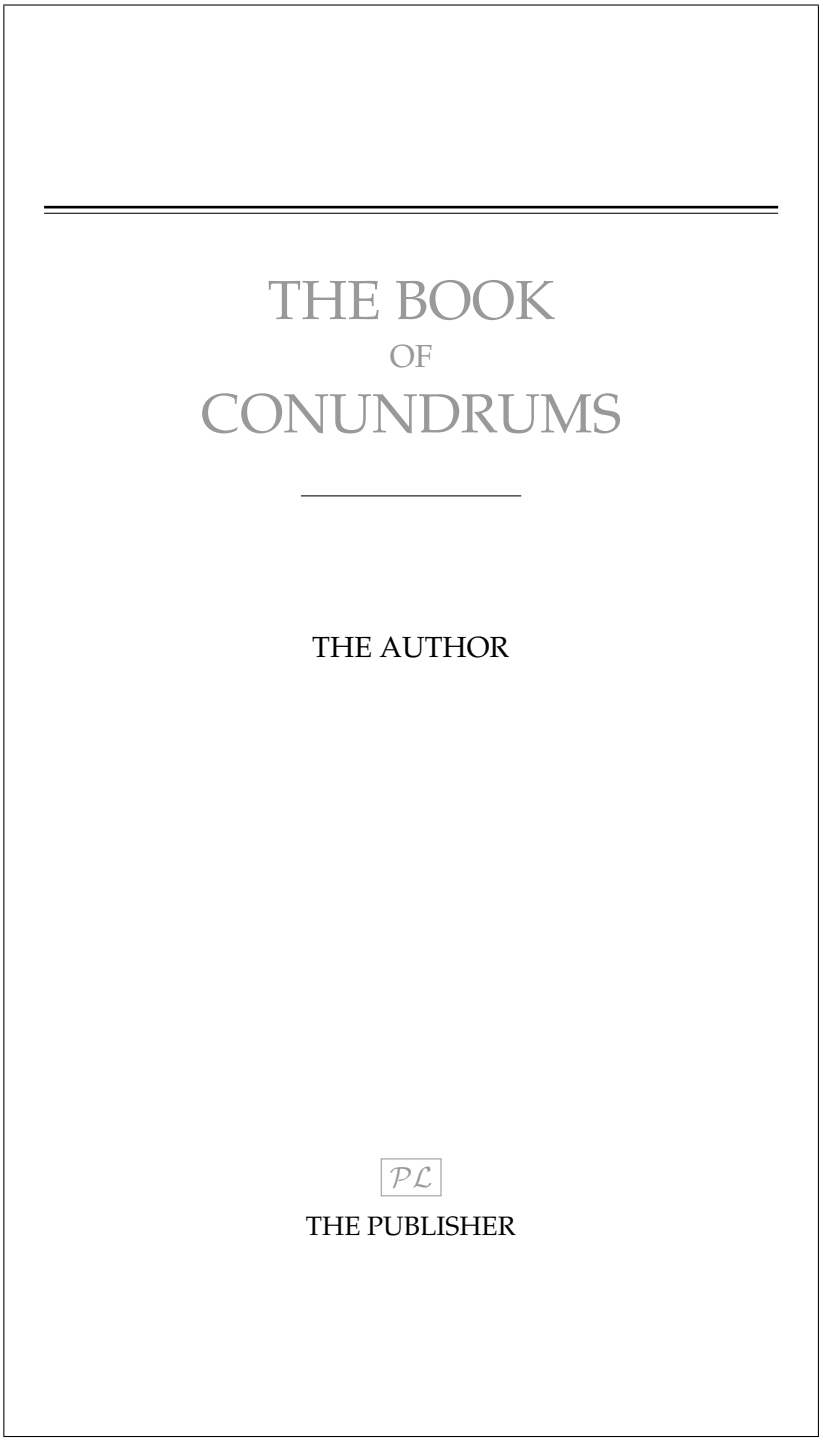


FIGURE 4.5 – Title page based on the design for *Anatomy of a Typeface*

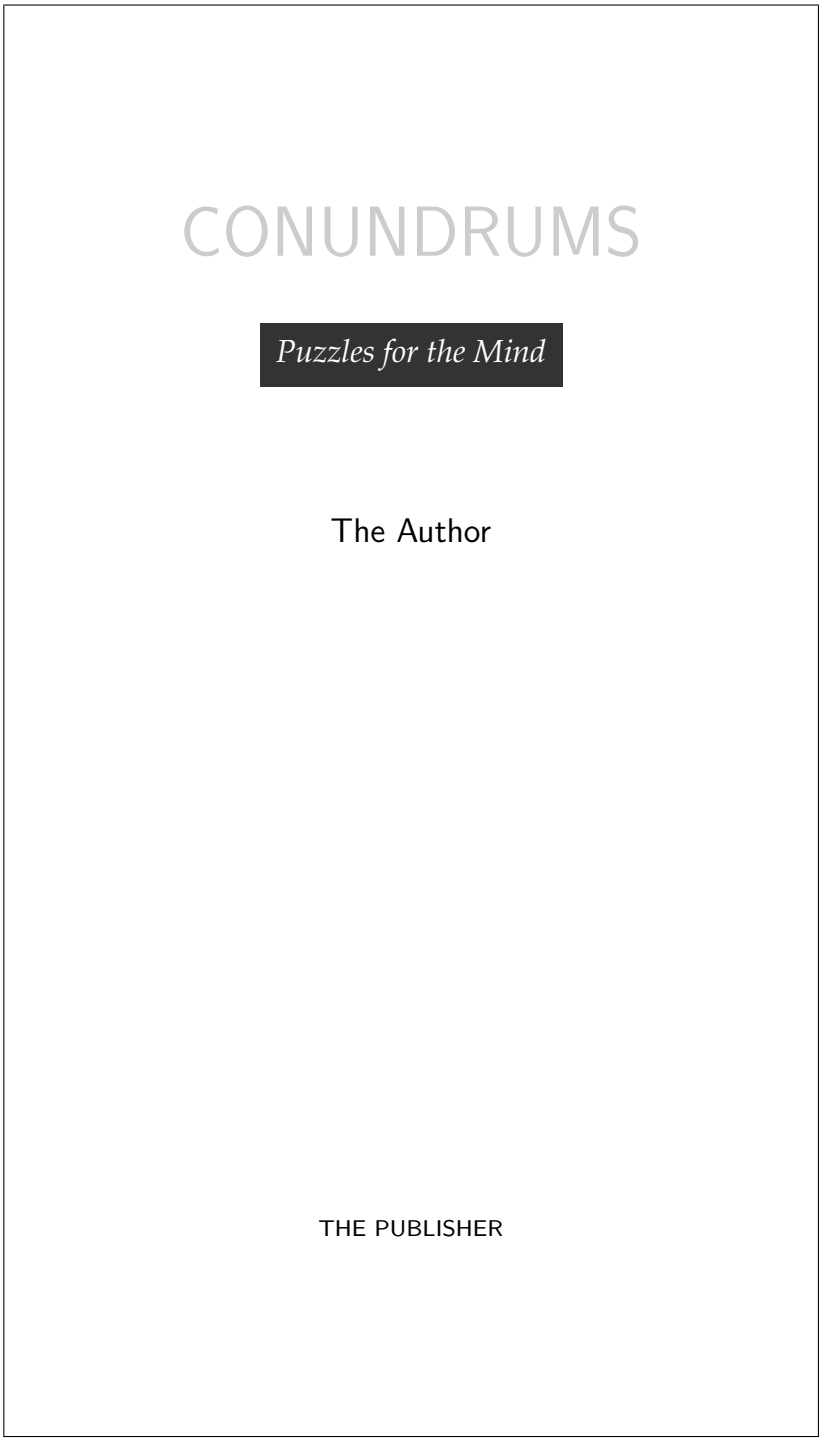


FIGURE 4.6 – Title page based on the design for *Lost Languages*

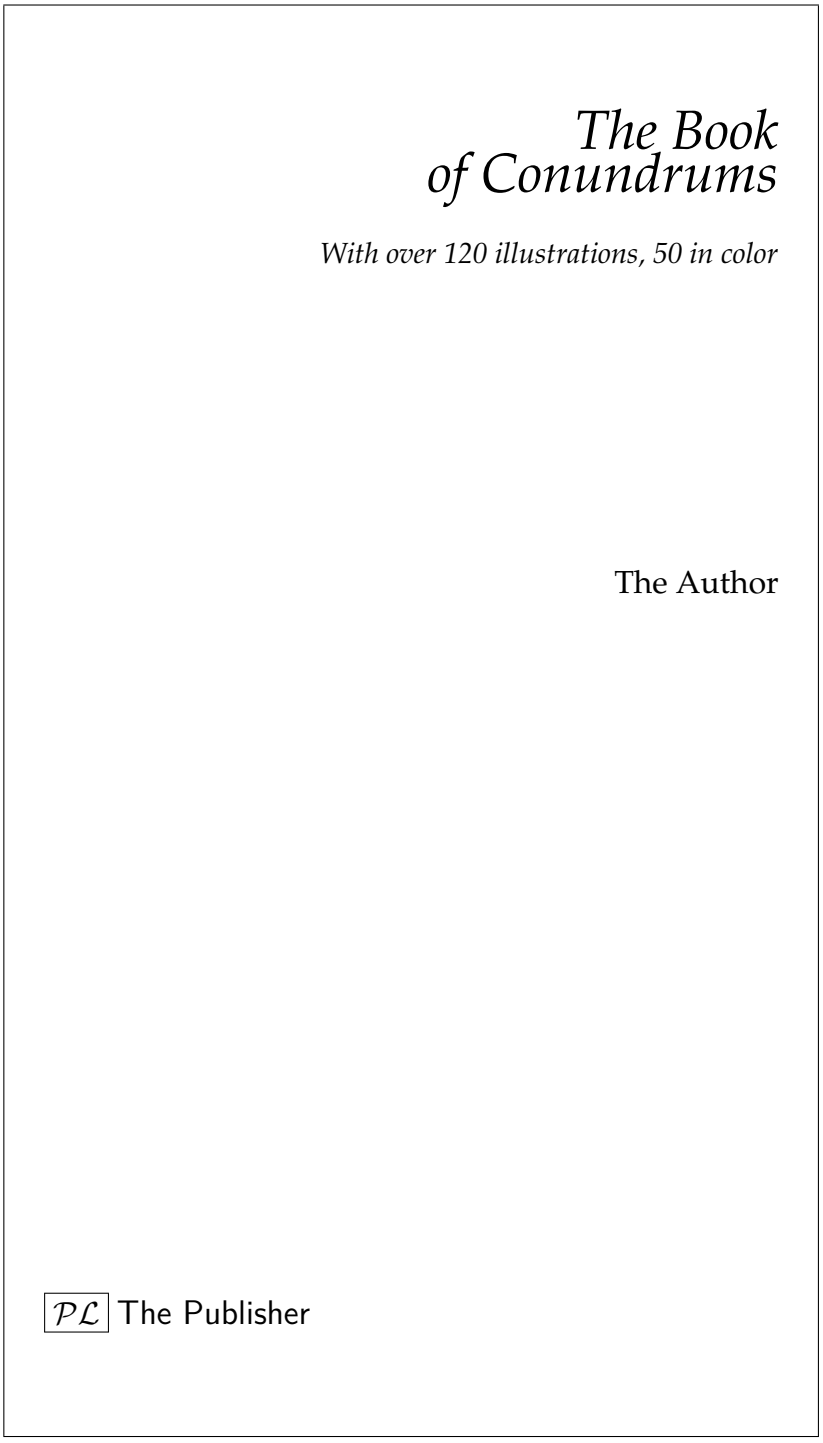


FIGURE 4.7 – Title page based on the design for *The Story of Writing*

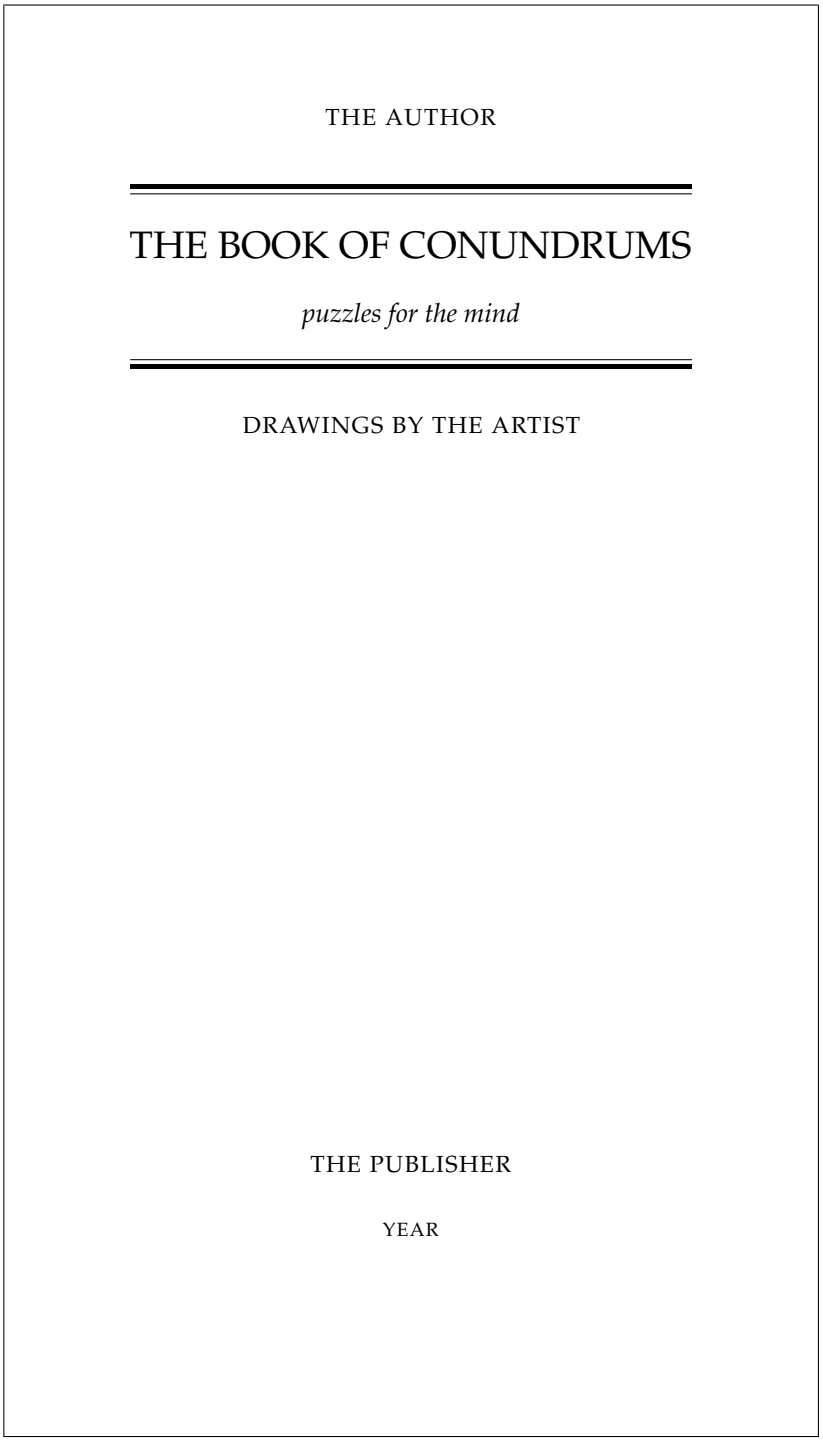


FIGURE 4.8 – Title page based on a design for the Folio Society's edition of *Three Men in a Boat* (first published in 1889)

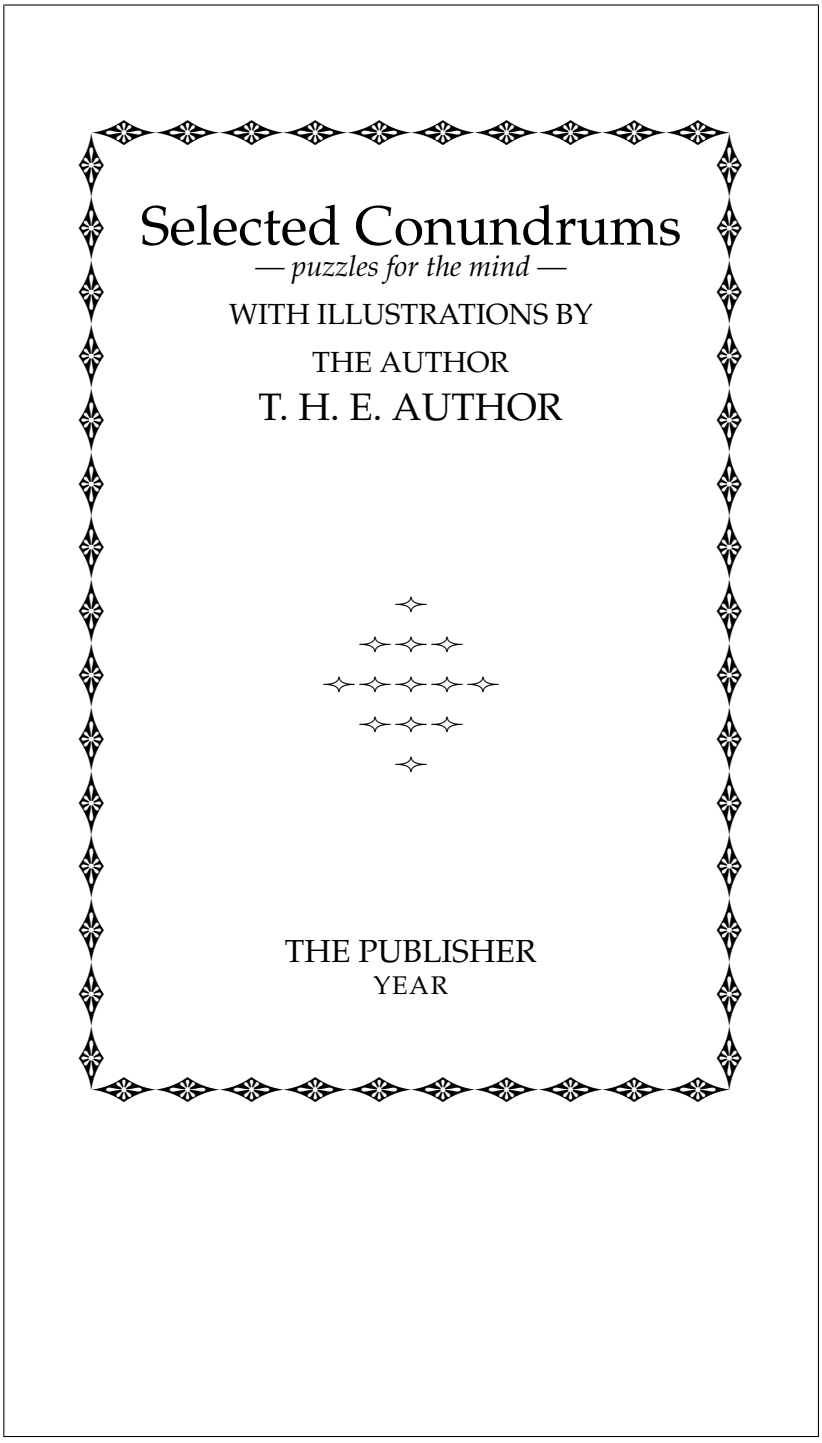


FIGURE 4.9 – Title page based on a design for the Folio Society's edition of *Zuleika Dobson* (first published in 1911)

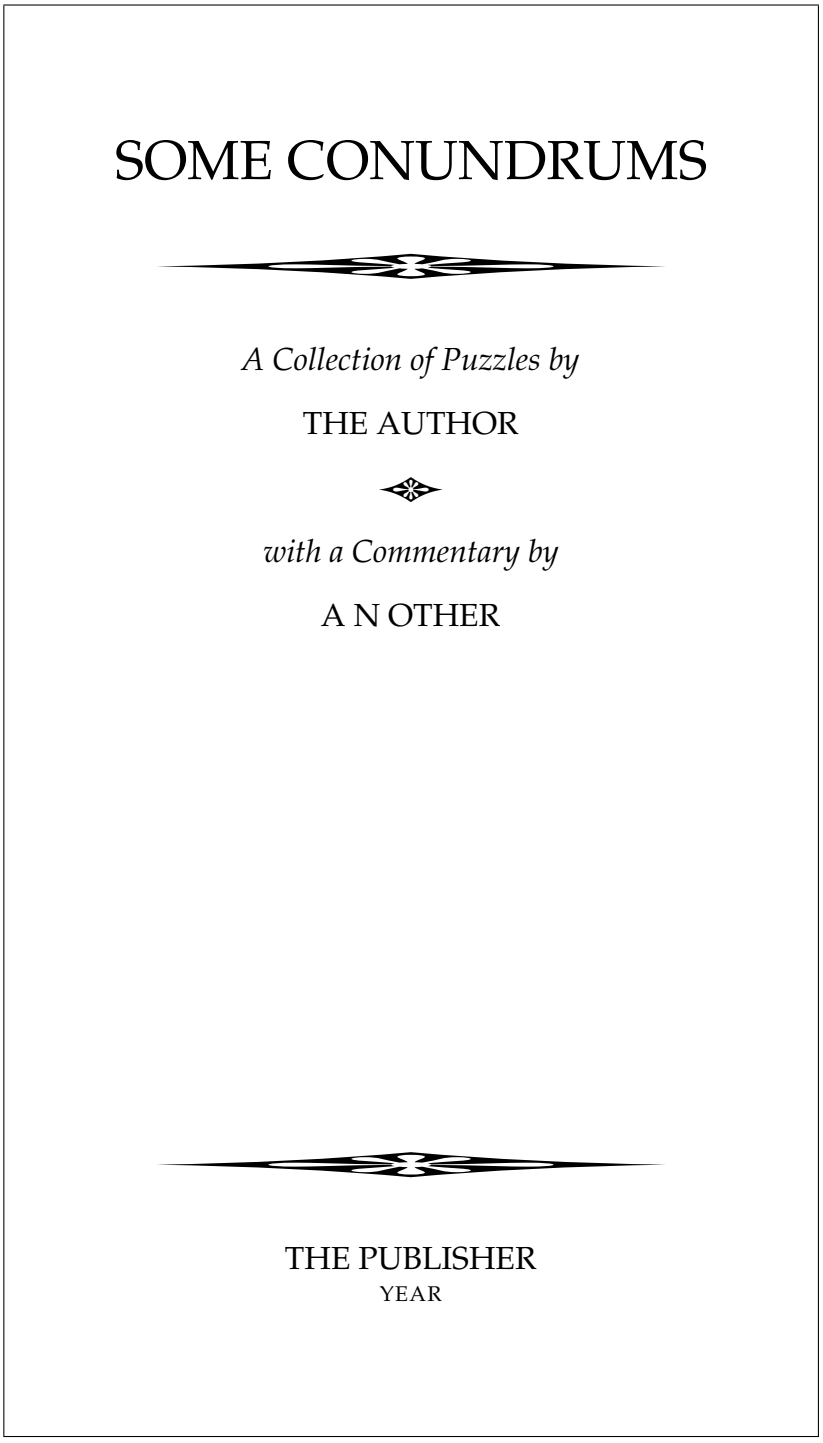


FIGURE 4.10 – Title page based on a design for the Cambridge University Printer's Christmas book *Words in Their Hands*

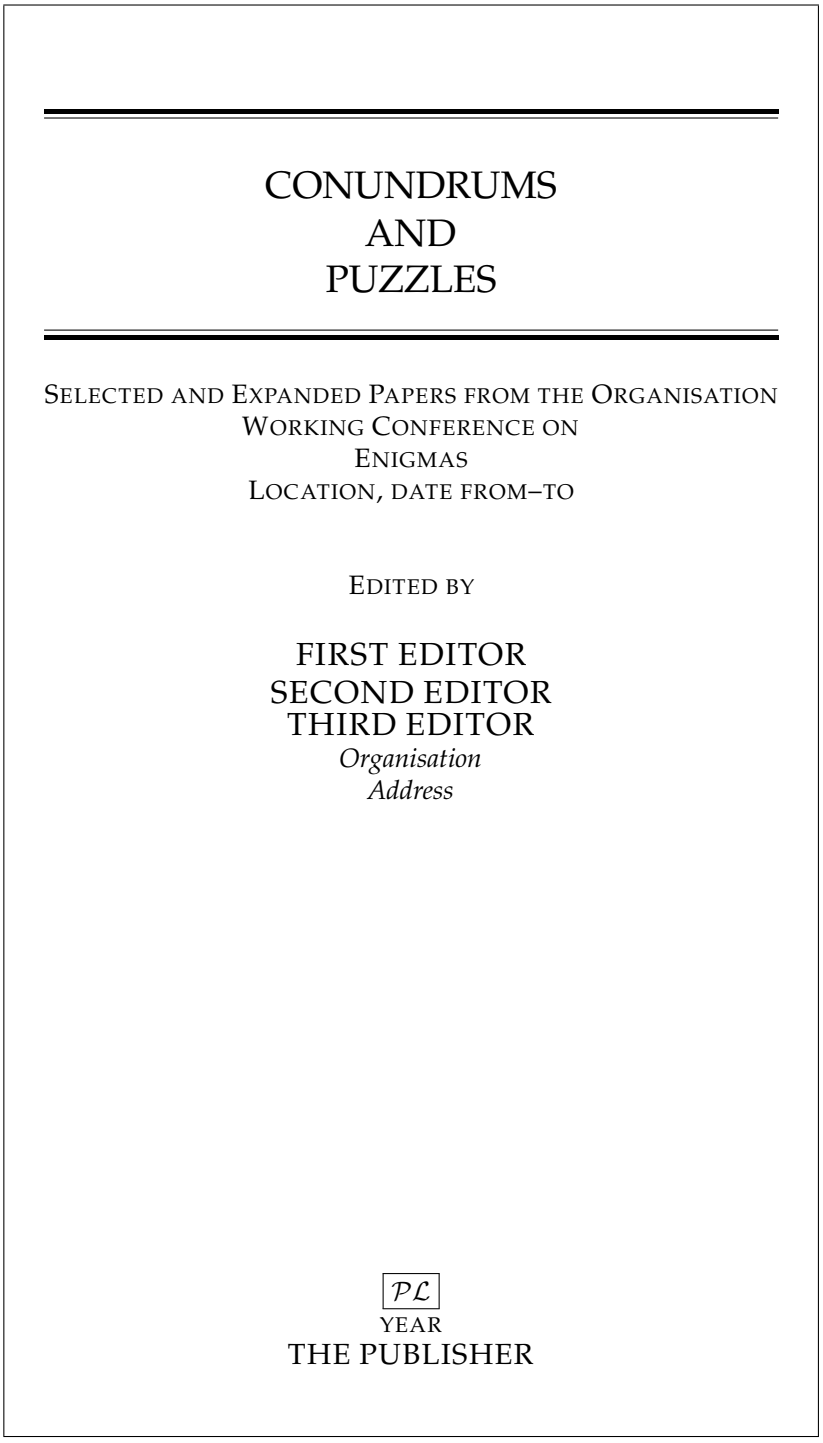


FIGURE 4.11 – Title page design for an annual International Federation for Information Processing workshop

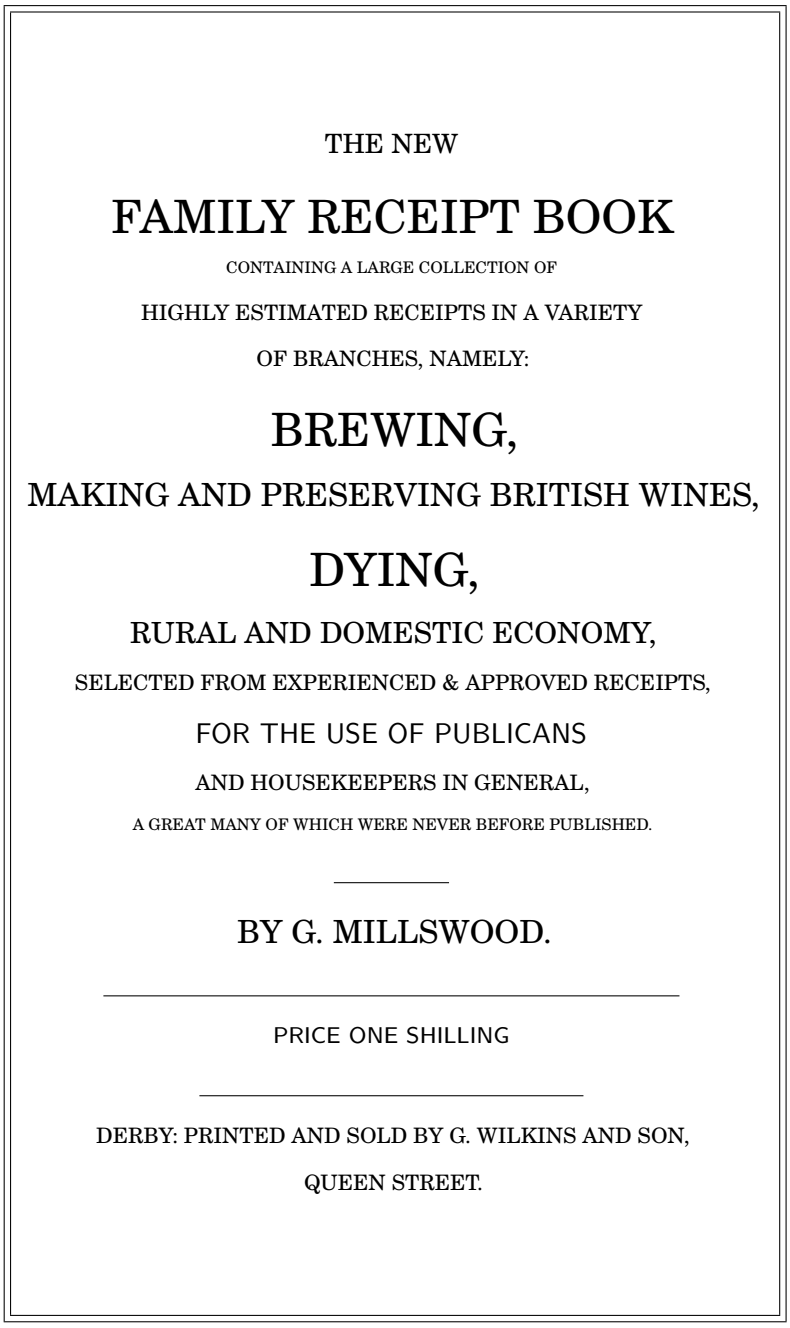


FIGURE 4.12 – Title page of a Victorian booklet

book, is facing the title page. Every attempt must be made to make the resulting double spread harmonious.

4.1.2 COPYRIGHT PAGE

The copyright and related publishing information is set in small type on the verso of the title page. In some instances the book designer's name may be listed among the small print.

Le copyright et les informations relatives à l'édition sont inscrits en petits caractères au verso de la page de titre. Dans certains cas, le nom du maquettiste peut figurer parmi les petits caractères.

4.1.3 DEDICATION

A dedication is nearly always on a recto page and simply typeset. If pages are limited it could be placed at the top of the copyright page instead.

La dédicace figure presque toujours sur une page recto et est simplement tapée. Si le nombre de pages est limité, elle peut être placée en haut de la page de copyright.

4.1.4 FOREWORD AND PREFACE

The same type size should be used for the headings 'foreword', 'preface', 'acknowledgements', etc., and the similar ones in the back matter. This may be the same size as the chapter heads, or smaller. The body type should be the same as for the main matter text. The foreword starts on a recto page. It may face the copyright page, or if there is a dedication it will face the dedication's blank verso.

La même taille de caractères doit être utilisée pour les titres « avant-propos », « préface », « remerciements », etc. et les titres similaires dans les documents de fond. La taille des caractères peut être la même que celle des têtes de chapitre, ou plus petite. Le corps du texte doit être le même que celui du texte principal. L'avant-propos commence sur une page recto. Il peut faire face à la page des droits d'auteur ou, s'il y a une dédicace, il fera face au verso vierge de la dédicace.

The preface, which is the author's opening statement, is treated like a chapter opening, and commences on a recto page.

La préface, qui peut être vue comme le discours d'ouverture de l'auteur, est traitée comme un début de chapitre et commence sur une belle page.

4.1.5 ACKNOWLEDGEMENTS

If there are any acknowledgements and they require only a few sentences then they are often put at the end of the preface, if there is one. Otherwise the acknowledgements should be treated as a distinct unit, like a foreword or preface, and commence on a recto page.

S'il y a des remerciements et qu'ils ne nécessitent que quelques phrases, ils sont souvent placés à la fin de la préface, s'il y en a une. Sinon, les remerciements doivent être traités comme une unité distincte, comme un avant-propos ou une préface, et commencer sur une belle page.

4.1.6 CONTENTS AND ILLUSTRATION LISTS

The table of contents is often laid out so that the page numbers are not too distant from the titles, thus reducing the need for

dotted lines, even if this makes the contents block narrower than the text page width. An alternate strategy is to use more interlinear space between the entries so that there is little or no difficulty in recognising which page numbers belong to which titles. The parts of major sections should be clearly separated to aid visual navigation.

If the captions in an illustration list are short, and it follows the contents list then it should be set in the same style as the contents. If, however, the list is at the back of the book a smaller font size could be used.

4.1.7 INTRODUCTION

The heading for an Introduction is an unnumbered chapter opening on a recto page. The body text is set in the same font as the main body text.

4.1.8 PART TITLE PAGE

If the book is divided into Parts then the Part One page could either precede or follow the Introduction. Ideally the layout of the title pages for the Parts should follow the layout of the book's half-title page to provide a cohesiveness throughout the work.

4.2 Main matter

4.2.1 CHAPTER OPENINGS

Normally, chapters are the major divisions of a (volume of a) book, but if it is long it may have higher divisions, such as parts, or even books. In any event, chapters are numbered consecutively throughout the volume. The numbering is usually arabic but if there are few chapters, or there are numbered subdivisions within chapters, or the work has classical allusions, then roman numerals might be appropriate.

Chapters often begin on recto pages but if there are many short chapters or reproduction cost is all important then they may begin on the page immediately following the end of the previous chapter, or, in rare cases, even on the same page if there is enough space. In any event, the first chapter should start on a recto page.

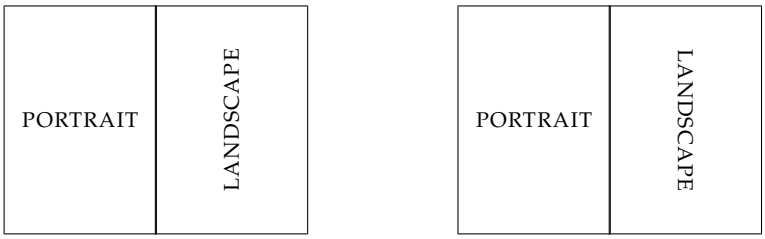


FIGURE 4.13 – Portrait and landscape spreads : the layout on the left is preferable to the one on the right

4.2.2 MIXED PORTRAIT AND LANDSCAPE PAGES

It is usual for all the pages in a document to be in portrait but this is not always possible if there are illustrations or tabular material that is better displayed in landscape orientation rather than portrait.

When a double spread consists of a portrait page and a landscape page, as in figures 4.13 and 4.14, there are two choices for which way the landscape page is turned with respect to the portrait page. In each case it seems more natural to me when the document has to be turned to the right to view the landscape page.

Figure 4.15 shows double spreads where both pages are in landscape orientation. Whichever way they face, they must both face in the same direction so that the document has only to be turned once to read both of them.

The general rule for mixed landscape and portrait pages is that the document is held in one position to read the portrait pages and is turned in a consistent direction, usually to the right, to read the landscape pages. The key is consistency.

4.2.3 EXTRACTS

Typographers use ‘extract’ as a generic term for what I would think of as a quotation. Essentially a quotation is an extract from some source. Quotations from other works, unless they are so short as to be significantly less than a line, should be set off

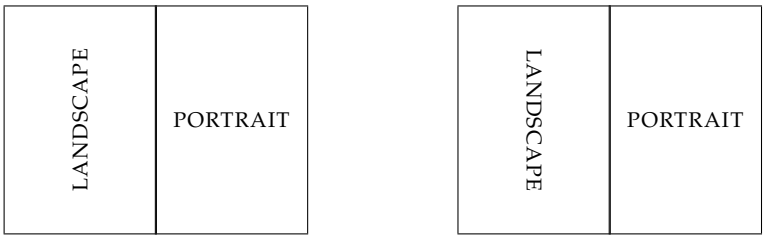


FIGURE 4.14 – Landscape and portrait spreads : the layout on the left is preferable to the one on the right

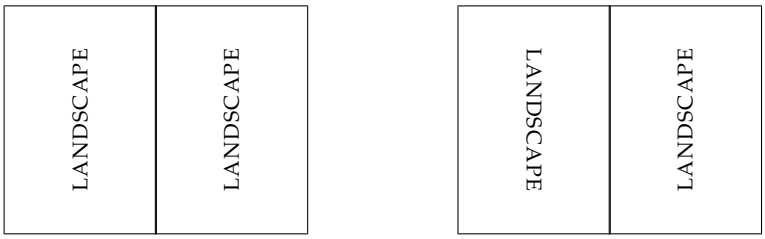


FIGURE 4.15 – Double landscape spreads : never use the layout on the right

from the main text. This could be as an indented block, or by using a different type style or size, or a combination of these. A size difference of one or two points from the body size is usually enough to be distinctive, for instance 11/13 or 10/12 point for a 12/14 point body size. In any event, extra space, at least two or three points, should be inserted and below the extract.

4.2.4 FOOTNOTES AND ENDNOTES

This section is a synthesis of the views of Ruari McLean (McLean 1980), Jan Tschichold (Tschichold 1991) and Emerson Wulling (Wulling 1953).

Footnotes are ancilliary to the main material and expand in some way upon the current theme. For instance, remarks that are too large or off the main thread, or some side comment by the author, may be sunk to a footnote at the bottom of the page. By definition, a footnote is placed at the bottom of a page but, if it is long or space is short, may run over to a second, or even a third page. A

footnote should have some immediate relevance to the reader.

Endnotes, which are collected together at the end of the document, include material similar to that in footnotes, but which is not of immediate interest. If you use an endnote it is safe to assume that only a small percentage of your readers will ever correlate it with the text.

Within the text the presence of a footnote is indicated by a raised 'reference mark' following the word, phrase, or sentence to which it refers. The same mark is used to introduce the footnote at the bottom of the page. The reference mark may be either a symbol or a number. For illustrative purposes I'm using symbols as markers in this section.

If there are many footnotes then it is convenient for the reader if numbers are used for the marks. The numbering may be continuous throughout the document, or start afresh with each chapter; starting anew on each page may lead to some confusion. When there is only an occasional footnote then symbols are usually preferred as reference marks.

Endnotes may or may not be marked in the main text. If they are marked then numbers should be used, not symbols. If there are both footnotes and marked endnotes then different series of marks must be used for the two classes of notes.

There is some debate as to how reference marks should relate to the marked element in the main text. For example, should the mark immediately follow the element* or should there be a thin space† separating the two. A convenient procedure is to use a thin space between the element‡ and the mark when the end of the element is tall, and none§ when the end of the element is low. There

*. This mark immediately folllows the main element.

†. There is a thin space between this mark and the element it is attached to.

‡. A thin space is used here.

§. There is no extra space here.

is no need for any extra space between punctuation and a reference mark. ¶

McLean, Tschichold, and Wulling are all agreed that there should not be a rule separating the main text from any footnotes — a space and change in font size is sufficient to distinguish the two. The font size for footnotes is usually two sizes smaller than the main font but with the same leading. For example if the main text is set 10/12 then footnotes would be set 8/10. Notes to tables, though, are often set even smaller; for instance at 6 pt or 7 pt in a 10 pt document. Each footnote should be introduced by the appropriate reference mark in the same font size as the note itself. If it is not raised then follow it by a period if it is a number, or by a space if a symbol, in order to distinguish it from the note's text. If there are any footnotes on a short page, such as perhaps the last page of a chapter, they are placed at the bottom of the page, not immediately below the last line of the main text.

Endnotes may be set in the same font as the main text, but usually in the same size as for footnotes. ||

Endnotes may be grouped at the end of each chapter or collected together towards the end of the document. If the latter, then they should be presented in groups corresponding to the noted chapters. It is a courtesy to the reader to indicate the page which gives rise to each note so that backward reference, as well as forward reference, is facilitated; this is especially important if there is no endnote mark in the main text. Endnotes that have no reference mark in the text are usually tagged with some words from the main text that identify the idea or statement that they are referring to. In an endnote listing note numbers are usually either indented or the note is set flush-and-hang style; that is, with the first line set flushleft and any

¶. There is no extra space here.

||. That is, two sizes smaller than the main text, but with the same leading.

remaining lines indented.

Whether a note is presented as a footnote or an endnote, it should always finish with a period.

4.3 Back matter

Divisions in the back matter are not numbered.

In commercial printing, saving a page here and a page there can save the publisher money and hopefully at least some of the reduced cost will be passed on to the readers. One way of reducing the number of pages is by reducing the font size. The material in the back matter is in some sense auxiliary to the main matter, hence of less importance, and some of it may then be reasonably set in smaller type.

4.3.1 APPENDICES

Appendices come immediately after the main text. Depending on their importance and interest they can be set in the same manner as the main text. If the appendices consist of long supporting documents they could be set in a type one or two points smaller than the main text.

In some instances there are appendices at the end of individual chapters, where they form the last divisions of the chapters, and are treated as any of the other divisions.

4.3.2 ENDNOTES

In an endnote listing, note numbers are usually either indented or the note is set flush-and-hang style; that is, with the first line set flushleft and any remaining lines indented. There are, of course, corresponding numbers at the appropriate points in the main text.

In another style, the endnotes are identified by a phrase taken from the main text together with the relevant page number. In this case there are no numbers in the text to disturb the flow, but that often means that

the notes never get read.

The notes are often set in the same sized type as used for footnotes or, if they are exceptionally interesting, in a size intermediate with the main text.

4.3.3 BIBLIOGRAPHY

The list of books, etc., that the author has used as source material is usually placed at the back of the book under the title 'Bibliography'. In some works there may be a bibliography at the end of each chapter and the title 'References' is often used for these.

A font size intermediate between those for quotations and footnotes is very reasonable, and a slight extra space between entries, say two points, can improve the readability.

4.3.4 GLOSSARY

The list of definitions of terms or symbols used in the text normally comes towards the end of a book, although it could as well come towards the end of the front matter, or a symbol list in the front matter and a glossary in the back matter. The terms are usually set in italics, or in textbooks in bold. Most often a flush-and-hang style is used, with perhaps one or two points extra leading between the entries.

The type size could be the same as for quotations if the glossary is short, or the size used for the bibliography for longer lists.

4.3.5 INDEX

The entries in an index are usually short and most indexes are set in two, or more columns. As examples, author's names are usually relatively short so an index of names would typically be in two columns; on the other hand, verse lines are relatively long and an index of first lines is often set as a single column. In either case, the entries are usually set raggedright with the page numbers close to the corresponding item's text. In multicolumn setting the gutter between the columns must be wide enough, at least a pica, so that the eye does not jump across it

TABLE 4.1 – Some relative type sizes for elements of books

Body size	12/14	10/12
Extracts	10/12	9/10
Bibliography	9/10	8/9
Glossary	9/10	8/9
Footnotes	8/9	8/8

when reading an entry. The entries are normally set flush-and-hang.

When there are subentries, or subsubentries, they are typically each indented by 1 em with respect to the major entry.

A change of collation, such as between entries starting with 'P' and those with 'Q' should be signalled by at least one or two blank lines. If the index is long, then a suitable character (e.g., 'Q') or word should be used as part of the break, indicating what is coming next. The index could be set in the same size type as the bibliography.

4.4 Type size

As indicated above, the type size is normally related to the 'importance' of what is being set. Chapter headings are set in large type and footnotes set in small type. Of course, it is a matter of judgement as to what 'important' means in any given work. Some possible combinations of type sizes are given in Table 4.1 though these should be considered as starting points for a design rather than fixed rules.

4.5 Poems and plays

In literature such as poems or plays the length of the line is determined by the author whereas in prose works the book designer establishes the measure. For this kind of work the designer should respect the author's wishes as far as possible within a maximum text width.

4.5.1 POETRY

If possible the type and measure should be chosen so that the longest poetical line will fit on one printed line, so that the shape of the poem is retained.

Poems in a book of poetry will differ from one another in their width, and the best way of setting these is to optically center each poem on the page. However, blank verse and poems where the majority of the lines are long are usually indented by a constant amount from the left margin.

In some context verse lines are numbered, often every fifth or tenth line. The numbers are usually small and right justified.

4.5.2 PLAYS

When presenting a play a list of characters (*Dramatis Personae*) is frequently given at the beginning of the play. It is presented between the title and the start of the play itself, either on the same page as the title, or on a page by itself, or at the top of the first page of the play. The list may be ordered alphabetically, in order of appearance, or by the character's importance. A remark about a character, if less than a sentence, follows the name, separated by a comma. If the remark is one or several sentences they are set as usual.

Act and scene names and numbers are often treated in the same manner as subheads in a prose work. A new act does not necessarily start a new page but there should be at least twelve points above and six below the number. A new scene has about eight points above and six points below the number. Either arabic or roman numerals may be used for the numbers. If roman is used for both, then uppercase for acts and lowercase for scenes.

The name of each speaker in a play must be readily identifiable and stand apart from the speech. Names are commonly set in a different font, such as small caps or italic, to the text which is usually set in roman. They may be placed on a separate line, where they are most easily identifiable, or, to save space,

in the margin. The names are often abbreviated, and if so the abbreviations must be consistent throughout the work.

Stage directions have to be differentiated from the text. They are usually set in italics and enclosed in brackets, or less often, in parentheses; speakers' names in stage directions, though, are set in roman to distinguish themselves. Directions at the start of a scene, such as saying who is entering, are typically centered while in the body of the scene are set flush right, often on a line by themselves.

4.6 Selecting a typeface

Choosing the 'best' typeface to use is first a matter of practicalites and secondly a question of aeshetics, feel, judgement, and other imponderables.

First off, select a typeface that is both legible and readable. The classical faces, those that have withstood the test of time[7] are usually safe in this respect.

Regarding the practicalities, if the work is to be presented on paper then a more delicate face can be used than if it is to be displayed on a computer screen where a more robust type is necessary (e.g., no fine serifs, no thin strokes), especially if it is a low resolution device.

A work that includes many dates or dimensions needs a typeface with good numerals and fractions. A face such as Palatino that has both lining and non-lining (oldstyle) numerals is likely to be useful, or a face with numerals smaller than the capitals, like Bell for example. Mathematics of course requires mathematical symbols that do not clash with the regular text face.

Where there are many quotations, particularly of verse, or references to titles of pictures or books implies that a good italic might be used to advantage, for instance Joanna or Van Dijk.

7. Measured in decades, if not centuries.

In technical works the font, size, and weight are used to distinguish between several layers of subdivisions. Faces with good relationships between capitals, small caps, italic, and possibly boldness, should be sought out. Some sans bold types can mix with serif types; you might try Gill Sans or Futura.

After the practical aspects there are two main considerations: does the face match the 'feel' of the work and is the face consistent with the period of the work?

The latter consideration is effectively a historical one. If you are resetting a work that was originally published in the 1800's don't use a twentieth century typeface, and certainly not a Sans-serif. On the other hand using blackletter for setting a twentieth century novel, even a gothic one, is not a good idea even apart from the legibility and readability factors. The face may be chosen to match the era of the text; perhaps a Sans-serif for a book about modern art but not for one about medieval England. Using Caslon, which was created in England in the early 18th century would probably not be a good choice for a book about Italian Renaissance art whereas Centaur which is based on Jenson's 15th century Venetian roman typeface would be, but then Centaur in turn would probably not be the best choice for a physics book on the big bang and string theory.

The 'feel' question is somewhat harder, partly depending on the presumed sensibilities of the reader. If the work is about aspects of Italian life then perhaps a light and quick Italian typeface would be preferable to a stolid English face. If it is a scientific work then a clean and precise face would perhaps fit the bill. Technical works often use analphabetic symbols, such as mathematical, chemical, or astrological symbols. Try and use a face that includes those symbols that you need or, failing that, try and find complementary typefaces that cover the range you need. The same applies if the work is multilingual, and especially if it involves dif-

When to her lute Corinna sings,
Her voice revives the leaden strings,
And doth in highest notes appear
As any challenged echo clear;
But when she doth of mourning speak,
Ev'n with her sighs the strings do break.

How many times do I love thee, dear?
Tell me how many thoughts there be
In the atmosphere
Of a new-fall'n year,
Whose white and sable hours appear
The latest flake of Eternity—
So many times do I love thee, dear.

Out of the day and night
A joy has taken flight —
Fresh spring and summer and winter hoar
Move my faint heart with grief, but with delight
No more, O never more!

When I was one-and twenty
I heard a wise man say,
'Give crowns and pounds and guineas
But not your heart away;
Give pearls away and rubies
But keep your fancy free.'
But I was one-and-twenty,
No use to talk to me.

FIGURE 4.16 – Verses from four poems set with Caslon, Garamond, Bodoni and Della Robbia

ferent scripts like, say, Latin and Greek; try and find matching faces, or at least typefaces that don't clash with each other.

I was recently letterpress printing some poems and the fonts available in the print shop were Bodoni, Caslon, Della Robbia and Garamond, all in 14 pt. The poems were originally written within the period 701–2008 and my problem was to try and choose what I thought would be the most appropriate font for each poem. Caslon was created in 1720 so I decided that I would only use it for poems after that date. Although Garamond was created around 1550–1600 I decided to use it for the pre-Caslon poems. To me the Bodoni and Della Robbia had a very different feel to them, one being light and the other on the grim side; I used these for the occasional poem instead of the Caslon or Garamond to try and convey some of the emotional aspect of the piece. Figures 4.16 through 4.19 show verses from four of the collection of poems set with the four fonts I had available. Decide what you would have chosen as being most appropriate. As a sidenote they are set

When to her lute Corinna sings,
Her voice revives the leaden strings,
And doth in highest notes appear
As any challenged echo clear;
But when she doth of mourning speak,
Ev'n with her sighs the strings do break.

Out of the day and night
A joy has taken flight –
Fresh spring and summer and winter hoar
Move my faint heart with grief, but with delight
No more, O never more!

How many times do I love thee, dear?
Tell me how many thoughts there be
In the atmosphere
Of a new-fall'n year,
Whose white and sable hours appear
The latest flake of Eternity—
So many times do I love thee, dear.

When I was one-and twenty
I heard a wise man say,
'Give crowns and pounds and guineas
But not your heart away;
Give pearls away and rubies
But keep your fancy free.'
But I was one-and-twenty,
No use to talk to me.

FIGURE 4.17 – Verses from four poems set with Garamond, Bodoni, Della Robbia and Caslon

When to her lute Corinna sings,
Her voice revives the leaden strings,
And doth in highest notes appear
As any challenged echo clear;
But when she doth of mourning speak,
Ev'n with her sighs the strings do break.

Out of the day and night
A joy has taken flight —
Fresh spring and summer and winter hoar
Move my faint heart with grief, but with delight
No more, O never more!

How many times do I love thee, dear?
Tell me how many thoughts there be
In the atmosphere
Of a new-fall'n year,
Whose white and sable hours appear
The latest flake of Eternity—
So many times do I love thee, dear.

When I was one-and twenty
I heard a wise man say,
'Give crowns and pounds and guineas
But not your heart away;
Give pearls away and rubies
But keep your fancy free.'
But I was one-and-twenty,
No use to talk to me.

FIGURE 4.18 – Verses from four poems set with Bodoni, Della Robbia, Caslon and Garamond

When to her lute Corinna sings,
Her voice revives the leaden strings,
And doth in highest notes appear
As any challenged echo clear;
But when she doth of mourning speak,
Ev'n with her sighs the strings do break.

How many times do I love thee, dear?
Tell me how many thoughts there be
In the atmosphere
Of a new-fall'n year,
Whose white and sable hours appear
The latest flake of Eternity—
So many times do I love thee, dear.

Out of the day and night
A joy has taken flight —
Fresh spring and summer and winter hoar
Move my faint heart with grief, but with delight
No more, O never more!

When I was one-and twenty
I heard a wise man say,
'Give crowns and pounds and guineas
But not your heart away;
Give pearls away and rubies
But keep your fancy free.'
But I was one-and-twenty,
No use to talk to me.

FIGURE 4.19 – Verses from four poems set with Della Robbia, Caslon, Garamond and Bodoni

here using 12 pt instead of the 10 pt body text size. Poetry can, with advantage, be set with larger type and leading than prose, and in italic instead of roman.

Five

Picky points

The main elements of good typography are legibility and page color. This chapter discusses some of the smaller points related to these topics.

Les principaux éléments d'une bonne typographie sont la lisibilité et le gris de la page. Ce chapitre aborde certains des détails relatifs à ces sujets.

5.1 Word and line spacing

Research has shown that the competent reader recognises words by their overall shape rather than by stringing together the individual letters forming the words. A surprisingly narrow gap between words is sufficient for most to distinguish the word boundaries.

Most typographers state that the space between words in continuous text should be about the width of the letter 'i'. Any closer and the words run together and too far apart the page looks speckled with white spots and the eye finds it difficult to move along the line rather than jumping to the next word in the next line. Figure 5.1 illustrates different values of interword spacing.

In keeping with avoiding white spots, many typographers do not recommend extra spacing after punctuation, although this does depend partly on a country's typographic history and partly on the individual. I always found typewritten texts with double spaces after the end of sentences a particular eyesore. However, with typeset texts any extra spacing is usually not as large as that.

Des recherches ont montré que le lecteur aguerri reconnaît les mots à leur forme générale plutôt qu'à l'enchaînement des lettres individuelles qui les composent. Un espace étonnamment étroit entre les mots suffit à la plupart pour distinguer les limites des mots.

La majorité des typographes affirment que l'espace entre les mots dans un texte continu doit être à peu près de la largeur de la lettre « i ». Si l'espace est trop étroit, les mots se chevauchent et si l'espace est trop grand, la page est tachetée de points blancs et l'œil a du mal à suivre la ligne a tendance à sauter au mot suivant de la ligne suivante. La figure 5.1 illustre différentes largeurs d'espaces inter-mots.

Dans le même souci d'éviter les points blancs, de nombreux typographes ne recommandent pas d'espacement supplémentaire après la ponctuation, bien que cela dépende en partie de l'histoire typographique d'un pays et en partie des goûts de chacun. J'ai toujours trouvé que les textes dactylographiés comportant des doubles espaces après la fin des phrases étaient particulièrement déplaisants. Toutefois, dans les textes typographiés, les espaces supplémentaires ne sont généralement pas aussi importants que cela.

The following paragraph is typeset with double the normal interword spacing for this font.

Most typographers state that the space between words in continuous text should be about the width of the letter 'i'. Any closer and the words run together and too far apart the page looks speckled with white spots and the eye finds it difficult to move along the line rather than jumping to the next word in the next line. Extra spacing after punctuation is not necessary.

The following paragraph is typeset with the normal interword spacing for this font.

Most typographers state that the space between words in continuous text should be about the width of the letter 'i'. Any closer and the words run together and too far apart the page looks speckled with white spots and the eye finds it difficult to move along the line rather than jumping to the next word in the next line. Extra spacing after punctuation is not necessary.

The interword spacing in the following paragraph is three-quarters of the width of the letter 'i'.

Most typographers state that the space between words in continuous text should be about the width of the letter 'i'. Any closer and the words run together and too far apart the page looks speckled with white spots and the eye finds it difficult to move along the line rather than jumping to the next word in the next line. Extra spacing after punctuation is not necessary.

FIGURE 5.1 – Interword spacings

The spacing between lines of text should be greater than the interword spacing, otherwise there is a tendency for the eye to skip to the next line instead of the next word. The space in question is the apparent amount of whitespace between the bottom of the text on one line and the top of the text on the next line. In a rough sense it is the leading minus the actual height of the font. Figure 5.2 illustrates some text typeset with different line spacings. The normal interword spacing is used in the samples. When text is set solid there is a tendancy for the descenders on one line to touch, or even overlap, the ascenders on the following line. [1]

1. TeX has a built-in mechanism that tries hard to prevent this from happening.

L'espacement entre les lignes de texte doit être supérieur à l'espacement entre les mots, sinon l'œil a tendance à passer à la ligne suivante au lieu du mot suivant. L'espace en question est la quantité apparente d'espace blanc entre le bas du texte d'une ligne et le haut du texte de la ligne suivante. En gros, il s'agit de l'interligne moins la hauteur réelle de la police. La figure 5.2 illustre un texte composé avec différents interlignes. L'espacement normal entre les mots est utilisé dans les exemples. Lorsque le texte est plein, les descendantes d'une ligne ont tendance à toucher, voire à chevaucher, les ascendantes de la ligne suivante. [1]

1. TeX a un mécanisme intégré qui s'efforce d'empêcher ce phénomène.

This and the next paragraph are set solid — the interline spacing is the same as the font size.

The normal interword spacing is used in these paragraphs. The spacing between lines of text should be greater than the interword spacing, otherwise there is a tendency for the eye to skip to the next line instead of the next word.

This and the next paragraph are set with the normal interline spacing for the font.

The normal interword spacing is used in these paragraphs. The spacing between lines of text should be greater than the interword spacing, otherwise there is a tendency for the eye to skip to the next line instead of the next word.

This and the next paragraph are set with the interline spacing 20% greater than is normal for the font.

The normal interword spacing is used in these paragraphs. The spacing between lines of text should be greater than the interword spacing, otherwise there is a tendency for the eye to skip to the next line instead of the next word.

FIGURE 5.2 – Interline spacings

5.2 Letterspacing

Letterspacing is the insertion of spaces between the letters of a word. Frederic Goudy (1865–1947), a very respected American typographer and type designer, is said to have been fond of saying, 'A man who would letterspace lower case letters would steal sheep!' Writing in 1999 Robert Bringhurst (Bringhurst 1999, p. 31) felt that to bring this dictum to modern times it was simply necessary to add that 'A woman who would letterspace lowercase would also steal sheep.'

Letterspacing is usually restricted to titles composed of uppercase letters with the intent of making the spaces between the letters visually equal. Figure 5.3 shows the word 'HISTORY' with various amounts of interletter spacings. With no extra spacing it looks cramped compared with the spaced versions. Versions with uniform spacing of thin (0.167 em) and hair (0.1 em) spaces are much improved. However, the spacing of

HISTORY without letter spacing
H I S T O R Y thin space between each letter
HISTORY hair space between each letter
HISTORY visually spaced

FIGURE 5.3 – Letterspacing : uppercase letters

HISTORY without letter spacing
H I S T O R Y thin space between each letter
HISTORY hair space between each letter
HISTORY visually spaced

FIGURE 5.4 – Letterspacing : small caps

the letters 'H', 'I' and 'S' leave something to be desired, and is especially noticeable in the version with thin spaces. Lastly a version with varied interletter spacing is shown which is optically balanced; the spaces in this case are 0.09 em, 0.12 em, 0.1 em, 0.1 em, 0.07 em and 0.1 em. The difference between this and the uniformly hair-spaced version is subtle. Different letter combinations and different fonts will require different amounts of spaces.

Figure 5.4 shows similar results for the same word set in small caps instead of regular caps. In general you might find that if you do letterspace then uniform spacing is adequate for small caps.

There can be occasions, as with emphasis with fraktur fonts, when letterspacing lowercase will not get you hung for sheep stealing. These, typically, are when dealing with some sans fonts such as a bold condensed Univers. But be very careful. Italics should never be letterspaced as they come from the handwriting tradition of 'joined up letters', as my kindergarten teacher used to call them.

5.3 Abbreviations and acronyms

The English style with abbreviations is to put a full stop (period) after the abbreviation, unless the abbreviation ends with the same letter as the full word. Thus, it is Mr for Mis-

ter, Dr for Doctor, but Prof. for Professor. No extra spacing should be used after the full stop, even if extra spacing is normally used after punctuation.

The general American, and English, trend nowadays is away from the use of periods (full stops) after abbreviations following the precept that reducing typographic fussiness increases the ease of reading. Having said that, where an abbreviation is a combination of abbreviations, such as Lt. Col for Lieutentant Colonel, often an internal period is used with a word space between the elements.

Acroynms are typeset in uppercase but the question is, which uppercase? The simple way is to use the uppercase of the normal font, like UNICEF, but if there are too many acronyms scattered around the speckled effect starts to intrude. If the font family has one, then small caps can be used, giving UNICEF. If small caps are not available, or appear undesireable, then a smaller size of the normal uppercase can be used, such as UNICEF or UNICEF; some experimentation may be required to select the appropriate size. These several versions were input as:

```
regular UNICEF text    regular UNICEF text
regular UNICEF text    regular \textsc{unicef} text
regular UNICEF text    regular {\small UNICEF} text
regular UNICEF text    regular {\footnotesize UNICEF} text
```

5.4 Dashes and ellipses

Most fonts provide at least three lengths of dashes. The shortest is the hyphen (-), then there is the en-dash (–) which is approximately the width of the letter ‘n’, and the largest is the em-dash (—) which is approximately twice the length of an en-dash. An expert font may provide more.

Unsurprisingly, the hyphen is used for hyphenation, such as in em-dash, or at the end of a line where a word had to be broken.

The en-dash is normally used between numerals to indicate a range. For example a

reference may refer to pages 21–27 in some journal or book. There is no space surrounding the en-dash when used in this manner.

The em-dash, or the en-dash, is used as punctuation — often when making a side remark — as a phrase separator. When en-dashes are used as punctuation it is normal to put spaces around them but the question of spaces around an em-dash appears to be the subject of some contention. Roughly half the participants in any discussion advocate spaces while the other half view them as anathema. If you do use em-dashes be sure to be consistent in your use, or otherwise, of spaces.

Ellipses are those three, or is it four, dots indicating something is missing or continues somewhat indefinitely. In the middle of a sentence, or clause or ... they have a space on either side. At the end of a sentence the English style is to have no spaces and include the full stop, making four dots in all, like so....

Dashes are also used to indicate missing characters or a word. Missing characters in the middle of a word are indicated by a 2 em-dash (a dash that is twice as long as an em-dash), as in:

> **snafu,** *(U.S. slang) n.* chaos. — *adj.* chaotic. [situation *n*ormal — *a*ll *f*——d *u*p.]

A 3 em-dash is used to indicate a missing word. When I lived in Maryland my local small town newspaper was the *Frederick Post.* The following is from an obituary I happened to read; I have hidden the name to protect the innocent.

> Although he had spent the last 92 years of his life here, Mr ——— was not a Fredericktonian.

5.5 Punctuation

5.5.1 QUOTATION MARKS

'There's glory for you!'

'I don't know what you mean by "glory" ', Alice said.

Humpty Dumpty smiled contemptuously. 'Of course you don't — till I tell you. I meant "there's a nice knock-down argument for you"!'

'But "glory" doesn't mean "a nice knock-down argument" ', Alice objected.

'When *I* use a word', Humpty Dumpty said, in a rather scornful tone, 'it means just what I choose it to mean — neither more nor less'.

"There's glory for you!"

"I don't know what you mean by 'glory,' " Alice said.

Humpty Dumpty smiled contemptuously. "Of course you don't — till I tell you. I meant 'there's a nice knock-down argument for you!' "

"But 'glory' doesn't mean 'a nice knock-down argument,' " Alice objected.

"When *I* use a word," Humpty Dumpty said, in a rather scornful tone, "it means just what I choose it to mean — neither more nor less."

FIGURE 5.5 – Quotation marks : top English, bottom American

Quotation marks surrounding speech and associated punctuation are a fruitful source of confusion.

The American style is to use double quotes at the start (“) and end (”) of spoken words. If the speaker quotes in the speech then single quote marks (‘ and ’) are used to delineate the internal quotation.

The English practice is exactly the opposite. Main speech is delineated by single quotes and internal quotations by double quotes. In any event, if single and double quotes are adjacent they should be separated by a thin space in order to distinguish one from the other — a full interword space is too wide.

As there are likely to be few internal quotations it seems to me that the English practice produces a less spotty appearance than the American. Figure 5.5 shows the same text typeset in both the English and American styles. The example is from Lewis Carroll's *Through the Looking Glass and what Alice Found There* and has an unusually large number of internal quotations.

Where to put punctuation marks with quotes is vexatious. Again the English and American practice tends to differ. The American tendency is to put commas and periods inside the closing quote mark and colons and semicolons after the mark. English editors prefer to put punctuation after the mark. In either case, it is difficult to know exactly what to do. I get the impression that for every example of the 'correct' form there is a counter-example. Some try and avoid the problem altogether by putting the lower marks, like commas or periods, directly below the quotation mark but that may cause problems if the resulting constructs look like question or exclamation marks. In Figure 5.5 I have tried to use the English and American punctuation styles in the respective examples but it is likely that there are misplacements in both. I think it's basically a question of doing what you think best conveys the sense, provided there is consistency.

5.5.2 FOOTNOTE MARKS

Where to put a footnote marker may be another vexed question in spite of the general principal being easy to state: The mark goes immediately after the text element that the note refers to.

There is no doubt what this means [2] when the text element is a word in the middle of other words. Doubt raises its head when the reference is to a phrase, like this one [3], which is set off within commas, or when the note refers to a complete sentence. [4]

Like punctuation and quotation marks, should a footnote mark come before or after the punctuation mark at the end of a phrase or a sentence? I have shown both positions [5] in the previous paragraph. The general rule that I have deduced is that the mark comes after the punctuation, but there are always those who like to prove a rule.

2. Except to some I know.
3. I hope that this is a phrase.
4. Is this mark in the correct place?

There are other marks that may be associated with a word, like (registered) trademarks. These may produce ugly gaps. Sometimes these cannot be avoided but it may be possible to change the text to minimise the hiccup. There is an example of this on page xvii. I tried various schemes in identifying 'PostScript' as being a registered trademark of Adobe Systems Incorporated. Among the discarded trials were:

> ...languages like PostScript™, presumably ...
>
> ...languages like PostScript®, presumably ...
>
> ...like the PostScript® language, presumably ...

My final solution was to note the registered trademark information in a footnote:

> ...languages, like PostScript[6], presumably ...

In this case I decided that the footnote was really tied to the word 'PostScript', taking the place of the registered symbol, so I put the footnote mark before the comma rather than after it.

5. Marks 3 and 4.

6. PostScript is a registered trademark of Adobe Systems Incorporated.

5.5.3 FONT CHANGES

Sometimes a word or two may be set in a different font from the surrounding text, such as when emphasizing a word by setting it in an italic font. If the word is followed by a punctuation mark the normal practice is to set the punctuation mark using the new font instead of the normal font. In some cases the font used for the punctuation may not be particularly noticeable but sometimes it may be.

The front matter contains definitions of the word *memoir,* which is typeset using a bold font. The definitions thus commence like

> **memoir,** *n.* ...

instead of

memoir, *n*. . . .[7]

7. Historical note: these notes started out as a part of the manual for the memoir class, see Wilson 2009.

5.6 Narrow measures

Typesetting in a narrow column is difficult, especially if you are trying to make the text flush left and right. As the lines get shorter it becomes more and more difficult to fit the words in without an excessive amount of interword spacing or word breaking at the ends of lines. In the limit, of course, there will not be even enough room to put a syllable on a line.

The best recourse in situations like this is to forget justification and typeset raggedright. Raggedright looks far better than justified text with lots of holes in it. The question then is, to hyphenate or not to hyphenate?

With no hyphenation there is likely to be increased raggedness at the line ends when compared with permitting some hyphenation. Hyphenation can be used to reduce the raggedness but somehow short lines ending with a hyphen may look a bit odd. This is where you have to exercise your judgement and design skills.

Figure 5.6 shows a text set in a column 107.0pt wide with different raggednesses. Preventing hyphenation, as in the left column, resulted in very noticeably ragged text. Hyphenation has been allowed in the other two columns, to differing degrees. I prefer the one on the right but with different text and column widths the results might have been different.

Indexes are often typeset in double, or even triple or quadruple columns, as each entry is typically short. Also, indexes are

La composition en colonne étroite est difficile, surtout si vous essayez de justifier le texte à gauche et à droite. Au fur et à mesure que les lignes se raccourcissent, il devient de plus en plus difficile de faire rentrer les mots sans espacement excessif entre eux ou sans les couper trop souvent en fin de ligne. À la limite, bien sûr, il n'y aura même pas assez de place pour mettre une syllabe sur une ligne.

Le meilleur recours dans ce genre de situation est d'oublier la justification et de composer en drapeau. Le texte au fer à gauche (et en drapeau à droite) est bien plus esthétique qu'un texte justifié mais plein de trous. La question qui se pose alors est la suivante : faut-il ou non recourir à la césure ?

En l'absence de coupures de mots, les extrémités de ligne risquent d'être plus irrégulières qu'en présence d'une césure. La césure peut être utilisée pour réduire l'irrégularité, mais les lignes courtes se terminant par un trait d'union peuvent paraître un peu étranges. C'est là que vous devez exercer votre jugement et vos talents de maquettiste.

La figure 5.6 montre un texte placé dans une colonne de 107.0pt de large avec différents emplois de la césure. L'interdiction des coupures de mots, comme c'est le cas dans la colonne de gauche, donne un texte très nettement irrégulier. La césure a été autorisée dans les deux autres colonnes, à des degrés différents. Je préfère celle de droite, mais avec un texte et une largeur de colonne différents, les résultats auraient pu être différents.

Les index sont souvent composés en double, voire triple ou quadruple colonnes, car chaque entrée est généralement courte.

No hyphenation

The LaTeX document preparation system is a special version of Donald Knuth's TeX program. TeX is a sophisticated program designed to produce high-quality typesetting, especially for mathamatical works. It is extremely flexible albeit somewhat idiosynchratic. One can typeset justified, flushleft-raggedright, centered, or raggedleft-flushright.

Hyphenation (1)

The LaTeX document preparation system is a special version of Donald Knuth's TeX program. TeX is a sophisticated program designed to produce high-quality typesetting, especially for mathamatical works. It is extremely flexible albeit somewhat idiosynchratic. One can typeset justified, flushleft-raggedright, centered, or raggedleft-flushright.

Hyphenation (2)

The LaTeX document preparation system is a special version of Donald Knuth's TeX program. TeX is a sophisticated program designed to produce high-quality typesetting, especially for mathamatical works. It is extremely flexible albeit somewhat idiosynchratic. One can typeset justified, flushleft-raggedright, centered, or raggedleft-flushright.

FIGURE 5.6 – Raggedright text in narrow columns

typically consulted for a particular entry rather than being read as continuous text. To help the eye, page numbers are normally typeset immediately after the name of the indexed topic, so indexes tend to be naturally raggedright as a matter of reader convenience.

Talking of hyphenation, each language has its own rules for allowable hyphenation points. As you might now have come to suspect, English and American rules are different even though the language is nominally the same. Broadly speaking, American English hyphenation points are typically based on the sound of the word, so the acceptable locations are between syllables. In British English the hyphenation points tend to be related to the etymology of the word, so there may be different locations depending on whether the word came from the Greek or the Latin. If you are not sure how a particular word should be hyphenated, look it up in a dictionary that indicates the potential

De plus, les index sont généralement consultés pour une entrée particulière plutôt que d'être lus comme un texte continu. Pour aider l'œil, les numéros de page sont normalement tapés immédiatement après le nom du sujet indexé, de sorte que les index ont tendance à être naturellement à droite pour la commodité du lecteur.

En parlant de césure, chaque langue a ses propres règles concernant les points de césure autorisés. Comme vous vous en doutez, les règles anglaises et américaines sont différentes, même si la langue est théoriquement la même. En gros, les points de césure en anglais américain sont généralement basés sur le son du mot, et les emplacements acceptables se situent donc entre les syllabes. En anglais britannique, les points de césure ont tendance à être liés à l'étymologie du mot, de sorte que les emplacements peuvent varier selon que le mot vient du grec ou du latin. Si vous n'êtes pas sûr de la façon dont un mot particulier doit être ciselé, consultez un dictionnaire qui indique les points de rupture

break points.

possibles.

5.7 Emphasis

Underlining should emphatically not be used to emphasise something in a typeset document. This is a hangover from the days when manuscripts were typewritten and there was little that could be done. The other way of emphasising something was to put extra space between the characters of the w o r d being e m p h a s i s e d, as has been done twice in this sentence (for the words 'word' and 'emphasised' in case you didn't spot them). Letterspacing is usually confined to making fine adjustments to the physical spacing between letters in a book title in order to make them appear to be optically uniformly spaced. As an aside, for me at least, that extra spacing just now produces the illusion that the characters are slightly larger than normal, which is not the case.

Le soulignement ne devrait jamais être utilisé pour mettre l'accent sur quelque chose dans un document dactylographié. Il s'agit d'un héritage de l'époque où les manuscrits étaient tapés à la machine et où il n'y avait pas grand-chose de mieux à faire. L'autre façon d'accentuer un passage était de mettre un espace s u p p l é m e n t a i r e entre les caractères du m o t à accentuer, comme cela a été fait deux fois dans cette phrase (pour les mots « supplémentaire » et « mot » au cas où vous ne les auriez pas repérés). L'espacement des lettres se limite généralement à des ajustements fins de l'espacement physique entre les lettres d'un titre de livre afin de les faire apparaître comme étant optiquement uniformément espacées. Soit dit en passant, pour moi en tout cas, cet espacement supplémentaire donne l'illusion que les caractères sont légèrement plus grands que la normale, ce qui n'est pas le cas.

With the range of fonts and sizes available when typesetting there are other methods for emphasis, although German typographers have used letterspacing for emphasis with the fraktur and other similar font types.

Avec la gamme de polices et de tailles disponibles lors de la composition, il existe d'autres méthodes d'accentuation, bien que les typographes allemands aient utilisé l'espacement des lettres pour l'accentuation en fraktur et autres polices du même genre.

There are basically three aproaches: change the size of the font; change the **weight** of the font; or most usually, change the *shape* of the font. There is a creative tension when trying to emphasise something — there is the need to show the reader the emphasised element, but there is also the desire not to interrupt the general flow of the text. Out of the three basic options, changing the shape seems to be a reasonable compromise between the need and the desire.

Il existe essentiellement trois approches différentes : modifier la taille de la police, modifier la **graisse** de la police ou, le plus souvent, modifier la *forme* de la police. Il y a une tension créative lorsqu'on essaie de mettre en valeur quelque chose — il faut montrer au lecteur l'élément mis en valeur, mais il faut aussi ne pas interrompre le flux général du texte. Parmi les trois options de base, la modification de la forme semble être un compromis raisonnable entre le besoin et le désir.

5.8 Captions and legends

I am not entirely sure what is the difference between a caption and a legend as both terms refer to the title of an illustration or table. However, legend may also be used to refer to some explanatory material within an illustration, such as the explanation of the symbols used on a map.

In any event, captions and legends are usually typeset in a font that is smaller than the main text font, and which may also be different from the main font. For example, if the main font is roman and a sans font is used for chapter titles, then it could be appropriate to use a small size of the sans font for captions as well.

The caption for a table is normally placed above the table while captions for illustrations are placed below.

La légende est le titre d'une illustration ou d'un tableau, avec éventuellement des informations complémentaires. Toutefois, le terme « légende » peut également être utilisé pour désigner un élément d'explication *au sein* d'une illustration, comme l'explication des symboles utilisés sur une carte.

Quoi qu'il en soit, les légendes sont généralement composées dans une police de caractères plus petite que celle du texte principal, et qui peut également être différente de cette dernière. Par exemple, si la police principale possède des empattements et qu'une police sans empattements est utilisée pour les titres de chapitre, il peut être approprié d'utiliser une petite taille de la même police sans empattements pour les légendes.

La légende d'un tableau est normalement placée au-dessus du tableau, tandis que les légendes des illustrations sont placées en dessous.

5.9 Tables

A table is text or numbers arranged in columns, and nearly always with a 'legend' above each column describing the meaning of the entries in the column. The legends and the column entries are separated from each other, perhaps by some vertical space but more often by a horizontal line.

In general typographers dislike vertical lines in a table, which may be likely to be used to separate the columns. I'm not sure why this is. There is an obvious explanation when hand setting the individual characters as, although it would be easy to set horizontal rules, it would be very difficult to get all the pieces of type with the bits of the vertical rules aligned properly — the eye is very sensitive to jags in what is meant to be a straight line. In the days of digital typography the alignment problem has gone away, so perhaps the antipathy to vertical lines is a tra-

Un tableau est un ensemble de textes ou de chiffres disposés en colonnes, presque toujours accompagnés d'une « légende » au-dessus de chaque colonne, décrivant la signification des entrées de la colonne. Les légendes et les entrées des colonnes sont parfois séparées les unes des autres par un espace vertical, plus souvent par une ligne horizontale.

En général, les typographes n'aiment pas les lignes verticales dans les tableaux, parfois utilisées pour séparer les colonnes. Je ne suis pas sûr de la raison de cette aversion. Il y avait une explication évidente quand il s'agissait d'assembler à la main des caractères en plomb. En effet, bien qu'il soit facile d'ajouter des règles horizontales, il était très difficile d'aligner correctement toutes les caractères avec, au milieux d'eux, des morceaux de règles verticales — l'œil est très sensible aux irrégularités dans ce qui est censé être une ligne droite. À l'époque

dition from earlier days. On the other hand Edward Tufte (Tufte 1983, p. 96) exhorts us to 'Maximize the data-ink ratio' and to 'Erase non-data-ink' and Bringhurst (Bringhurst 1999, p. 70) says 'There should be a minimum amount of furniture (rules, boxes, dots and other guiderails for travelling through typographic space) and a maximum amount of information'.

de la typographie numérique, le problème de l'alignement a disparu, peut-être donc que l'antipathie pour les lignes verticales est une tradition d'autrefois. D'un autre côté, Edward Tufte (TUFTE 1983, p. 96) nous exhorte à « Maximiser le ratio données-encre » et à « Effacer l'encre non-donnée » et Bringhurst (BRINGHURST 1999, p. 70) dit « Il devrait y avoir une quantité minimale de décorations (règles, boîtes, points et autres guides pour être guidé dans l'espace typographique) et une quantité maximale d'information ».

If you want to use vertical lines, just be aware that not everybody may appreciate your effort.

Si vous souhaitez utiliser des lignes verticales, sachez que tout le monde n'appréciera peut-être pas votre effort.

5.10 Number formatting

Number formatting is country- and language-dependent. Continental Europe differs from England, and in its turn the United States differs from England.

Ignoring decimal numbers we have *cardinal* and *ordinal* numbers. An ordinal number, like 3rd, indicates a position in a sequence, while a cardinal number, like 3, expresses 'how many'. LaTeX typesets numbers as cardinals, and these can be displayed as a sequence of arabic digits or as upper- or lowercase Roman numerals.

In general text the tradition seems to be that cardinal numbers between one and ten are spelled out rather than being presented as numerals. In the United States numbers between one and ninety-nine are spelled (with twenty-one, twenty-two, etc., being hyphenated). Similar customs apply to ordinal numbers such as eighth, twenty-first. When not spelled out ordinals should be set like 378th rather than 378^{th}.

Regarding cardinal numbers represented as arabic digits, some cultures prefer these to be presented as an unbroken string of digits (e.g 12345). Other societies prefer the digits in longer numbers to separated, in some

cases by commas (e.g., 12,345) or other punctuation marks (e.g., 12.345), and in others by small spaces (e.g., 12 345); the digits are grouped into threes, counting from the right.

When the arabic digits became generally used they, like the letters, were given both uppercase and lowercase forms. The uppercase form, like these 1 2 3 4 5 6 7 8 9 0, which is the one normally supplied as part of a font are called *titling figures*, *ranging figures*, or *lining figures* because they range or align with the uppercase. Digits in this class all have the same width so they are used in tables were numbers are meant to be aligned vertically. They are also used when typesetting mathematics.

The lowercase form, like 1 2 3 4 5 6 7 8 9 0, are called *text figures*, *hanging figures*, *lowercase figures*, or *old-style figures*. These may be used whenever the surrounding text is set in mixed case, or small caps; I have seen them used typesetting the folios, but I must admit that they look very odd to me in that situation.

If you are typesetting mathematics, where you use lining figures, and are also using old-style figures in the text then be very careful; 'mathematical numbers' should always be set with lining figures even if they are in the body of the text. For example:
. . . from the equation the result is 42 . . .
. . . the men of the 42nd Foot performed magnificently . . . .

A

Some typefaces

Most books or articles about typography at least mention some typefaces by name, and may provide examples, and in some cases many examples.

I have the commercial FontSite fonts licensed from the SoftMaker/ATF library, supported for LaTeX through Christopher League's estimable work (League 2003). This enables me to show a few of the typefaces displayed in some of the books mentioned in the bibliography, in particular those by Birdsall (Birdsall 2004), Bringhurst (Bringhurst 1999) and and Lawson (Lawson 1990). To make it easier to see and compare them at first there are a few characters displayed at 18 pt and then text set at 12 pt. I have tried to indicate the typeface category of each face, principally using those from Table 1.1.

A.1 Baskerville

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Baskerville, the first of the Transitional (Neoclassical) faces, was designed by John Baskerville in the 1750's and was cut by John Handy. The face was more popular on the Continent than in England where it was made. (See (Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.2 Bell

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

The original Bell type was cut in London in 1788 by Richard Austin for a publisher named Bell. It is a Transitional (Rationalist) face. The FontSite version shown here is called Lanston-Bell. (See (Birdsall 2004; Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.3 Bembo

abcefghijopstuvwyz ff fi

fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Bembo, produced by Monotype in 1929, is based on a roman type cut by Francesco Griffo in Venice in 1495. It is in the (Aldine/French, Renaissance, Garald) style. The FontSite version shown here is called Bergamo. (See (Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.4 Bodoni

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Giambattista Bodoni lived in Parma and designed hundreds of faces between 1765 and his death in 1813. Types in his style, now categorized as (Modern, Romantic, Didone), were revived in the first part of the twentieth century. (See (Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.5 Californian

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Frederic Goudy cut his University of California Old Style in 1938. Since then there have been many faces more or less faithfully based on his design. The general category of these is (Venetian, Renaissance, Humanist). The FontSite version shown here is called University Old Style. (See (Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.6 Caslon

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ
abcefghijopstuvwyz Q ff fi fl ffi ffl &

William Caslon cut many faces between 1720 and his death in 1766. The first printing of the American Constitution used one of his types. It falls into the (Dutch/English, Baroque, Garald) category. (See (Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.7 Centaur

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ
abcefghijopstuvwyz Q ff fi fl ffi ffl &

Centaur was designed by Bruce Rogers in 1912–14 based on Nicolas Jenson's roman type that he cut in Venice in 1465. It is perhaps the most faithfull rendition of Jenson's typeface, and is thus catego-

rized as (Venetian, Renaissance, Humanist). The FontSite version shown here is called Jenson Recut. (See (Bringhurst 1999; Lawson 1990; Rogers 1949))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.8 Century

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Century (Old Style) was created by Theodore De Vinne and Linn Boyd Benton of the ATF as a magazine type, named after De Vinne's *Century* magazine. It is essentially a Transitional face. (See (Birdsall 2004; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.9 Clarendon

abcefghijopstuvwyz

ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Clarendon is a Victorian face, one of many deriving from a font cut by Benjamin Fox for the Fann Street Foundry, London, in 1845. It is categorized as (Square Serif, Realist, Mechanistic). (See (Birdsall 2004; Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.10 Della Robbia

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Della Robbia was designed in 1902 by Thomas Maitland Cleland for the New York Type Foundry. It is based on 15th century Florentine inscriptional capitals. It can be classed as a (Venetian, Renaissance, Humanist) face. (See (Consuegra 2004))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.11 Garamond

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Claude Garamond (or Garamont) was one of several great type cutters working Paris in the early sixteenth century. His style was revived in the 1920's. Modern Garamonds are categorized as (Aldine/French, Renaissance or Baroque, Garald). (See (Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.12 Joanna

abcefghijopstuvwyz ff

fi fl ffi ffl & 1236 AVOQ
abcefghijopstuvwyz Q ff fi fl ffi ffl &

Joanna was designed by Eric Gill and was first cut in 1930. The FontSite version shown here is called Jessica. (See (Birdsall 2004; Bringhurst 1999))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.13 Sabon

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Sabon was designed by Jan Tschichold and issued in 1964 and can be categorized as (Aldine/French, Renaissance, Garald). The FontSite version shown here is called Savoy. (See (Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In

taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.14 Walbaum

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Walbaum types were originally cut by Justus Erich Walbaum about 1830. He was, together with Bodoni and Firmin Didot, one of the great type designers of the period. The face is categorized as (Modern, Romantic, Didone). (See (Birdsall 2004; Bringhurst 1999))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.15 Futura

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl*

&

Futura was designed by Paul Renner in 1924–26. It has been categorized as (Sans-serif, Geometric Modernist, Geometric Lineal). The FontSite version shown here is called Function. (See (Birdsall 2004; Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.16 Gill Sans

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Gill Sans was designed by Eric Gill in 1927. It can be classified as (Sans-serif, Geometric Modernist with Humanist hints, Lineal Humanist). The FontSite version shown here is called Chantilly. (See (Birdsall 2004; Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucun-

dum juventutem, Post molestam senectutem, Nos habebit humus.

A.17 Goudy Sans

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Goudy Sans was designed by Frederic Goudy in 1929–30. It is a Sans-serif. (See (Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.18 Lydian

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Lydian is a calligraphic Sans-serif face and was designed by Warren Chappell in the 1930's for ATF. (See (Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc

cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.19 News Gothic

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

News Gothic is a Sans-serif face designed by Morris Benton for ATF. (See (Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.20 Optima

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ *abcefghijopstuvwyz Q ff fi fl ffi ffl &*

Optima is a face designed by Hermann Zapf in 1952–55. It has been classified as (Sans-serif, Renaissance cum Neoclassical, Humanist Lineal). The FontSite version shown here is called Opus. (See (Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.21 Syntax

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ
abcefghijopstuvwyz Q ff fi fl ffi ffl &

Syntax, designed by Hans Eduard Meier and issued in 1969 is a Neo-humanist Sans-serif. The FontSite version shown here is called Struktur. (See (Bringhurst 1999))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.22 Legende

abcefghijopstuvwyz ff fi fl ffi

ffl & 1236 AVOQ ABCE-
&GHIJOPSTUWYZ

Legende is a Script face designed by Ernst Schneider in 1937. It could be categorised as having a Baroque feel to it. (See (Bringhurst 1999; Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' Gaudeamus igitur, Juvenes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.23 Goudy Handtooled

abcefghijopstuvwyz ff fi fl ffi ffl & 1236 AVOQ AB-
CEFGHIJOPSTUVWYZ

ABCEFGHIJOPS-
TUVWYZ 1236 AVOQ
&

Goudy Handtooled was designed by Frederic Goudy in 1922 as a Decorative type. (See (Lawson 1990))

Puella Rigensis ridebat Quam tigris in tergo vehebat; Externa profecta, Interna revecta, Risusque cum tigre manebat. ¶ Meum est propositum, In taberna mori, Ut sint vina proxima, Morientis ori. Tunc cantabunt laetius Angelorum chori; 'Sit Deus propitius Huic potatori!' ¶ Gaudeamus igitur, Ju-

venes dum sumus Post jucundum juventutem, Post molestam senectutem, Nos habebit humus.

A.24 Decorative

Just for fun, here is a selection of some Decorative faces. Unlike Goudy Handtooled the ones shown only come in uppercase. Also, Table A.1 shows the glyphs available in the Web-O-Mints font which may be used to create borders and other decorative elements. Web-O-Mints is one of two free decorative fonts made available by the Galapagos Design Group. [1]

ALGERIAN: ABCEFGHIJOPSTUVWYZ 1236 AVOQ &

DRESDEN: ABCEFGHIJOPSTUVWYZ 1236 AVOQ &

ERBAR DECO: ABCEFGHIJOPSTUVWYZ 1236 AVOQ &

GALLIA: ABCEFGHIJOPSTUVWYZ 1236 AVOQ &

1. http://www.galapagosdesign.com

Table A.1 – Glyphs in the Web-O-Mints font

32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	 47
 48	 49	 50	51	 52	 53	 54	 55
 56	 57	58	59	60	61	62	63
64	 65	 66	 67	 68	 69	 70	 71
 72	 73	 74	 75	 76	 77	 78	 79
 80	 81	 82	 83	 84	 85	 86	 87
 88	 89	 90	 91	92	 93	94	95
96	 97	98	99	100	101	102	103
104	105	106	107	108	109	110	111
112	113	114	115	116	117	118	119
120	121	122	123	124	125	126	127

Chapter 1 Historical background

[modern LaTeX distribution] (page 7) An example of a modern distribution is TeXlive 2008. There are many more fonts that could be used but I wanted LaTeXers to be able to run the manual's source through LaTeX themselves without having to install any extra fonts. *The LaTeX Font Catalogue* (http://www.tug.dk/FontCatalogue) has examples of 181 different fonts and these do not include many of the more specialized ones, such as for setting chess or for archaic languages (e.g., cuneiform, egpytian hieroglyphs, etc.), or scripts for Asian languages.

[distribution moderne de LaTeX] (page 7) Un exemple de distribution moderne est TeXlive 2008. Il y a beaucoup d'autres polices qui pourraient être utilisées, mais je voulais que les utilisateurs de LaTeX puissent compiler eux-mêmes les sources du manuel sans avoir à installer de polices supplémentaires. Le *The LaTeX Font Catalogue* (http://www.tug.dk/FontCatalogue) contient des exemples de 181 polices différentes et celles-ci n'incluent pas la plupart des polices plus spécialisées, comme celles pour le jeu d'échecs ou pour les langues archaïques (par exemple, cunéiforme, hiéroglyphes égyptiens, etc.), ou les scripts pour les langues asiatiques.

[illustrated in Figure 1.1] (page 7) The LaTeX fontfamily names for the typefaces used in the illustration are:

Notes

Antiqua Turin	`antt`	Avant Garde	`pag`
Bera Serif	`fve`	Bookman	`pbk`
GFS Bodoni	`bodoni`	GFS Didot	`udidot`
Times Roman	`ptm`	Utopia	`put`

[illustrés sur la Figure 1.1] (page 7) Les noms de famille de polices LaTeX pour les caractères utilisés dans l'illustration sont:

Antiqua Turin	`antt`	Avant Garde	`pag`
Bera Serif	`fve`	Bookman	`pbk`
GFS Bodoni	`bodoni`	GFS Didot	`udidot`
Times Roman	`ptm`	Utopia	`put`

[more or less adhering to the original design] (page 8) The final printed character depends not only on the geometric shape but also on the printing technology used, the ink, and the paper. With letterpress printing where the inked metal type is impressed into the paper, the ink tends to spread just a little bit; all other things being equal the spread depends on the type and amount of ink, the hardness of the paper, the surface finish of the paper, the amount of pressure applied, in some cases the dampness of the paper, and so on. To get a similar looking result using offset lithography where the ink stays where it is put, the geometric shape must be changed to simulate the ink spread of the letterpress process, but then the question arises as to which of the many letterpress impressions is the one to be simulated? Different designers and different manufacturers have different ideas about this.

[plus ou moins conformes au dessin original] (page 9) Le caractère imprimé final dépend non seulement de la forme géométrique mais aussi de la technologie d'impression utilisée, de l'encre et du papier. Dans le cas de l'impression typographique, où les caractères métalliques encrés sont imprimés sur le papier, l'encre a tendance à s'étaler un peu; toutes choses égales par ailleurs, l'étalement dépend du type et de

la quantité d'encre, de la dureté du papier, de la finition de la surface du papier, de la pression appliquée, dans certains cas de l'humidité du papier, etc. Pour obtenir un résultat similaire en utilisant la lithographie offset où l'encre reste là où elle est mise, la forme géométrique doit être modifiée pour simuler l'étalement de l'encre du processus de typographie, mais la question se pose alors de savoir laquelle des nombreuses impressions typographiques est celle à simuler? Différents concepteurs et différents fabricants ont des idées différentes à ce sujet.

[An example of a *Fraktur*] (page 9) The typeface was originally created by Yannis Haralambous and is accessed in LaTeX as the `yfrak` fontfamily.

[Un exemple de *Fraktur*] (page 9) Ce caractère a été créé à l'origine par Yannis Haralambous et est accessible avec LaTeX sous le nom `yfrak`

[An example of Palatino] (page 11) In LaTeX the Palatino font is accessed as the `ppl` fontfamily.

[Un exemple de Palatino] (page 11) En LaTeX, le Palatino est nommé `ppl`.

[and URW Antiqua] (page 13) The URW Antiqua font in LaTeX is known as the `uaq` fontfamily.

[et URW Antiqua] (page 13) La fonte URW Antiqua est connue sous le nom `uaq` sous LaTeX.

[version of one of the Century series] (page 14) In LaTeX the New Century Schoolbook font is known as the `pnc` fontfamily.

[verison d'un des caractères de la série Century] (page 14) Sous LaTeX, la fonte New Century Schoolbook est connue sous le nom `pnc`.

[GFS Didot] (page 14) The LaTeX fontfamily for GFS Didot is `udidot`.

[An example of Square Serif] (page 15) The Bera Serif's fontfamily name in LaTeX is `fve`.

[Yet another sans] (page 15) `fvs` is the LaTeX fontfamily name name for the Bera Sans font.

[unimaginatively] (page 16) The Brush Script font is accessible as the `pbsi` fontfamily.

[a calligraphic script] (page 16) Zapf Chancery is called the `pzc` fontfamily in LaTeX.

[shown in Figure 1.11] (page 16) The Cyklop typeface has been given the `cyklop` fontfamily name for access with LaTeX.

Chapter 4 Styling the elements

[First off] (page 118) Practically, though, the very first thing is to select a typeface that you already have or that you can *legally* obtain.

Appendix A Some typefaces

[commercial FontSite fonts] (page 138) In 2002 I purchased a CD containing 512 fonts from `http://www.fontsite.com` but it appears that it is not in production any more. I understand that as of 2009/08/12 there were only 39 copies still available.

If you wish to LaTeX the source of this document yourself and do not have these fonts then you will get many error reports about missing fonts. To avoid this use the `draft` class option. The document should then process (without too many missing font errors), using the regular body typeface instead of any FontSite font.

If you do have the fonts you may find that some glyphs are replaced by others, in particular the '¶'.

[text set at 12 pt] (page 138) The Latin texts, when suitably laid out, and their translations are as follows.

Puella Rigensis ridebat
Quam tigris in tergo vehebat;
Externa profecta,
Interna revecta,
Risusque cum tigre manebat.
There was a young lady of Riga
Who went for a ride on a tiger;
They returned from the ride
With the lady inside,
And a smile on the face of the tiger.

Meum est propositum,
In taberna mori,
Ut sint vina proxima,
Morientis ori.
Tunc cantabunt laetius
Angelorum chori;
'Sit Deus propitius
Huic potatori!'
The Arch Poet (fl. 1159–67)
I desire to end my days in a tavern drinking,
May some Christain hold the glass for me when I am shrinking;
That the Cherubim may cry, when they see me sinking,
'God be merciful to a soul of this gentleman's way of thinking.'
Translation by Leight Hunt

Gaudeamus igitur,
Juvenes dum sumus
Post jucundum juventutem,
Post molestam senectutem,
Nos habebit humus.
Students' song, 1267
Let us then rejoice,
While we are young.
After the pleasures of youth
And the burdens of old age
Earth will hold us.

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CTAN is the Comprehensive TeX Archive Network. Information on how to access CTAN is available at http://www.tug.org.

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Colophon

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