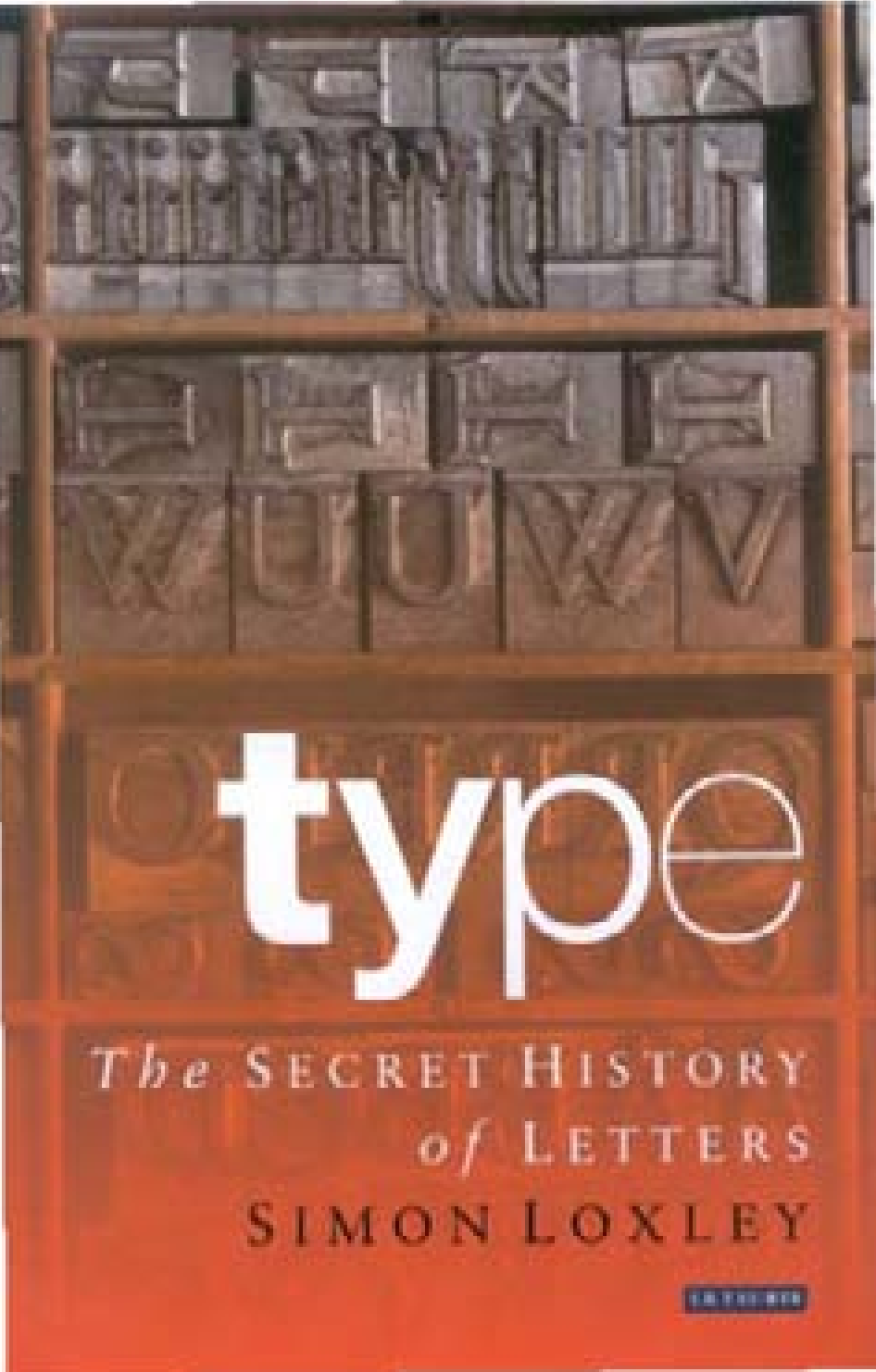


type

The SECRET HISTORY *of* LETTERS

SIMON LOXLEY

type

The Secret History *of* Letters

Simon Loxley

I.B. TAURIS
LONDON · NEW YORK

NOTE BY WILLIAM MORRIS ON HIS AIMS IN FOUNDING THE KELMSCOTT PRESS

I BEGAN printing books with the hope of producing some which would have a definite claim to beauty, while at the same time they should be easy to read and should not dazzle the eye, or trouble the intellect of the reader by eccentricity of form in the letters. I have always been a great admirer of the calligraphy of the Middle Ages, & of the earlier printing which took its place. As to the fifteenth-century books, I had noticed that they were always beautiful by force of the mere typography, even without the added ornament, with which many of them are so lavishly supplied. And it was the essence of my undertaking to produce books which it would be a pleasure to look upon as pieces of printing and arrangement of type. Looking at my adventure from this point of view then, I found I had to consider chiefly the following things: the paper, the form of the type, the relative spacing of the letters, the words, and the

Simon Loxley

Type: the secret history of letters

I.B. TAURIS
LONDON · NEW YORK

Published in 2004 by I.B.Tauris & Co. Ltd
6 Salem Road, London W2 4BU
175 Fifth Avenue, New York NY 10010
www.ibtauris.com

In the United States of America and in Canada
distributed by Palgrave Macmillan, a division of St
Martin's Press, 175 Fifth Avenue, New York NY 10010

Copyright © Simon Loxley 2004

All rights reserved. The right of Simon Loxley to be
identified as author of this work has been asserted by
the author in accordance with the Copyright, Designs
and Patents Act of 1988. Except for brief quotations
in a review, this book, or any part thereof, may not
be reproduced in any form without permission in
writing from the publisher.

ISBN 1 85043 397 6 hb

A full CIP record for this book is available from
the British Library
A full CIP record for this book is available
from the Library of Congress
Library of Congress catalog card: available

Printed and bound in Great Britain by
MPG Books, Bodmin
Set in Monotype Bembo and
Futura Bold

Contents

Sine qua non | vi
The naked letter: the anatomy of type | viii

Introduction | 1

1 The adventure and the art: the obscure origins of a revolution | 7
2 Dynasty: in which William Caslon makes Britain the type centre of the world | 28
3 Garamuddle: when is a sixteenth-century typeface not a sixteenth-century typeface? | 40
4 The maverick tendency: the type and strange afterlife of John Baskerville | 43

Detour | Meltdown: a stroll around a fallen giant | 55

5 'Hideous Italians' : thicks, thins, and the rise of advertising type | 62
6 American spring: creating the modern age | 68
7 An awful beauty: the private press movement | 79
8 Under fire: Frederic Goudy, type star | 93

Detour | Typecast: on the trail of the metal fanatics | 103

9 Going Underground: Edward Johnston's letters for London | 109
10 The doves and the serpent: Stanley Morison and the Wardes | 123
11 Dangerous passions: radical European typography in the inter-war years | 136
12 Leper messiah: Gill semi-light, Gill heavy | 157
13 Europe after the rain: rebirth and twilight | 168

Detour | Portable serenity: the precision and the passion of the letter cutter | 175

14 Two ghosts: forgotten technologies from the dustbin of history | 183
15 Motorway madness: David Kindersley and the great road sign ruckus | 190
16 A company man: Herb Lubalin and the International Typeface Corporation | 201
17 The twenty-six soldiers: fiddling with the format | 208
18 New gods: Neville Brody and the designer decade | 216
19 Revolution again: liberating the letter | 228

Detour | Inside the micro-foundry: twenty-first-century type | 233

20 Typocalypse | 236

Illustration credits | 241 Bibliography | 242
General index | 244 Typeface index | 247

Sine qua non

The Beach Boys once wrote a song called 'You Need A Mess Of Help To Stand Alone', and the truth of that title was borne home to me nearly every day while writing this book, an impossible task without the help, time and advice of lots of people. My apologies if I've missed anyone. For specific chapters:

1: The Statsbibliotheek Haarlem, Marijke van Hoorn at the Teylers Museum, Gerard van Thienen, Lotte Hellinga, Bob Taylor; 3: Justin Howes; 4: Sinéad Byrne at Birmingham Museums and Art Gallery; Detour: Duncan Avery and Richard Cooper at the Type Museum, Theo Rehak (<www. daleguild.com>); 6: Patricia Cost, Theo Rehak, Sharon Moncur at AtypI, Thomas Phinney at Adobe, Dennis Bryans; 7: Sophie Wilson, at the Cheltenham Art Gallery and Museum; Detour: David Bolton, at the Alembic Press (<alembicprs@aol.com>); 9: Shirley Thompson and Rachel Bairsto at the Ditchling Museum; 10: Shelley Gruendler, Warren Platt at the New York Public Library; 11: Ruari McLean; 12: Shirley Thompson and Rachel Bairsto at the Ditchling Museum, Lida Lopes Cardozo; 13: Peter Lofting at Apple, Bruno Steinert at Linotype, Hermann Zapf; Detour: Lida Lopes Cardozo, Sarah Charlesworth and Graham Beck at the Cardozo Kindersley Workshop; 15: Stephen Walford and the Transport Research Laboratory, Giles Chapman, Lida Lopes Cardozo, Sarah Charlesworth and Graham Beck at the Cardozo Kindersley Workshop; 17: Wim Crouwel, Sue Nottingham, Margaret Mayo, Anne Irving; 18: Julian Balme; Detour: Christian Küsters (<www. acmefonts.net>), Dirk Wachowiak, Robert Green; 20: Joe Graham at Fontworks.

Thanks also to Mick Walsh for sowing the seed of the original idea, and to Christine Lalla for taking pictures including the author photo.

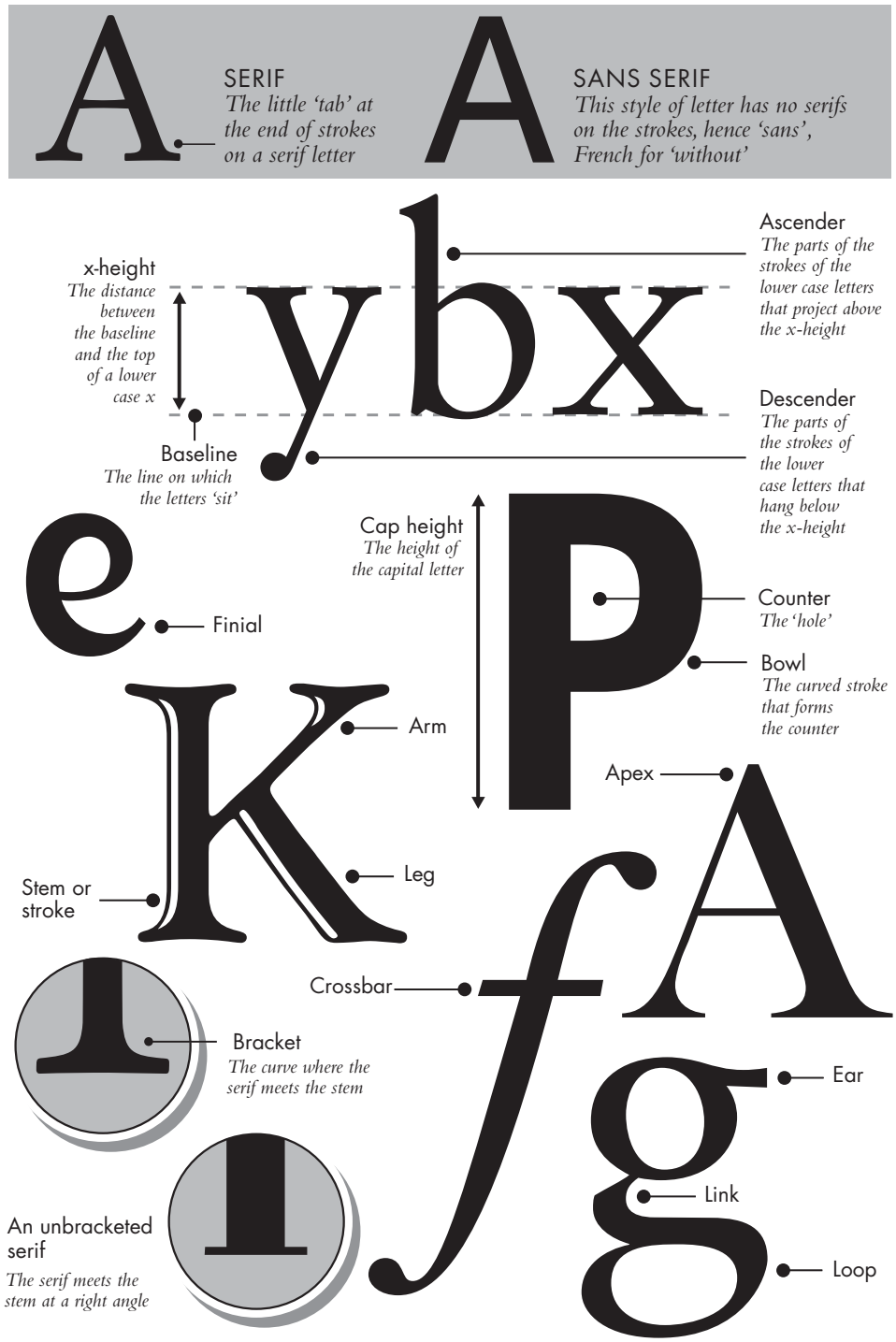
Especial thanks for all their help to Nigel Roche and his team at St Bride Printing Library, in particular Denise Roughan and Lyn Arlotte; the library and its staff are truly one of London's hidden treasures.

And finally thanks to John Miles; in the corner of rural England that we both inhabit, where to buy a pint of milk or a newspaper requires a car journey, to find such a

fund of typographical experience, recollections, advice and opinions within walking distance made me feel that the fates were surely smiling on my enterprise. I hope you'll think so too.

This book is dedicated to Sarah, who will always be my type.

The naked letter: *the anatomy of type*



Introduction

The New York City sky glowed red as the column of smoke rose into the darkened heavens; by the morning there would be a piece missing from the familiar skyline of buildings. It was the night of 10 January 1908. On the street, one man stood immobile among the onlookers, watching his livelihood going up in flames. Frederic Goudy and his wife Bertha had only recently moved their printing business to the city. The workload had been growing steadily, and the couple had taken their first night off in weeks. A frantic phone call disturbed their repose; the Parker Building in midtown Manhattan, home of the Goudys' Village Press, was on fire. As Goudy watched helplessly, amid the roar of the inferno and the cries of the firefighters could be heard the intermittent crashes of the two printing presses, falling stage by stage from the sixth floor through the collapsing internal structure of the building. The business was uninsured; apart from a few copies of the book they were currently printing, all that was saved were some of Goudy's Village Type matrices, stored in a safe in the superintendent's office. Staring at the torrents of water streaming down the gutter, Goudy felt as if his whole life was disappearing with it.

Yet within ten years he was to be an internationally renowned designer, the first American type star. Typeface design, not printing, was the art that would make his name, and his fame and success were to become such that leading lights in the world of type would soon start wishing that Goudy himself had been among the company assets lost on that New York winter night.

Today, Frederic Goudy's lettering, in Britain at least, is linked more to water than fire – water, that is, brewed with some hops and malt. Frequently the lettering used to spell out the names of public houses, it was chosen for its rare combination of qualities – tradition and warmth – and proliferated through corporate makeovers and takeovers. But few passing beneath the signs, their minds focused on that first drink of the evening, would be aware of the dramas in the life of the man who

1 Make mine a pint … the work of Frederic Goudy, greeting customers at a bar near you.

originally drew the letters, for Goudy's career, tirelessly self-promoted in a profession well stocked with shrinking violets, was laid low by fire not once, but twice.

And why should they be aware? What is intrinsically interesting about a typeface? Why do we need so many different styles? Times, Century, Garamond, Arial, New York, Geneva, News Gothic, Univers, Franklin, Old English, Goudy … and the list keeps getting longer every year. Who cares what the style is? What the words are saying is what's important, surely, so couldn't we get along quite happily with just, say, Helvetica? It's clear, highly readable, does the job, delivers the message. One of typography's most lucid and influential commentators, the American émigrée Beatrice Warde, even confessed to being uninterested in type as such: 'Typography must be clear and good in order to communicate – but that's as far as it goes … To me it is not so important *how* the idea is communicated, provided it successfully gets across from one mind to another.'[1] The message was the thing; the delivery, as Beatrice saw it, of *truth*. But one person's urgent truth is another's irritating piece of trivia. How do you persuade someone to read your version? One answer is the typeface.

Who cares about type? Although initially they may take some convincing, any organization with an eye to a profit. The high-profile company experiencing a slump in sales and attempting to revamp its image, or reposition itself in the marketplace, overlooks typography at its peril.

British high street giant Marks & Spencer was thrown into comparative crisis at the end of the twentieth century by drab interior styling, a refusal to countenance elec-

1 John Dreyfus, 'Beatrice Warde, the First Lady of Typography', *The Penrose Annual*, vol. 63, New York, 1970.

tronic customer payments, and the fact that every other clothing retailer was now selling underwear – always the company's core business. It has attempted to remedy the situation by giving its stores a fresher, more contemporary feel, through choice of colour and materials, and of course different typography – a not-quite-serif, not-exactly-sans-serif face that looks contemporary yet won't make older customers shy away. Oh, and you can pay with a credit card too.

It seems to be working. As it has for Burberry, famous for its black, red and beige check fabric, raincoats, umbrellas and scarves, and for being the choice of rich American and Japanese visitors, and middle-aged Mayfair. When the company decided to go for a younger, trendier clientele, it not only ran ad campaigns featuring youthful, sulky models in startling juxtapositions, but also redesigned the lettering of the company logo, going for an elegant, modern serif – classic, yet of today too, exactly the way Burberry now wishes to be perceived.

2 Marks & Spencer's type makeover: a vital part of the rescue operation.

Because there is fashion in typefaces, just as there is in clothes. What is a type style but a suit of clothes for the letters of the alphabet? You can send your words out into the world looking as though they are in touch with modern trends, or stuck in a 1980s timewarp of big-haired power dressing; wearing an old tweed jacket with leather patches on the elbows, or as a total fashion victim.

As far back as 1936, John Allen Murphy, writing in the American printing trade journal *The Inland Printer*, was trying to analyse the demand for new faces:

> There is no question but that type is subject to the same law of change that influences design in innumerable other fields. What the true motivating power behind this law is, no one knows. Probably the factor of change is due to a certain restlessness in people. They become bored with what they are accustomed to seeing, and vaguely crave something different. The public rarely *says* what it wants. In fact, it does not know. The manufacturer must sense this strange unexpressed desire of the people for a change, and design merchandise that he believes fashion will accept.
>
> The same sort of thing is going on in the type world. As in merchandise, the pendulum of favour swings away from certain types. New favourites come in …

Murphy was writing of the need for type manufacturers to gauge changing trends and unspoken desires. Today, the style changes are more likely to be wrought by art directors in influential positions, or by a type designer striking it lucky with a face that gets a wide take-up. But the trends are still there. The turn-around is simply faster than in Murphy's day. As Joe Graham of type company Fontworks says: 'We've seen quite a few vogues for different styles over the last few years – grunge faces, then stencils were popular for a while, and ultra lights. There also seems to be an interest at the moment in rounded faces, like rounded versions of Helvetica. The Tate Gallery, for example, has gone for a rounded face in its logo and type style.'[2]

In the 1980s, the so-called designer decade, the concept of 'style', as reflected in the clothes you wore, the interior of your home or the restaurant or wine bar you frequented was usually supported on the printed page, on labelling or on the street-front fascia by lettering composed of a serif typeface, narrow characters with a strong contrast between the thick and thin strokes.

To the world at large this said 'contemporary style', and looked the height of sophistication. Today there's a different typographical approach, but the same basic message: 'This is for someone who is in touch with what's happening NOW, who has sophisticated tastes that are untrammelled by a nostalgia for what's gone before.'

All that has changed is the style of typeface. The sans serif now holds sway, either one of the timeless designs of the 1920s or 1950s, or one of the myriad created in the last ten years. And the style of presentation has changed too; where in the 1980s the size of the lettering that carried the main information – the headline or the copy line – would have been large, now it is small. Previously, the lettering would probably have been condensed, squeezed to make it narrower, and the individual letters closely set. Now the letters may well be more widely spaced, and if there is any stress on their shapes, they are more likely to be expanded, stretched to make them broader.

Who cares about type? Well, you do. Since the advent of the personal computer, everyone can be their own typographer in a way that was impossible before – typesetting, once an expensive, closed-shop service, the

2 Grunge fonts use battered, distressed, distorted and informal letters – style is more important here than crystal clarity. Ultra lights have strokes with the uniform thickness of a thin line.

3 Late 1980s typographic chic, serifed, condensed, typified by the masthead of now defunct style magazine *Blitz*.

guarded preserve of trained professionals, has become available to anyone with space on their work surface for a computer.

And you have a choice of which font you want to set your work in.[3] Do you have a favourite? Do you use different ones for different purposes? A museum fund-raiser confided to me that she always uses Times Roman for letters in which she is seeking donations. She felt the typeface suggested visual and financial impoverishment, with no available resources to spend on a more considered design approach. No doubt the designer of Times, the venerable Stanley Morison, would have been spinning in his grave at this assessment.

Who cares about type? Sometimes a whole nation: type style was a debate that raged in Germany throughout much of the nineteenth century, reaching a peak with the rise to power of Adolf Hitler in the 1930s. Indeed, a case could be made for a nation expressing its national

3 When referring to pre-digital type technology, I have used the traditional English spelling, 'fount', and thereafter the now completely dominant American form, 'font'. Originally a 'fount' referred to a complete set of characters in one design, and in just one size, but is used here in the modern wider sense synonymous with 'typeface' – a single alphabet design irrespective of size.

character through typography. The Swiss? Clean lines, controlled, well ordered. The French? Stylish, quirky, inhabiting their own very individualistic universe. The Americans, while boasting highly creative individuals, managed to make type big business as well. And Britain? What else but the home of the eccentric typophile, the oddball and the loner?

Who cares about type? The characters who populate the stories that follow. In the process they kick-started the two great technological and social revolutions that have shaped Western society in the last six hundred years. But revolution, although it was sometimes the fruit of their obsession, was rarely their objective. Many found their passion while aiming for something else entirely. Type was something they stumbled across while trying to reach some other goal. The phenomenon of the trained designer as typographer is a relatively recent one; in the past the type designer often began by following an entirely different calling. Theirs was no creative ivory tower. They brought to their designs all the inescapable human baggage of ambition, jealousy, desire, treachery and love. And it is this baggage, informing and sometimes twisting the course of their endeavours, which makes their stories as fascinating as the letter shapes they brought into being.

1 | The adventure and the art: the obscure origins of a revolution

'Have you ever seen a scribe at work?' I asked. Indeed they had, and sighed, ready to be disappointed.

'And have you any notion of how long it takes a scribe to write ten pages? Two hours? Ten?'

'Something in between, perhaps.'

'What would you say if I told you I can make one hundred pages in an hour?'

'I would not believe you,' laughed von Seckingen.

'I would think you had supped too much from your own cellar,' scoffed Smalriem.

'We have heard you are quick-fingered, Johann, but no hand could write that fast,' they mocked together.

'Yes, yes, but suppose,' I went on, 'the hand were that of a machine. You have seen a wine-press? Well, imagine a wine-press being used to make words. Imagine a line of metal squeezing out letters on paper. Imagine the method that stamped this mirror' – here I brandished one of the mirrors made for the Aachen pilgrimage – 'being used to stamp books.' (Blake Morrison, *The Justification of Johann Gutenberg*, 2000)

The story of type begins in the mid-fifteenth century. Many of the people and designs that we will meet in the following pages drew inspiration or used letter forms from earlier sources. The capital letters carved on the Trajan Column in Rome in AD 114, or the lower case letters, the Carolingian minuscules, developed in the reign of the Emperor Charlemagne at the start of the ninth century, are the two salient examples. They belong to the world of lettering and calligraphy, but are not in themselves, by definition, also type – lettering for mass production. When people refer to the birth of printing in Europe, what they actually mean is the birth of type. Movable type – individual letters that could be arranged, edited, printed from, then dismantled and reassembled to print again in a new configuration – this was the real breakthrough, the spark that fired the printing revolution that was to sweep through Europe during the rest of the

century, its output greedily consumed by an information-hungry population.

Printing itself had existed in China since at least the start of the second millennium, possibly as early as the middle of the first. But the sheets were probably rubbed down on a reversed image in a single unit, made from hand-carved wooden blocks. Movable type is known to have been used in China, and later in Korea, made of porcelain, wood or cast in bronze; all this before its European introduction. But its development and widespread use were conceivably too daunting and impractical for Far Eastern languages, with their thousands of ideograms. The mere twenty-six characters of the Latin alphabet presented a far more manageable proposition.

4 Gutenberg's breakthrough – a piece of movable type (actual length 23 mm). The little nick on the side allowed the compositor to tell, by touch alone, which side was up. The reversed image of a capital B forms the upper surface.

But what exactly did *movable* type mean? Today we are used to arranging, manipulating and printing from letters on a computer screen. But until the 1950s 'type' meant each letter having a physical existence as an individual piece of metal, comprising of the face – a reversed image of the letter, which was the surface that would receive the ink and form an impression on the paper – and the shank, a rectangular body of metal, of varying width according to the letter it was carrying, but of a uniform length, usually just slightly longer than the width of a thumb, for maximum ease in picking it up and minimum wastage of materials. The shank had to be exactly the same length as all its counterparts, so that the printing surface of the letters was at an even height – the height-to-paper – when the type was placed on the bed of the printing press.

The type was created by first cutting a punch. This was sculpted out of steel, with the letter reversed. The punch was then struck with a mallet to form an impression in a softer metal, copper, crucially always to the same depth. This piece of copper became the matrix, a mould for the letter. When the matrix was fitted into a type mould and filled with molten metal – a mixture of lead, tin and antimony – a piece of type, a relief reversed-image character, shank and all – was produced, and could be replicated in whatever quantities were required.

Until the invention of typesetting machines in the late nineteenth century, the individual pieces of type were picked by hand out of a tray and placed, in the

required order, in a hand-held composing stick. This was a right-angled holder in which the type could be held until transferred to a work surface and locked up tight in a chase, a metal frame. It could then be moved to the bed of the printing press.

Regardless of any possible knowledge of artefacts from the Far East, it would be an insult to the intelligence of our medieval ancestors to imagine that the concept of simple printing hadn't occurred to more than one mind; a hand or fingerprint, the mark of a dog's muddy paw, would be sufficient to sow the seeds of the idea. But what to do with it? Two vital factors needed to be in place for the printing revolution to succeed, and by the middle of the fifteenth century they were.

There are European examples of printed items which at least *bear* dates earlier than that of the generally accepted arrival of movable type, although exactly what method was used to create them is still open to speculation.[1] But up to this point such books as existed were handwritten. Initially this work had been done by monks. As long as the demand was restricted to monastic libraries or private collections, this didn't represent a problem. If you could read them and afford them, a dozen books could constitute a library.

In the late 1980s the course of my work as a freelance designer took me into many different offices. I started noticing over and again the same cartoon taped to the walls of design departments. In some instances it looked like a fourth-generation photocopy, as though the thing had been passed around London like a chain letter. The cartoon showed two monks, one standing, the second seated at a table in front of him, halfway through creating a magnificent illuminated manuscript. The seated monk had turned around, a look of intense annoyance on his face, and the caption read: 'Deadline? No one told me about any ****ing deadline.'

Of course, beyond the comic shock of the blaspheming monk, the reason for the cartoon's popularity among hard-pressed art directors is obvious. But maybe the cartoonist was closer to the truth than he imagined. The number of universities in western Europe in the fifteenth century was increasing; education was spreading. The English king Henry VI, a saintly nonentity who ended

1 Block books, printed by xylography – from complete wooden blocks rather than movable type – were usually just single sheets, with an illustration as a religious aid for the illiterate, or brief textual works, such as Aelius Donatus' Latin grammar, which was short enough to be economically printed in this way. Although the majority of surviving examples were previously considered to pre-date movable type, current thought tends to regard them as running concurrently, from no earlier than the 1460s. There are existing woodblock prints dated 1418 and 1423, although the former may be a later copy of an original version.

as a pawn in a civil war that cost him his throne and his life, nevertheless left lasting monuments as the founder of Eton College and King's College, Cambridge.

To be able to read and write was seen increasingly as an essential asset for advancement, and not an accomplishment limited just to scholars. In the prologue to Geoffrey Chaucer's *Canterbury Tales*, written in about 1387, we find among the descriptions of his motley band of pilgrims several references to literacy, the love of reading, or to professions that would have required the ability to read and write. The Squire, alongside his skills in riding and warfare, can also write and draw, and at the start of 'The Prioress's Tale' she tells us of a small school where the children learn '… to rede, As smale children doon in hire childhede'.

With the growth of educational establishments, perhaps the unfortunate monks were indeed being presented with deadlines they were no longer able to meet.[2] Secular scribes joined the fray; in university towns, the most important of which at this time was Paris, the copyists became numerous enough to form their own professional guilds. A growing market was waiting to receive information and learning, but these new consumers were students and their funds were limited.

The crucial parallel development was the growth of paper manufacture. Up until this time, the material used by the scribes was vellum. Made from the skins of calves, vellum was expensive, whereas paper was now becoming affordable. And, as has been observed, it's easier to make paper than to produce calves. So all that was needed now was a means of duplicating the required information, more cheaply and much, much faster.

It has been a matter of furious dispute as to who exactly should receive the credit for the invention of movable type, but the laurels are now generally allowed to rest on the brow of Johann Gutenberg (or Gensfleisch zur Laden – the name Gutenberg was taken from his family house). He is the least shadowy figure in a small, ill-lit cluster of otherwise dubious claimants. There is no book or printed work in existence which bears his name, and no portrait was done of him in his lifetime. His exact date of birth is uncertain, but he was born in Mainz in Germany in the late 1390s, or possibly at the start of the fifteenth century. Any evidence is purely

2 It has been estimated that a written Bible represented four years' work.

circumstantial, but there is enough of it to make him by far and away the strongest and most feasible contender. To him, also, falls the credit for the first major printed work in the Western world, the 42-line Bible, published about 1455.

What little we know of Gutenberg's life comes mainly from legal records. He initiated or was drawn into legal conflict on a fairly frequent basis, and for this historians must be profoundly grateful. Mainz has taken a pounding over the centuries; pillaged and burnt during a conflict between two rival archbishops in October 1462, it also experienced the ravages of the Thirty Years War in the seventeenth century[3] and of French Revolutionary mobs at the end of the eighteenth. So it's possible that other material that could throw more light on Gutenberg's life and work has been lost along the way.

We know that his father was connected to the episcopal mint, and Johann himself gained experience in working with metal, a knowledge that proved invaluable in his later undertaking. He is first recorded in 1420, in connection with the settlement of his father's will, which meant that he was legally of age, at least fifteen. In 1430 he is listed in a decree issued by the council of Mainz allowing certain exiled citizens to return, although there is no record that he did. In 1434 he was involved in the arrest of a Strasburg city official for non-payment of money owed, and a couple of years later in a breach-of-promise suit.

In 1439 he is back in the courts, and here is where the story becomes interesting. Gutenberg had set up a business partnership, he and his colleagues working together initially on two projects: polishing gemstones and making mirrors for pilgrims. These latter were useful for glimpsing holy relics from the midst of a large crowd, but there was more; catch the reflection of the relic in the glass, then carefully cover it, and the healing powers of the devotional object would be held until required, or so ran the belief. Then simply uncover the mirror and direct it to where the blessing was needed.

The Aachen pilgrimage was the marketing opportunity for these items, but the small cooperative got the date wrong. The pilgrimage was to be in 1440, not, as they thought, in 1439 – a good instance of the need for some printed pre-publicity. Now short of work and

3 The Thirty Years War (1618–48) started as a religious conflict and widened into a general struggle for power, involving France, Spain, the Netherlands, Denmark, Sweden and the states of the Holy Roman Empire, and was fought mainly on German soil.

with another year to wait to recoup their outgoings, Gutenberg reluctantly let the partners in on his third project, what would be mysteriously referred to in the court documents as 'the adventure and the art'. Chestmaker Konrad Saspach built a press for the purpose, and Hans Dünne, a goldsmith, was commissioned to engrave 'forms' (an early term for type). Unfortunately one of Gutenberg's partners, Andreas Dritzehn, died of plague, and his two brothers were keen to take over his interests in the businesses, not least the mysterious third project. Even before Dritzehn's death, Gutenberg had given orders to melt down 'forms' so that no one would see them. He now instructed his servant, Lorenz Beildeck, to go to Dritzehn's brother Claus and ask him to take apart something that was lying in a press in the work premises. The object was in four pieces which could be dismantled by removing two screws. The pieces were then to be laid out separately on the press so that no one would know what they were. But when Claus arrived at the workshop, the mysterious object was nowhere to be found. The Dritzehns took legal action over their stake in the business, but they retired defeated; the terms of the partnership stipulated that relatives of a deceased member would receive just 100 guilders compensation.

Gutenberg was trying to keep the number of people who knew about the third project as small as possible. Even in the court case it is never revealed exactly what the nature of the business is. Maybe this was because, to use the terminology of the computer industry, it was about to 'ship'. Albert Kapr, in his definitive 1996 biography *Gutenberg: the Man and His Invention*, states his belief that printing was born in Strasburg. He dates the fragment of the *Weltgericht*, a poem about the Last Judgment found in 1892 in the binding of an account book for Mainz University, at between 1440 and 1444.[4] The typeface is recognizable as Gutenberg's but the variance in height-to-paper of some of the letters, resulting, in places, in weak impressions, suggests earlier, unperfected technology. He dates a twenty-seven-line *Donatus* – a Latin grammar also later found in the bindings of Strasburg books – even earlier, probably about 1440, the year after the Strasburg trial.

Gutenberg drops from view from 1444 until 1448 – the missing years – when he resurfaces back in Mainz.

4 Early printed fragments are usually discovered as parts of book bindings. They were probably printer's waste, but the fact that they were printed on parchment would still make them valuable material for binders. When the bindings later disintegrate, and the volumes are rebound, the prints come to light.

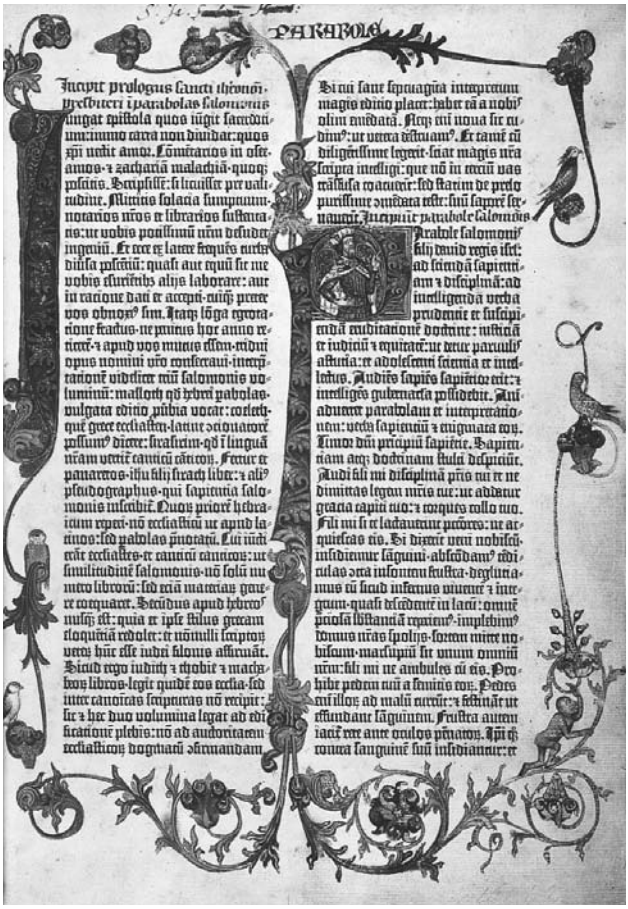
We owe much of subsequent documentation to the fact that his venture was an expensive one, and he had to seek loans to finance it. In that year he borrowed 150 Rhenish guilders, and a year later another 800 from a lawyer called Johann Fust. In 1455 he was involved in yet another legal action, this time against Fust, who in the interim had become Gutenberg's business partner and financier. Fust had foreclosed on his loans, and took over Gutenberg's operation.

Also in 1455, the future Pope Pius II wrote of a meeting held the previous year in which a man had either been showing or talking about his work on a Bible. In 1458 Gutenberg defaulted on some old Strasburg debts; 1465 found him granted a pension by the prince-archbishop of Mainz, and finally, in February 1468, we have the record of a beneficiary to his will, Dr Konrad Humery, who had presumably also lent Gutenberg money, and received as posthumous conpensation some print-related equipment and material.

It is irresistible to cast Fust as the villain of the piece, the man who robbed Gutenberg of the fruits of his genius at the point when more than fifteen years of perseverance were about to pay off. To his credit, he brought into the enterprise Peter Schoeffer, a punch-cutter par excellence, who probably raised Gutenberg's production to a higher aesthetic plane than it would otherwise have achieved. With Gutenberg out of the picture, Fust and Schoeffer went on to produce further books: the Mainz Psalters, *The Rationale of Durandus*, and another Bible in 1462.

Gutenberg's enduring monument is his Bible, known as the 42-line Bible, from the number of lines of text on the page. It ran to over 1,200 pages, and was finished in about 1455. For some it remains one of the most beautiful books ever made, both aesthetically and technically.

His typeface was an imitation of the monastic script, a blackletter. The decorations were put in by hand afterwards. In the use of this lettering it has been argued that he was simply going to every possible length to make his printed Bible as close in appearance to a handwritten one as he could, to make his new product acceptable to his potential market. The Bible had to be a commercial success, if only so that Gutenberg could pay back his creditors. This was no vanity publishing, undertaken purely for aesthetic motives or solely for the glory of



5 The opening page, Proverbs, of the second volume of Gutenberg's 42-line Bible. The decorations were put in by hand. 'For regularity of setting, uniform silky blackness of impression, harmony of layout … it is magisterial in a way to which we can rarely aspire under modern conditions' (Albert Kapr).

God. It has been remarked that 'extreme conservatism as to the presentation of reading matter has always been the outstanding characteristic of the reading public'.[5] In other words, if it looks strange and unfamiliar, the reader won't go near it.

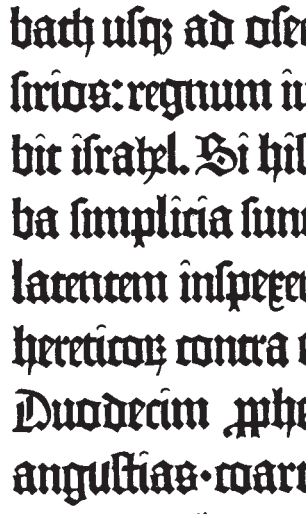
But equally we have no evidence that Gutenberg was intrinsically interested in letter forms anyway. Why should he be? With enough on his plate perfecting his new production process – and for his Bible to succeed it had to look as good as he could possibly make it – why redefine the whole visual appearance of a book's pages? Far safer for the success of the enterprise to reproduce an existing and accepted style.

The most intriguing aspect of Gutenberg's type, and the thorniest problem for scholars, is the variations between different instances of the same letter. Was this to

5 S. H. Steinberg, *Five Hundred Years of Printing*, London, 1955.

simulate the variance in handwritten characters, to make the pages look as similar as possible to those produced by the process that printing was intended to replace? Or were they just earlier versions, initially rejected, then pressed back into service as time or finances became crucial? A recent theory has proposed that movable type, as we understand it, with castings from matrices, arrived only later, in the 1470s, when type began to be traded.[6] Did Gutenberg in fact use combinations of punches to create his characters, pressing configurations of single character-stroke punches into damp sand, a known casting medium, as an impermanent mould to make the type? Clearly, if this were the case, each character composite would be slightly different, sometimes noticeably so. The theory is fascinating, yet begs the question as to whether experienced workers in metal would not have hit on the matrix idea almost immediately. It certainly offers an ingenious answer to the question of the variance in the type, and serves to underline how much, over five hundred years later, remains intelligent speculation. It's another mystery, and one that may never be satisfactorily resolved.

Along with the crucial development of oil-based printer's ink, Gutenberg's breakthrough brought with it the facility to edit copy, to print a proof, correct it easily, and then print the run. His invention can lay strong claim to being the most significant of the second millennium. Its most immediate major effect was to make possible the Reformation; before, the Church largely controlled the dissemination of knowledge and the reading of the Bible. The ideas and writings of Erasmus, and later the pamphlets of Martin Luther, could not have achieved the influence or effect they did without the printing press. Whether this was a good or bad thing depends on your point of view, but the unstoppable spread of ideas through printed material was an essential step on the road to democracy.



6 Gutenberg's blackletter, lovingly re-created by New Jersey's Dale Guild Type Foundry for modern-day letterpress enthusiasts. The variance in Gutenberg's original letter forms means that the present project, called B42, remains in a constant state of flux; 'It may never be a finished, "done" thing,' say its makers.

Nearly all major inventions or scientific breakthroughs have claimants and counter-claimants to the distinction of having been the inventor or discoverer – the circulation of blood, DNA, the telephone, television, photography, cinema. Someone has their ideas taken and exploited by someone else; sometimes they make an

6 Paul Needham and Blaise Agüera y Arcas, in a lecture to the Grolier Club in New York in January 2001.

early unsatisfactory version and the person who makes a better, subsequent model scoops all the credit. The invention of movable type is no exception. Various claimants have had their champions, and the nineteenth century was to witness a ferocious debate over the contributions, and even the very existence, of the most significant, Laurens Coster.

But first let's look at the also-rans. Step into the spotlight, Pamphilo Castaldi. In 1866 the British literary magazine *The Bookworm* ran a short article about the imminent erection in the Italian town of Feltre of a statue to Castaldi, the inventor of movable printing type. Apparently Castaldi, after studying law, opened a 'school of literature' for learning the proper usage of the Italian language. One of his students was 'John Faust of Mentz'. In 1442 Faust was supposed to have shown Castaldi some of Gutenberg's efforts at printing from wood blocks. Castaldi then, it is alleged, invented movable type himself, inspired by glass letters made in Venice. He knew how the scribes used these to print the large first letter on the page, and hit on the idea of employing this method for the rest of the text as well. Not realizing the momentousness of his idea, he was careless enough to mention it to Faust, who promptly headed back to Mainz to communicate the brainwave to Gutenberg and Schoeffer. A Castaldi festival was held in 1866, including musical works specially written in his honour.

The Bookworm took this account from an Italian historian, Stefano Ticozzi, and while regarding it with caution reminded us that 'great discoveries are seldom attributed to the real inventors'. It was probably no coincidence that 1866 was also the year in which Venetia, the province in which Feltre is located, was freed from Austrian control to join the recently unified state of Italy. The fêting of Castaldi was doubtless an attempt to foster a new sense of national identity with the creation of a local, but also Italian, hero.

Make room, then, Castaldi, for Jean Brito. The Abbot of Cambrai, Jean Le Robert, recorded in his diary in 1446 and 1451 that he had bought in Bruges and Valenciennes copies of a book called the *Doctrinale of Alexander Gallus*. In 1898 the archivist of Bruges, Louis Gilliodts-van Severen, put forward the claim of Jean Brito, one of Bruges' first printers, but also, Gilliodts asserted, the

printer of the abbot's *Doctrinale* and therefore the inventor of movable type. His argument is open to question, to say the least. Brito had claimed in a later credit line, a colophon,[7] that he had 'discovered, without being taught by anybody, his marvellous art'. The existence in the National Library in Paris of a *Doctrinale* printed at a later date by Brito seemed to Gilliodts confirmation that Brito had printed the abbot's copies too. Interestingly, though, Gilliodts also believed that Gutenberg's letters were not cast but engraved, which links tangentially with the latest theories.

Step forward next, perhaps the most intriguing case of all, Procope Waldfoghel, an itinerant goldsmith who arrived in Avignon in France in the early 1440s, announcing a method of mechanical writing, using letters of tin, iron, brass and lead. He was lent money by one Davin de Caderousse in return for instruction in this new craft. In July 1444 a student called Manaud Vital was promised two steel alphabets, two iron forms, a steel instrument called a *vitis*, forty-eight tin forms and 'other forms appertaining to the art of writing'. Waldfoghel had been in Lucerne, and may conceivably have met Gutenberg's earlier Strasburg contacts, the Dritzehns, who are known to have gone there too. Did he learn enough of what Gutenberg had been doing in Strasburg to make him decide to set up his own operation in Avignon, selling instruction in the new craft? A further connection has been suggested with Hans Dünne, Gutenberg's goldsmith accomplice. Was Waldfoghel an assistant of Dünne's? Once again, it's a tantalizing episode that seems fated to remain for ever the subject of supposition – Waldfoghel and his partner, the locksmith Girard Ferrose, left Avignon in May 1446 to escape their creditors, and disappeared into the mists of history. No examples of their printed work have ever been found.

> This highly valuable art was discovered first of all in Germany, at Mainz on the Rhine. And it is a great honour to the German nation that such ingenious men are found among them. And it took place about the year of our Lord 1440, and from this time until the year 1450, the art, and what is connected with it, was being investigated. And in the year of our Lord 1450 it was a golden year, and they began to print, and the first book they

7 The colophon was a statement at the end of the book which carried the kind of information that would be found on the imprint page of a modern book – the one following the title page that gives the date of printing and who the printer is. The medieval version was sometimes also used as a piece of self-promotion by the printer.