

Inquit epistola sancti iheronimi ad
paulinum presbiterum de omnibus
huius historie libris. capitulu pmi.

Hanc ambrosius
cui michi munus-
cula preteris. derulit
sit et suauissimas
lras: q a principio
amicicie. hie pba-
te iam hie et veteris amicitie noua
precebant. Quia cui illa necessitudo e-
t xpi glorio copulata: qm non vili-
tas et familiaris. no pntia tantum
corpor. no libola et palpi adula-
sed dei timor. et diuina scripturaru
studia conciliant. legim in veteribz
historijs. quosd a lustrasse. puincia-
nouos adijisse plos. maria trasisse
ut eos quos et libris nouerant. cor-
q videret. Sic ptagoras monphi-
acos iates. sic plato egyptu. et archita-
tarantinu. cananqz oram yralie. que
quond a magna grecia dicebat. labo-
riolissime ptaguere. ut qui athenis
nate erat. et potius. cuiusqz doctrinas
achadum gignasia psonabar. fieret
regius atqz discipulus. malis aliama
veterum discere. qm sua ipudm ingre-
deret. Deniqz cu lras quasi toto orbe fugien-
tes psequit. capr a piraus et venuda-
tus. orans crudelissimo paruit. dud
captiuus vnde et secutus: tunc quia
phtis maior auerit se hie. Ad ortum
liuu. lades eloquens fonte manant.
de vltimis hispanie galliaruqz finibz.
quosd au vuisse nobiles legimus: et
quos ad exemplacione sui roma no
natebat. vni hois fama pduxit. Ma-
huit illa tras in audim omibz seculis.
edebanturqz miratur. ut urbe tantu

ingredit. aliud terra urbem quereant.
ipolloni? hie ille mag? ut vulgus
loquitur. hie plus. ut pitagora ca-
dunt. intrauit pfas. pntuit caualu
albanos. scythas. mallagras. opule-
ntissima indie regna penetravit. et ad
getanum lacuismo phylon auxu-
ntissimo puenit ad braguanas. ut
hyarcam in throno seduit auro et de
cantalit fone potantem. inter paucos
discipulos. de natura. de moribz. ac de
curu dng. et fides audiret doctorum.
Iude p claudas. babilonios. chalte-
os. nudos. alvrios. parthos. syros.
phenices. arabes. palestinos. rufus
ad alexandria ptegit ad ethiopia:
ut gignosophistas et famosissimam
solis mensam videret in fabula. In-
uenit ille vir ubiqz qz disceret. et semp
proficiens. semp se melior fieret. Occup-
sit super hoc planissime octo volumi-
nibus. phylotactus. Cap secundu

Quid loquar de secti hominibz.
cu aplis paulus. vas electio-
is magister gentiu. qui de consuetu-
tate i se hospitis loquebat dicens au-
teptimentu queras aus qui in me
loquit xpus. post damascu arabiagz
lustrata. ascendit iherosolimā ut vide-
retur et māsit apud eu diebz quindez.
Ihor m multio ebdomadis et ogdo-
adis. hunc gentiu pdicator instructu-
dus erat. Rursuqz post autos quor-
decim assumpto barnaba et tro. eg-
sunt cu aplis euageliu: ne forte in va-
cuu curaret aut curuisset. Ithabet
nescio qd latens energie. vire uon-
adus. et in autis discipuli de audoris
ore transulsa. foras fontat. Quid et
ethiopes cu rodi regularet. et legaretur



THE RISE OF PRINTING IN THE WEST

Henri-Jean Martin

THE EMERGENCE OF PRINTING IN WESTERN EUROPE

In Western Europe, printing stemmed from a technological advance that soon outstripped its initial goals and transformed an entire civilization. It owed its success to an increasing demand for written texts. The use of writing had been growing since the eleventh century in response to the increase in economic and intellectual activity, along with the revitalization of towns and cities, all of which required ever greater quantities of books and practical documents. Above all, writing became an everyday affair starting in the thirteenth century. By the end of the fourteenth century, and even more so in the fifteenth, this trend—which had begun in Italy—accelerated in Germanic lands, which enjoyed great prosperity and boasted more and more schools and universities.

Meanwhile, Spanish and Italian merchants had introduced paper into Europe in the twelfth century. The methods for making this new medium spread across the continent in the fourteenth century. The first German paper mill appeared in Nuremberg in 1399, the year that Gutenberg is thought to have been born in Mainz.

At the same time, people had begun cutting images in relief on blocks of wood, accompanied by short texts. These woodblocks would then be printed on paper. The invention of the true printing industry nevertheless sprang from advances in metallurgy then occurring in Germany. The need for silver in this period of economic revival spurred engineers to perfect methods of extracting it from silver-bearing lead ore. Also, iron and copper mines were actively exploited, and efforts were made to mass-produce

metal objects, notably in Nuremberg, whose municipal forges largely contributed to the development of new techniques.

The story of Johannes Gensfleisch, known as Gutenberg, unfolded in this context. Gutenberg's life, carefully studied by German scholars and apparently well known, still retains a measure of mystery. He came from a patrician family exiled by an urban uprising, and became an engineer like many other men at the time. He offered his services to clients among the large merchant companies, proposing to teach them new methods for cutting gemstones, for making mirrors, and for "writing artificially." Gutenberg was not the only one of his kind—for example, a certain Procopius Waldfoghel from Prague who had trained at the Nuremberg forges seems to have helped to develop, on the shores of Lake Constance, techniques for intaglio engraving on copper plates even as he studied the manufacture of astronomical clocks. Waldfoghel also sold an *Ars scribendi artificialiter* to some Jews in Avignon, probably designed for tooling book bindings, while one of his journeymen taught the art of making cannon to agents of the duke of Burgundy.

The lack of an adequate technical vocabulary means that nothing can be inferred from otherwise detailed documents concerning litigation over the printing invention on which Gutenberg worked in Strasbourg from 1438 to 1444. Yet it appears certain that he managed to print, in Mainz, a number of items in the years 1448–1453, thanks to loans from a rich merchant, Johannes Fust. It also seems that, once the invention was complete, Gutenberg swiftly found himself ousted by Fust, who preferred to cut a deal with Gutenberg's assistant, Peter Schoeffer, a former student at the University of Paris who became Fust's son-in-law and who probably perfected the mold used to cast the characters.

Fig. 1. The prologue to the so-called "42-line Bible", attributed to Fust and Gutenberg. Bibliothèque Nationale de France, Paris.

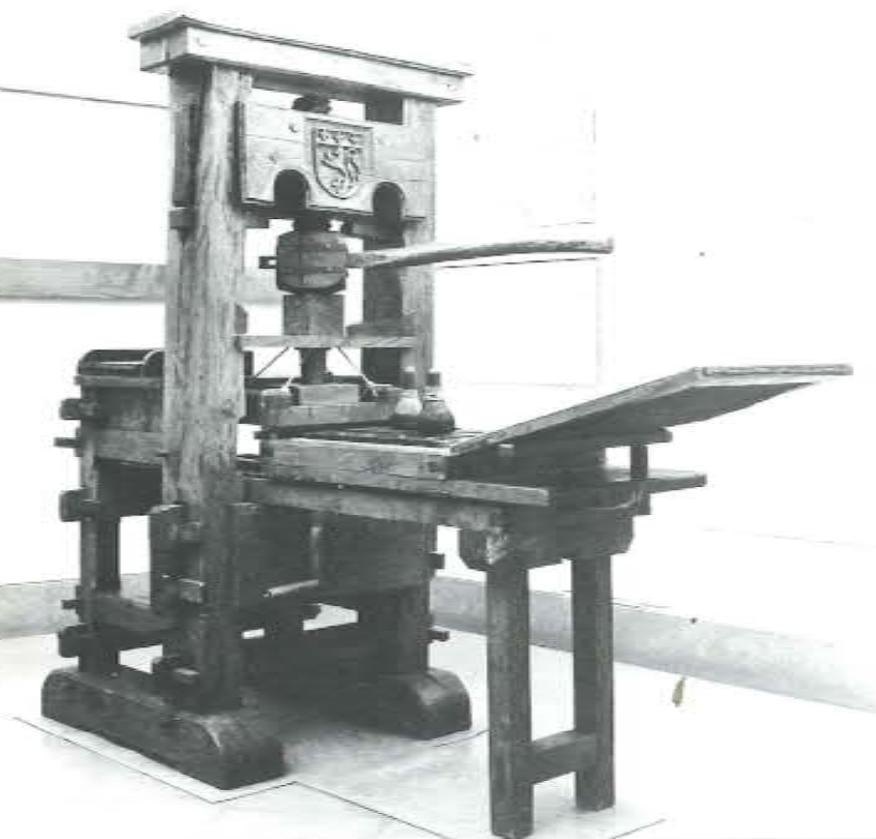


Fig. 2. A reconstruction of an early printing press based on a fifteenth-century engraving. Musée Lyonnais de l'Imprimerie, Lyon.

The members of this group printed small publications—grammars by Aelius Donatus, astronomical calendars, and letters of indulgence—before undertaking what they intended to be their masterpiece, the “42-line Bible” (Fig. 1). This large book was probably completed in 1454–1455 by Gutenberg in collaboration with Fust and Schoeffer. After this the latter two alone produced a magnificent psalter dated 1457. They thus set off to conquer a vast potential market that would soon inspire rivals and followers such as William Caxton, who probably learned the art of printing when he was working in Cologne in 1471.

EARLY PRINTERS VERSUS HANDWRITTEN MODELS

The art of typography as it emerged in the West involved simple technology that nevertheless implied certain forms of standardization. It is worth recalling that characters were made from a steel die on which a letter (or other sign) had been carved, reversed, in relief. This die was punched into a small block of copper—the matrix—where it left an

intaglio imprint, the right way around. Then the matrix was set in a mold that could be used to cast endless numbers of characters from an alloy of lead, tin, and antimony, which melted at low temperatures. Reproducing the given character in reverse, these letters could be assembled into the lines and pages (and later groups of pages) of a “form.” Once covered with ink and applied with the correct pressure to a sheet of paper, the text appeared the right way around.

The press used at the time was a simple, robust instrument (Fig. 2) that could print a text correctly only if the pieces of type were of the same height (known as “height to paper”) and had the same body size (or “point size”). Only the width could vary without creating problems. Moreover, the typesetter had to be able to draw the characters he needed from the case swiftly and easily. This also called for a standardization of characters.

Now, great diversity reigned among manuscripts henceforth available for mass reproduction. First of all, this diversity concerned the scripts, or style of handwriting, which varied according to region and type of book. Church books and certain bibles were written in the most solemn Gothic lettering, known as *lettre de forme* (or Textura), characterized by large vertical shafts and multiple angles resulting from the systematic elimination of curves.

Theological treatises, meanwhile, employed a less solemn, smaller and generally rounder hand (despite a certain angularity) known as *lettre de somme*. Such books employed a conventional, strikingly limited vocabulary and systematically used a series of standardized abbreviations. They followed the principle of a completely full page, no space or indentation being allowed, although margins were sometimes very wide. This layout made it difficult to get an overall vision of a text, which mattered little given that the methods of reasoning at the time were primarily analytical—the argument would be divided into segments that fit into one another according to a stereotyped construction, as meticulously stated at the head of each section of the book.

Books in vulgate languages, designed to be read in small groups of people, were laid out very differently. The text was usually divided into short chapters preceded by a summary, everything contributing to the oral reading. The script used to transcribe these works was generally a type of Gothic hand known as *lettre bâtarde* (bastard) because it was employed both for documents issued by chanceries and for literary texts. *Bâtarde* varied from land to land, obviously, since each chancery had its own script. Punctuation, meanwhile, was usually highly limited, was intended above all to guide the reader's voice, and had become somewhat fossilized.

Early printers strove to reproduce these various types of script (Fig. 3). They also initially attempted to print titles in red, which represented a highly complicated task. They were notably unable to dispense with rubricators who went through the pages of every copy, adding the many pen or brush strokes of the rubrics that guided the reader; it goes without saying that a growing number of volumes were soon being issued without this additional work, thus rendering unreadable many theological texts that piled up, unread, in libraries.

In view of these various models of writing, early attempts at innovation had been made in Italy well before printing emerged. The Italians had always had difficulty in accepting the angular, Gothic script. For their university texts—notably for law books inspired by a school of jurists in Bologna—they therefore adopted a round lettering of rather large size that was markedly different from the Parisian *lettre de somme* script. This hand became highly popular in the Romanized lands of southern Europe and was later widely disseminated through printing.

It is well known, furthermore, that the grand reform in writing was primarily the work of humanists who promoted scripts inspired simultaneously by the Roman capital letters seen on the pediments of many ancient buildings and by Carolingian minuscule script, itself more or less derived from ancient Latin lettering. The great Italian printers of the fifteenth century soon began imitating these magnificent models.

Meanwhile, in a concern to obtain the best possible versions of major Latin texts, the humanists struggled to develop coherent systems of punctuation. Paradoxically, this trend took a long time to make itself felt on Italian typography. On the other hand, scholars who sought to introduce the same texts outside Italy seemed particularly concerned to make reading easier, as was notably the case with Guillaume Fichet and Johann Heynlin in Paris, who established a very elaborate system of punctuation designed to facilitate the understanding of certain works by Cicero and Sallust. It might be wondered whether French printers' highly precocious concern to make ancient texts more comprehensible came from the fact that their work was monitored by scholars accustomed to a strictly analytical, scholastic way of thinking based on the principle that an argument had to be divided into elements constituting the units of a whole.

Fig. 3. Examples of fifteenth-century typefaces:

- (a) Textura (*lettre de forme*): The Bible (Gutenberg and Fust, Mainz)
- (b) "Bolognese" rotunda: (Rugierius, Bologna)
- (c) French Gothic *bâtarde* (Le Rouge, Paris)
- (d) English Gothic *bâtarde* (Caxton, Bruges)
- (e) Roman (Nicolas Jenson)

Domine deus meus es tu ⁊ realtra-
bo te: cōfitebor nomini tuo. qm̄
fecisti mirabilia: cogitationes antiquas
fideles amen. Quia posuisti ciuitatem
in tumultū. urbem fortem in ruinam:
domū alienorū ut non sit ciuitas: et i

a

li ⁊ aq̄ nō ē vīna. cisterne faciēde sub rectis. et lacus sub
loco. ut boīes ex alio et p̄cus vti possint. dā dā opā ut
radice mōtis siluestris villā ponat. vbi pastiones sūt
vni saluberrimi flabūt. q̄ posita ē ad exortos eq̄ noctia
q̄ estate hē vmbriā. h̄peme solē. Si cogaris p̄pe flumē e
dū ē ne aduersus eū p̄as. h̄peme enī fiet vebemēter fri
nō salubris. Aniaduertendū ē li aq̄ erūt loca palustria

b

Azarus nouueau resu	Salce Sng fleur
scite de mort a die: lui	hominable sur l
estāt ches ledit symon	auoit Sme grād:
e lepreux recitoit et disoit aux	de gloutons agl
issistēs que lui estāt es parties	nōbre q̄ a paine
nfernales il auoit Ven en Sme	nēbrer lesq̄lles

c

Like as the helthe of euery man consisteth in the er
de. Euery man therne moche lesily takie hede to pou
uey him for to come to a goode ende: Whilpe thar
he hath tyme and leyzer. To this myght moche welk ser
ue a feladde ⁊ welde frende deuoute and conuenable whi
che in his laste ende assyste hym truly. And that he comfo
rt and corage hym in stedfastnesse of the fapth wyth goode
pacyence and deuocyon/ wyth good confydence and perseu

d

Secūdo abscissione: cū a fine dictionis aliquid abiici
accentus in eadem syllaba ubi erat ante abscissionem:
bus propriis secunde declinationis terminatis in. ius
.us. in uocatio acuitur penultima quanq̄ eadem sit
mina gentilia. ut arpinas pro quo antiquiores diceb
Tertio trāspōsitione: cum prapōsitiō postponitur.
tra naturā suā tunc enim ultima acuitur. ut transtra
Maria omnia circum.

e

THE TRIUMPH OF ROMAN TYPE IN WESTERN EUROPE

Right from the start, Italian-based printers published ancient classics—as well as books by Dante, Petrarch, and Boccaccio—in a humanist-inspired typeface. Two names are worth noting: the Frenchman Nicolas Jenson, who worked in Venice and developed, around 1469–1470, the roman letters to receive future consecration, and the Italian Aldus Manutius, who cut roman letters based on proportions established by artists and calligraphers using ancient inscriptions and who also created the first italic typeface. Italic type imitated the sloping, cursive hand used by the Vatican chancery, on which the humanist Niccolò Niccoli had drawn when developing a highly dense but nevertheless elegant book script. Furthermore, Aldus Manutius, who specialized in printing the Greek classics, began using a system of accents designed to aid the reading of Latin texts by indicating stressed syllables.

Three dates stand out in the printing career of Aldus Manutius. In 1494, he published Pietro Bembo's *Aetna*, the



Per la quale cosa, principia poscia ragionevolmente suspicare & credere peruenuto nella uassissima Hercynia silua. Et quivi alio non essere che labuli de nocente fere, & caernicole de noxi animali & de feiiente belue. Et perciò cum maximo tericulo dubitaua, di essere scenzia alcuna difesa, & scenzia moderata dilanato da ferozo & dentato Apeo, Quale Charidemio, ouero da furente, & famato Vro, Ouero da sibillante serpe & da fremendi lupi incurfanti miseramente dimembrabondo l'ucare ue delle carne mie. Dicio dubitando il pagurito, lui propofe damnata qua l'ouaque pigredine piu non dimorare, & de trouare exito & euadere gli oc correnti pericoli, & de follicitare gli gia sospetti & disordinati paffi, spesse fiate negli radiconi da terra scoperti celsitudo, de qui, & de li perzagabondo errante, hora ad lato dextro, & mo al finitro, tal hora retrogrado, & tal fiata antrigado, infcio & oue non fapendo meare, peruenuto in Salto & dumeto & lenticofo loco tutto granfiato dalle fralche, & da spinoli perunuli, & da lintrachibile fructo la faccia offensa. Et per gli micromati cardeti, & altri spinoli lacerata la toga & ritinuta impediua pigritando la tentata fuga. Oltre questo non uedendo delle amacetreuole pedate indicio alcuno, ne tritolo di femita, non modioeramente diffuso & dubiofo, piu follicitamente acceleraua. Si che per gli celeri paffi, si per el meridionale azio quale per el moto corporale facto calido, tutto de fudoet humefacto el fredo

P.V.M. GEORGICORVM,
LIBER QVARTVS.

Rotinus aerii mellis, caelestia dona
Exequat, hanc etiam Maenas aspice
partem.
Admiranda tibi lenius spectacula rerū,
Magnanimosq; duces, totiusq; ex ordine gentis
Mores, et studia, et populos, et praelia dicam.
In tenui labor, at tenuis non gloria, si quem
Nimius lena sinunt, audiriq; uocatus A pollo.
Principio, sedes apibus, statioq; petenda,
Quo neq; sit uentis aditus (nam pabula uenti
Ferre domum prohibent) neq; onces, haediq; petulci
Floribus insulant, aut errans bucula cum po
Dentiat rorem, et surgentes atterat herbas.
Absint et picti squalentia terga laerti
Pinguibus à stabulis, meropesq; aliaq; uolucres,
Et manibus progne pectus signata cruentis.
Omnia nam late nascant, ipsasq; uolantes,
Ore ferunt, dulcem nidis immutibus esum.
At liquidi fontes, et stagna uirgentia iussu
Adiunt, et tenuis fugiens per graminarimus,
Palmaq; uesibulum, aut rogens oleaster obumbret,
Vt cum prima noui ducent ex amina reges
Vere suo, ludetq; fanis emissis iuuentus,
Vicinia inuitet decedere ripae calori,
Obuiq; hospitibus teneat frondentibus arbor.
In medium, seu stabit iners, seu profluet humor
Transuersas salices, et grandia omnia saxa

Fig. 4. The beginning of the "Georgics" in Virgil's *Works*, published by Aldus Manutius in Venice in 1501. This octavo volume was the first book to use italic typeface (cut by Francesco Griffo). Bibliothèque Nationale de France, Paris.

Fig. 5. (left) Francesco Colonna's *Hypnerotomachia Poliphili* (Dream of Polyphilo), published by Aldus Manutius in 1499 in a typeface cut by Francesco Griffo. Bibliothèque Nationale de France, Paris.

first book to use roman type cut by engraver Francesco Griffo. In 1499, he brought out Francesco Colonna's *Hypnerotomachia Poliphili* (Dream of Polyphilo), an allegorical tale written in a language inspired simultaneously by Latin and Italian dialects. Illustrated with figures of archaeological inspiration and highly pure in style, this book employed a markedly refined typography—for instance, the typesetter disposed of several variants of certain lower-case letters, allowing him to avoid the impression of visual monotony on the page (Fig. 5). Finally, in 1501, Aldus printed the *Works* of Virgil in a small format (octavo) and

italic type, for which he received authorization from the Venetian Senate (Fig. 4).

Very soon, printers working elsewhere began using typefaces inspired by the roman letters cut in Italy to reproduce classical Latin texts. German typographers, however, who long dominated the continent and were more accustomed to the Gothic style, attempted to adapt the new typefaces to the vertical thrust of their national tradition. Encountering great difficulty in employing the new capital letters, they sometimes tried to preserve certain features of the uncial-derived capitals they had been using up until then. They also retained certain aspects of their traditional lower-case letters to produce "humanist-Gothic" type.

Roman type was long used solely for texts in Latin. It might have been expected that each nation would retain the Gothic typefaces derived from the script used in the local chancery for the publication of texts in the local language. That, however, would have meant overlooking the glamour of the classical culture and the writing that symbolized it. Thus Claude de Seyssel, a scholar from Savoy who was an adviser to French King Louis XII, proposed to his royal patron—in the preface to one of his famous translations from Greek and Latin—that French should be made a language as ordered as Latin by following the example of the ancient Romans, who themselves had looked to Greek to endow their own language with a more regular form.

The manuscripts presented to Louis XII by Seyssel were of course copied by hand in the court's Gothic script. But a revolution was stirring in the entourage of the dauphin François, the future King Francis I: the first manuscript in French to employ the new roman script was produced at the instigation of the dauphin's tutor, François Demoulins. This treatise praised Christian virtues (Fig. 6), as a kind of reply to the *Hypnerotomachia Poliphili*, which had glamorized paganism. Later, after the victory of Francis I at Marignano, Demoulins composed a dialogue between the young king and Julius Caesar that was handwritten in roman script. Above all, Demoulins presented his patroness Louise of Savoy and her daughter Marguerite of Angoulême with a series of booklets, also written in a humanistic script, explaining and defending certain exegetical theses advanced by his friend Jacques Lefèvre d'Étaples.

These books were composed at a time when Francis I hoped that one day he would rival the ancient Roman emperors, being himself a candidate for election to the title of Holy Roman Emperor. A further stage was reached in 1524, when the king's lector, Jacques Colin, had Seyssel's translations published by humanist typographer Josse Bade and several printers close to the monarchy. Such publications were most timely—the royal government, as it

De prudence.

Prudence est droite raison des choses qu'on peut mettre en operation.

L'office de prudence comme dit Macrobius C'est de ger toutes nos operations Et nos pencees selon Raison Et ne faire riens qui ne soit droit et louable.

Les filles de prudence



Fig. 6. A treatise on virtue by François Demoulins, written in a hand inspired by the roman typeface used in the *Hypnerotomachia Poliphili* (see Fig. 4). The paintings are by Guillaume Le Roy. Ms. fr. 12247, fol. 4v, Bibliothèque Nationale de France, Paris.

moved toward an enlightened absolutism, felt the need to unify the French language, basing it on the vocabulary and pronunciation used at court and the *parlement* of Paris. Robert Estienne was therefore pursuing this same line when, in 1526, he published the first Franco-Latin grammar

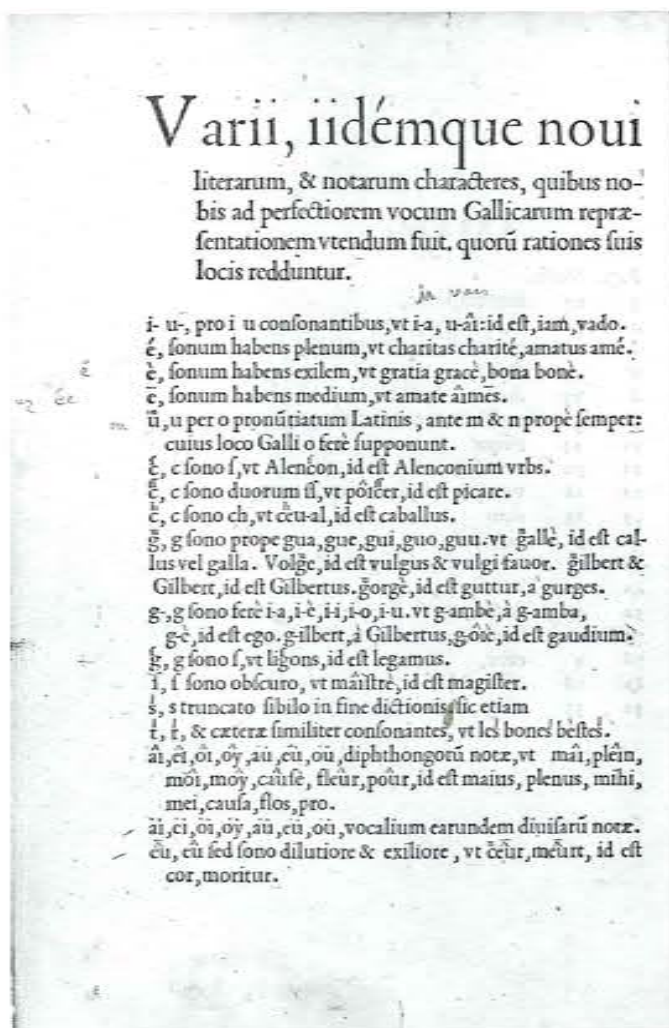


Fig. 7. Diacritical marks used to indicate French pronunciation, cut for Robert Estienne's 1526 publication of *Isagoge* by the physician Jacques Dubois. Typeface attributed to Claude Garamond. Bibliothèque Nationale de France, Paris.

in France—*Isagoge* (Fig. 7), written by a well-known physician named Jacques Dubois—followed by a major lexicographical work that gave the meaning and pronunciation of words and expressions.

This trend coincided with efforts made by type cutters in the tradition of Colines, Augereau, Garamond and Granjon, whose criteria were soon adopted all across Europe. More important in this particular context, however, were theorists such as Geoffroy Tory, whose famous treatise on the design of type, *Champfleury* (Fig. 8), not only provided a meditation on letters but also contributed to the development of a series of new diacritical marks, such as the cedilla.

Starting sometime around 1530, under the influence of people close to the French court such as Clément Marot,

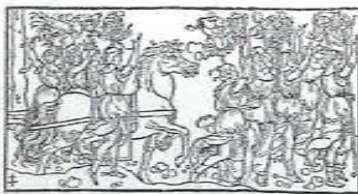
French literary works of the new school were published in roman type with diacritical marks and, especially, accents and punctuation. These were added to the ancient alphabet in an effort to convey pronunciation better, thereby facilitating both diction and comprehension. At the same time, spelling began to be standardized despite resistance from typesetters who wished to retain a certain autonomy (particularly useful when justifying lines of type). Finally, punctuation reached its current form. As discussed below, this did not yet mean that pages had attained their modern appearance, because the concept of chapters remained poorly defined and the principle of block-like pages continued to dominate whenever prose texts were involved.

The veritable graphic revolution represented by the spread of roman typeface everywhere in France remains a surprising phenomenon, especially since Gothic *lettre bâtarde* long remained the official hand used in the French chancery. This revolution was nevertheless encouraged and carried out by the royal entourage and by humanists linked to the royal chancery. Encouraging writers and printers to abandon the familiar path of traditional Gothic lettering and ill-adapted diacritical marks led to a general revision of French linguistic norms. The change made French a "well-ordered" language and turned spelling into government business. This trend, backed by a strong central government, prefigured French classicism. At the same time, cutters of French type began imposing their norms everywhere. Such was their influence on France's neighbors that the English and Spanish adopted this type of lettering (which, it should be recalled, was used not only by the French but also—and sometimes exclusively—by the Italians).

Germany, meanwhile, took an opposite tack. Whereas the French court adopted the roman typeface for political ends, Emperor Maximilian did the contrary for similar reasons. Wanting to fuel national hostility to everything that came from Rome, and influenced by the aesthetic taste of artists in his entourage, Maximilian had an Augsburg engraver work in secret, under the emperor's supervision, to produce a Gothic type that was both elegant and refined, directly based on the script used in the imperial chancery. This typeface was used for a few private publications, the most famous of which was Plinzing's *Teuerdank* (Fig. 9). Because Luther's movement followed this new graphic line, Germans henceforth used roman typeface only for Latin texts. Germans simultaneously tended to maintain old traditions in terms of the layout, transcription, and punctuation of printed texts. The Thirty Years' War exacerbated this lag, which was only overcome at the end of the eighteenth century.

LE SECOND LIVRE.

FEUIL. XXX.



BACCHVS
CERES ET
VENVS
SONT ICI
MENEZ CA
PTIFZ.

VELa donques comme iay dit, conuant le J, est le modele & proportion aux lettres At- tiques. Celi a seauoir, a celles qui ont iambes dou- bles. Nous verrons de le O. ou nous ferons le B. qui est de le I. & de le O. entenda quil a iambe & pause qui denote brisure.

EN cest endroit louant nostre seigneur Dieu, le feray fin a nostre Segond livre, au quel nous selon nostre petit entendement demon- stre l'origine des lettres Attiques & ausi vouldr fus- der & prouer, la quelle chose encores prouons, que quelques bons esprits seussent fait a mettre nos- tre langue francoise par regle, afin qu'on peus- sions voir honnestement & leuement a coucher par escript les bonnes Sciences, quil nous fault mender des Hebreux, des Grecs, & des Latins, & que ne pouuons auoir sans grans coustz / fraiz / & despens de temps & d'argent.

LA FIN DV SEGOND
LIVRE.



Ondóni
ce de le
A, fait
de trois
J sus la
fleur du
Lilibe.

Notez
bien icy
& enen-
dez.

Fig. 8. *Champfleury* by Geofroy Tory, published by Gourmont in Paris in 1529. Bibliothèque Nationale de France, Paris.

TEXT AND IMAGE

Of course, the emergence of printing also led to an upheaval in the relationship between text and illustration.

Woodblock printing techniques, developed prior to typog- raphy, had stimulated the spread of booklets in which image and text were produced together in the same way and were therefore intricately linked. Attention was naturally drawn to the images; the few words engraved alongside them (or even within them) played only an explanatory role, as seen, for example, in picture bibles known as *Biblia pauperum* and in enormously popular illustrated Apocalypses (Fig. 10). In a way, it may seem regrettable that these woodcut pam- phlets—rather plain in appearance yet inexpensive and easy

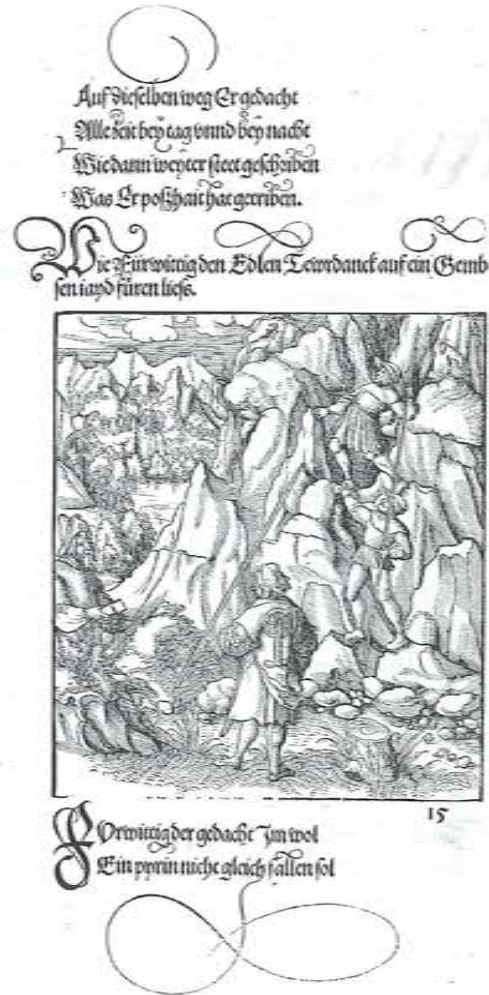


Fig. 9. Page 15 of Melchoir Plinzing's *Teuerdank* (Augsburg, 1517). Illustration attributed to Beck. Bibliothèque Nationale de France, Paris.

to understand—vanished on the arrival of typographical printing. Initially, printers left spaces for illuminators and rubricators to add their work to each copy. Later, engraved woodblocks were incorporated into the typographical com- position, so that everything could be printed at the same time. Illuminators continued to be used for a time to illus- trate certain luxury editions, often printed on vellum, while other editions might be colored in a production-line way, often by using stencils. Little by little, however, engravers became completely autonomous, executing black-and-white illustrations that were totally accomplished, notably thanks to increasingly sophisticated hatching techniques. Then, using very hard wood, they began engraving small vignettes with extremely fine draftsmanship.



Fig. 10. An Apocalypse scene printed from woodblocks in the Netherlands around 1450. Bibliothèque Nationale de France, Paris.

Hence it was once again possible to place an image at the center of a page, turning text back into a kind of commentary on it. A vast secular public became enthusiastic about this type of publication, giving rise to books of emblems, anthologies of heraldic devices (Fig. 11), and other biblical imagery, all of which exploited visual interplay to bring allegorical thinking to the fore. This fashion, which arose in the years 1520–1530, lasted for over a century. Moreover, the popularity of copperplate engravings—which were finer and more accurate than woodcuts, and became widespread from the late sixteenth century—required that sheets with illustrations be printed on a roller press as opposed to a letter press, leading to the increasing use of frontispieces presenting the content and meaning of the book in an allegorical way (Fig. 12).

Engraving also made it possible to represent animal and plant species—not to mention human anatomy—with greater accuracy, thereby favoring the growth of natural sciences and knowledge of the world (Fig. 13). Cartography also benefited, notably in the latter half of the sixteenth

century and first half of the seventeenth. Readers thus steadily learned to “decipher” images and “read” maps, managing to grasp a page with a synthesizing gaze that could analyze the elements of a discourse visually, rather than slowly decoding it by “listening” internally, as they still tended to do.

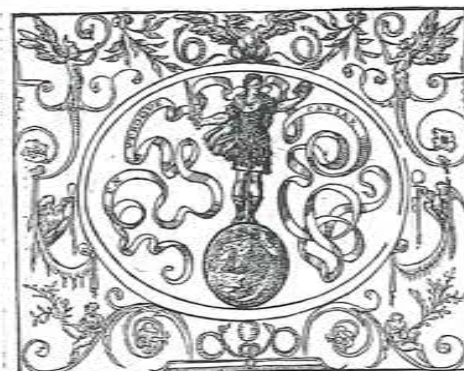
THE EMERGENCE OF MODERN TEXT PRESENTATION

A simple glance at the pages of books from the sixteenth and early seventeenth centuries makes it easy to measure the progress made in the presentation of printed discourse.

The difficulty of the undertaking is reflected in the history of title pages. In the early years of the sixteenth century, title pages started becoming the rule. Yet the title itself would be drowned by laudatory phrases, themselves often wrapped in a decorative framework apparently designed to

DE VISES HEROIQUES
SEQUITVR QVODCVNQUE PETIT. Signi-
fiant que toute sa vie elle ha esté si heureuse, que
l'on ne luy refusa anques chose, de quoy elle eust
enuie.

POVR VN GRAND
SEIGNEVR.



Vn grand Seigneur me demanda vn iour, quelle
Deuise il pourroit porter pour donner à entendre au
monde qu'il auoit grande enuie, Et cherchoit tous
les moyens d'estre encore plus grand Et puissant que
les autres. Parquoy ie luy en baillay vne d'un Em-
pereur armé avec sa couronne de laurier en la teste,
tenant

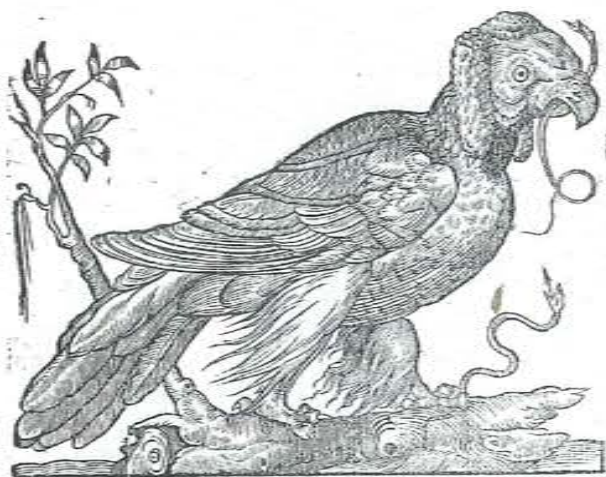
Fig. 11. “Pour un grand seigneur” (“For a great lord”), a motto and device found in Simeoni’s *Deuises héroïques*, a quarto volume published by B. Rouillé in Lyon, 1550.



Fig. 12. A copperplate engraving advocating the legal restoration of dueling, used as the frontispiece to volume two of Vulson de la Colombière's *Mémoires historiques de la Noblesse*, published in folio format by A. Courbé in Paris in 1648. Bibliothèque Nationale de France, Paris.

DE LA FRANCE ANTARCTIQUE. 45

les auteurs. Quant aux animaux, comme bestes sauvages, poissons, & oyseaux, nostre isle en nourrit des meilleurs, & en autant bonne quantité qu'il est possible. D'oyseaux en premier lieu en représenterons vn par figure, fort estrange, fait come vn oyseau de proye, le bec aquilin, les oreilles enormes, pendantes sur la gorge, le sommet de la teste eleué en pointe de diamant, les pieds & iambes comme le reste du corps, fort velu, le tout de plumage tirant sus couleur argentine, hors-mis la teste & oreilles tirans sus le noir. C'est oyseau est nom-



mé en la langue du païs, Pa, en Persien, pié ou iambe: & se nourrit de serpens, dont il y a grande abondance, & de plusieurs especes, & d'oyseaux semblablement, autres que les nostres de deça. De bestes,

m

Fig. 13. A parrot, illustrated in Thevet's *Singularitéz de la France antarctique*, published in quarto by Héritiers de la Porte in Paris in 1556.

fill the entire page. Humanist printers reacted to the clutter by proposing simpler titles and playing on contrasts between black and white. But even the most famous of them were guided by purely aesthetic concerns—the idea of emphasizing key words did not even occur to them, except in the case of the word “Bible,” which they would dramatically place alone in the middle of the page (Fig. 14). Meanwhile, throughout the sixteenth century many books continued to be set as dense pages with no white spacing, no ventilation. That was the case, for example, with Montaigne's *Essays*, the text of which contained no indentation or blank spacing for up to ten pages at a stretch, except when it came to quotations. On the other hand, printers and authors would often include marginal notes indicating the date or subject of the passage opposite. Sometimes illustrations might also lend breathing space and help to pace a text.

Such page layout can be explained by the fact that many texts were subdivided into nothing other than “books,”

La Sainte Bible.



A LYON
PAR IAN DE TOURNES
M. D. LVII.

Fig. 14. Title page from a French bible published by Jean de Tournes in Lyon in 1557, folio format. Bibliothèque Nationale de France, Paris.

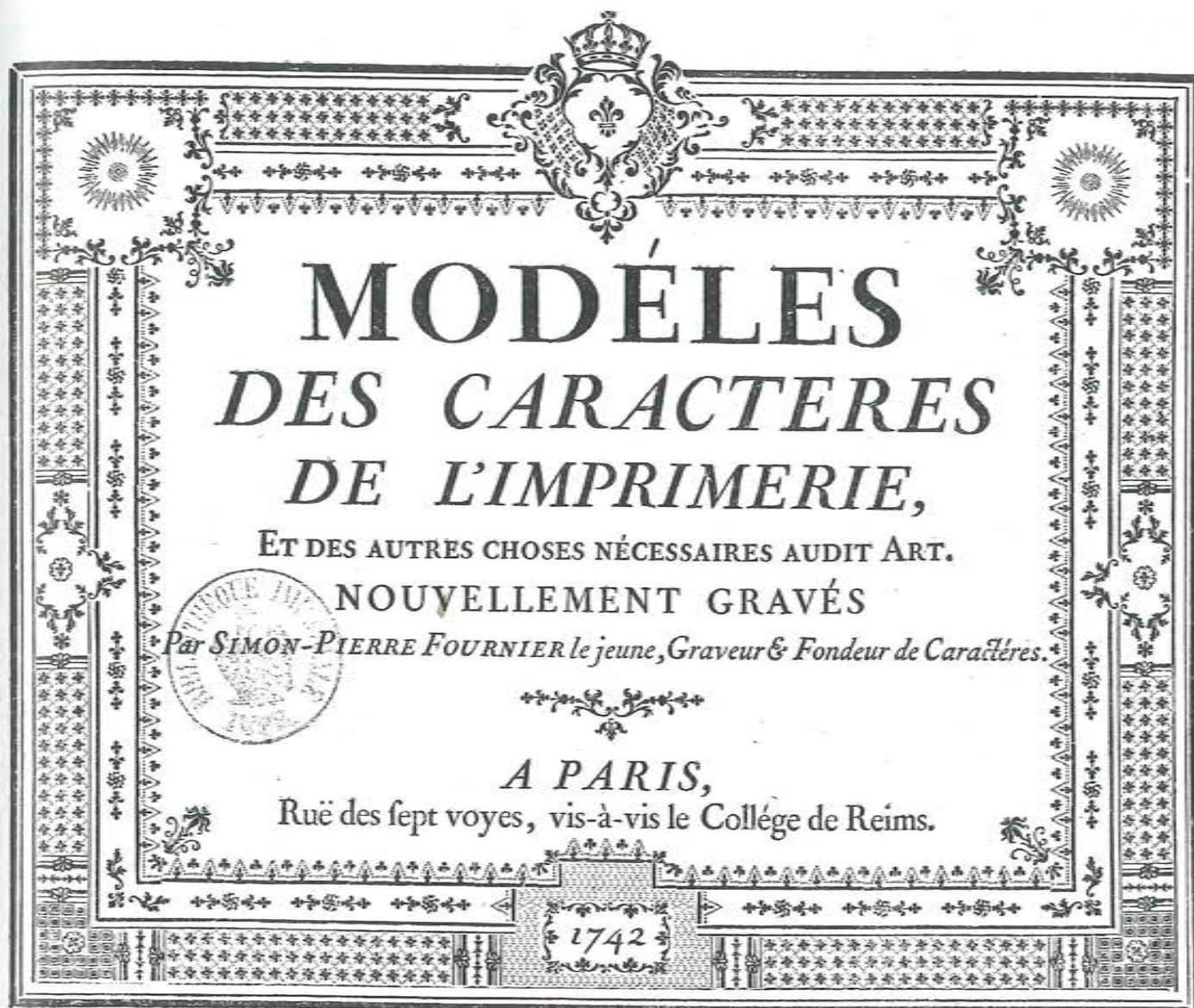


Fig. 15. An example of "baroque printing"—the title page of a typographical catalog by type-founder Simon-Pierre Fournier, 1742. Bibliothèque Nationale de France, Paris.

thus imitating the works of ancient authors for whom the term "book" meant one scroll of papyrus. Occasionally, however, a publisher would insert chapters, even in a classical work, which could vary greatly in length, being no more than a few lines in certain cases. Whatever their length, chapters were not yet broken into paragraphs; even in the mid-seventeenth century, Madeleine de Scudéry and her *précieuse* set in Paris salons were still writing novels that had to be read for hours at a stretch in a murmuring voice by a reader totally immersed in the text in order to avoid losing the thread.

The situation nevertheless began to change in the late sixteenth and early seventeenth centuries under pressure

from editors and the last generation of humanist printers. Wanting readers to be able to find their place in the great works of antiquity, and above all wanting to provide references that would be valid for all editions, editors began to number verses and to divide prose into numbered *capituli* of several dozen lines. Thus emerged the presentation still used today in scholarly editions. Great prose writers of the day in both England and France soon followed this example, as seen in Sir Philip Sidney's *Arcadia* and Guez de Balzac's *Le Prince*. The latter also preceded each section of his book, already subdivided into chapters, with a short summary. Then, when he had *Le Prince* reprinted, he neglected to reproduce the Roman numerals that marked

P U B L I I
V I R G I L I I M A R O N I S
A E N E I D O S
L I B E R P R I M U S.

ARMA, virumque cano, Trojæ qui primus ab oris
Italiam, fato profugus, lavinaque venit
Littora. Multum ille et terris jactatus et alto,
Vi superum, sævæ memorem Junonis ob iram.
Multa quoque et bello passus, dum conderet urbem,
Inferretque Deos Latio: genus unde latinum,
Albanique patres, atque altæ mœnia Romæ.

Musa, mihi causas memora, quo numine læso,
Quidve dolens regina Deum, tot volvere casus
Insignem pietate virum, tot adire labores,
Impulerit. Tantæne animis cœlestibus iræ?

Urbs antiqua fuit, tyrii tenuere coloni,
Carthago, Italiam contra, tiberinaque longe
Ostia, dives opum, studiisque asperrima belli;
Quam Juno fertur terris magis omnibus unam
Posthabita coluisse Samo: hic illius arma,

Fig. 16. The "Didot style," as seen on the first page of Virgil's *Aeneid*, published in folio format by Didot in 1791. Bibliothèque Nationale de France, Paris.

the various *capituli*, so that each *capitulum* assumed the appearance of today's paragraphs. Descartes adopted this same presentation for his *Discourse on Method*, which was printed in Holland and constitutes, to the best of my knowledge, the first French text of philosophy printed in modern form.

French typographers slowly conformed to this new layout, which allowed readers to pause regularly and to reflect on each unit of meaning before commencing again.

Subsequently, polemicists in the latter half of the seventeenth century, notably the Jansenists, further enhanced the visualization of their texts, notably by using shorter paragraphs.

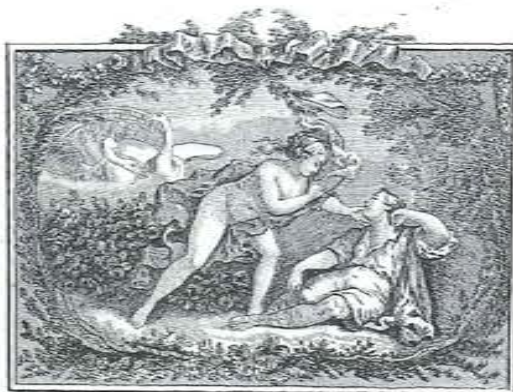
The seventeenth century produced no great engravers of type—French classicism remained faithful to Renaissance typography. At the very end of the century, engravers at the Royal Print Works in France finally produced a "royal typeface" of letters that were "corseted," so to speak, by stronger horizontal bars. Then, during the Regency and early years of Louis XV's reign, skilled artists lent a "rococo" look to the printed page by loading it with ornamental details cast in relief from molten metal (Fig. 15). This period was followed—throughout Europe—by one of simplification, associated with the names of Baskerville in England, Didot in France, and later Bodoni in Italy. The Didot family set the tone by imposing its rigid, geometric typeface (Fig. 16), which emphasized the contrast between thick and thin strokes, giving the page a quasi-military feel perfectly suited to the illustrations that Jacques-Louis David and friends produced for certain grand, classical publications during the early Napoleonic years.

Prosperity during the previous century had nevertheless enabled Enlightenment printers to issue extensive series of documentary tomes such as the *Encyclopédie* and Buffon's *Natural History*, whose texts were illustrated by engraved plates that often held great appeal. At the same time, although on another register—that of pure book lovers—there flourished delightful little volumes with vignettes produced by a galaxy of highly specialized artists. The most famous examples of such books in France were Dorat's *Les Baisers* (Kisses) (Fig. 17) and La Fontaine's *Contes* (Tales).

At the same time, printers were greatly improving the presentation of their books. The existence of intellectual and commercial networks across Europe tended to impose the same style on all, particularly when it came to "philosophical" works. The titles of books, for example, consequently assumed their modern form, notably under the influence of British printers. Finally, the "reading frenzy" that gripped Germany was accompanied by the growing influence of roman typefaces there, halted however by a nationalist reaction during the reign of Napoleon I.

Such progress should nevertheless not disguise the fact that less carefully printed books were being produced throughout Europe. Such was the case notably with so-called chapbooks whose typography could be so hard to decipher that they were seemingly designed not so much to be read as to be re-read by someone who already knew the text perfectly well (Fig. 18).

Puisse à ce prix, trompant sa mere,
 La jeune fille de quinze ans,
 Dans son alcove solitaire
 Méditer ton art dans mes chants,
 Interroger son ame oisive,
 Dévorer l'image expressive
 De l'amoureuse volupté,
 Ne voir que baiser dans ses songes,
 Et soupçonner dans ces mensonges
 Les douceurs de la vérité!



I. BAISER.

LES ROSES,

OU

LA MOISSON DE VÉNUS.

UN JOUR la belle Dionée,
 Dans un de ces bosquets qui couronnent Paphos,
 Fit enlever le fils d'Enée,
 Tandis que le sommeil lui versoit des pavots :

Fig. 17. The book as precious object—pages 60–61, with copperplate engravings after Eisen, from an octavo volume of Dorat's *Les Baisers*, published by Delalain in The Hague and Paris, 1770. Bibliothèque Nationale de France, Paris.

PRINTING AND SOCIETY

Just looking at the books produced during each period is not sufficient to appreciate the impact of the advent of printing. The impressive rise in output sparked by the new craft must also be taken into account. When it comes to incunabula, although reliable statistics in this realm are hard to offer (given all the vanished editions), several hundred thousand early volumes survive, corresponding to 27,000 to 30,000 known editions, which means that a total of fifteen to twenty million books were put on the market in the forty or so years between 1460 and 1500. Book production then increased exponentially in the sixteenth

century, and 200,000 to 300,000 editions have been listed for that period. Growth continued throughout a good part of Europe in the first third of the seventeenth century, despite the ravages of the Thirty Years' War. Subsequently, the decline in Latin publications led to a rupture in the international book trade. Given a climate of recession, formats tended to shrink and booksellers reacted by also lowering the quality of their books. Nevertheless the "good years" of the seventeenth century in France—1640 to 1645 and 1660 to 1670—produced an estimated 2,000 editions. After a period of deep crisis, publication grew once again, first in Germanic countries in the early eighteenth century, then in France starting in 1720. Output would reach dizzying



**Le conseilier qui ne concerne
Son estat & improbite
Et des maux des autres discerne
Par merueilleuse granite;
Est ung grand fol en verite:
Et beche d'ung pourceau la fosse/
Et par apres dedans le pousse.**

Fig. 18. A little moralizing chapbook, just four pages in quarto format, published in France in the late eighteenth century. *La Bête du Gévaudan*, Bibliothèque Nationale de France, Paris.

heights in the years 1770 to 1820, when both Germany and Britain matched and then outstripped France.

Measuring the impact of printing means considering, in addition to the books that have survived, all the countless fliers and other commercial work that occupied some 50 per cent of the presses in eighteenth-century France. This figure was even surpassed in Britain with the advent of advertising.

These increases in output corresponded to a growing number of readers, as witnessed initially and most noticeably by the sale of religious texts, and then by the number of books peddled by traveling colporteurs to rural notables and craftsmen of moderate resources. Reading habits continued to evolve, and it is generally acknowledged that in the late seventeenth—and especially eighteenth—century people shifted from an intensive type of reading (where a small number of books were constantly re-read) to a more extensive one (where novelty tended to be favored).

The profession of writer also changed. For a long time, most new books were written by churchmen, jurists, or authors supported by patrons, a situation that weighed on the choice of literary genre and the inclination of published texts. In the seventeenth and eighteenth centuries, however, the sale of books began providing authors with revenues that became substantial during the Enlightenment, leading to greater independence vis-à-vis the establishment. At the same time, censorship proved ineffective in suppressing subversive texts, though this in no way means that such texts played a determining role in changing attitudes—an issue that remains entirely open.

Despite undeniable progress, the reading public nevertheless remained limited. Initially comprising a highly restricted elite of aristocrats, royal officers, and clergy, this public grew to include, broadly speaking, all men having obtained some sort of schooling, plus the wives and daughters of the privileged. In the eighteenth century, when literacy began to spread and self-taught readers grew in number, readership began to reach wider circles, although it remains to be established what those readers expected and retained from books they read.

THE INDUSTRIAL REVOLUTION AND THE BOOM IN PRINTED PAPER

There can be no question here of covering the whole history of the second Gutenbergian revolution, triggered by a revolution in communications in the nineteenth century.

A simple reminder should do: it all began with a revolution in the manufacture of paper, so essential to a society that was writing more and more, which corresponded to



Fig. 19. A mechanical press in a nineteenth-century printworks. Sketch by Paul Baudouin for a fresco in the Municipal Library in Rouen, France. Oil on wood, Musée des Beaux-Arts, Rouen.

another revolution in imagery sparked by new methods of printmaking. Lithography—whereby drawings or writing are transferred from stone to paper, requiring no special technique—constituted the first modern method of reproducing text and images in multiple quantities, and its rise was linked to the rise of advertising. Then came mechanical presses—printing machines that were more and more productive—and the mechanization of binding. Photo-mechanical processes that made it possible to print photographs alongside text were finally perfected in the late nineteenth century, as were the first automated type-setting machines.

It should be pointed out that this revolution did not initially concern books. In the first two thirds of the nineteenth century, mechanical presses were used above all for

periodicals (Fig. 19), and sometimes for advertising. It was only around 1850 that book production truly began to take off, reaching dizzying figures by the end of the century, at least in terms of the number of publications.

The new technology produced a complete upheaval in intellectual output. During the reign of Louis-Philippe in France in the 1830s, publishers began to assume new power, calling the tune as books were “promoted” to rank of industrial product. Efforts were made to diversify the presentation of books and prices in order to reach the widest possible public. On the level of presentation of text, a new form of standardization arose. Potential readers began turning systematically to the table of contents to grasp the substance of a book, and authors duly offered a more coherent plan of the main ideas—except, of course in

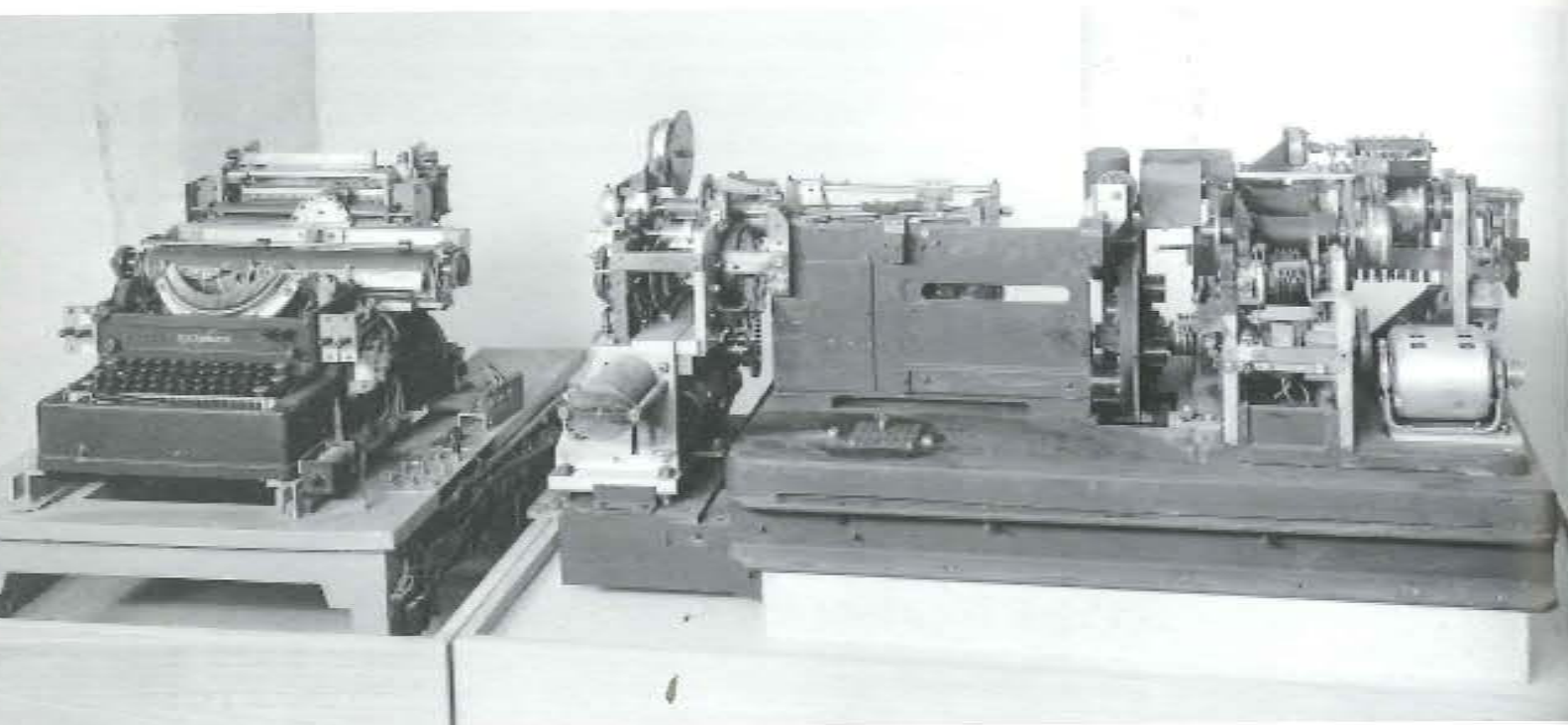


Fig. 20. A prototype of a Lumitype machine. On hitting a key on the typewriter, the corresponding character is photographed through an aperture in a spinning wheel. Today, such machines are governed by computer disks containing the text to be printed. Musée Lyonnais de l'Imprimerie, Lyon.

purely literary works such as novels, which raised different problems. At the same time, typesetters—whose numbers were increasing—had to respect stricter and stricter guidelines. Typographical innovation nevertheless grew apace during the nineteenth century, largely aimed at posters but also influencing the conception of books. Furthermore, the flexibility of new methods of illustration favored a return to imagery that ultimately led to modern comic books. The visual revolution stemming from the industrial, mass-manufacture of books went so far as to trigger numerous reactions from conservatives who, not without good reason, felt that a highly symbolic object was losing its sanctity.

The spread of literacy, the ubiquitous presence of print in society (Fig. 20), and social issues that required reflection all tended to broaden the book-reading public. Types of popular reading material grew in the latter half of the nineteenth century, then seemed to regress in the beginning of the following century during a recession that remains poorly understood. Books were still an elitist object, their reading public not being as large as periodicals, whose print-runs broke all records at the dawn of the twentieth century.

WHAT NOW?

Other articles address the revolution in the manufacture of printed documents in the second half of the twentieth century, the explosion of communications, and the globalization of information.

So from this standpoint, how should we view the future of books, at least in their current form?

Obviously, the recent emergence of worldwide information systems of unlimited power will certainly alter the parameters of the problem and challenge the role of books and traditional printed documents. It should simply be noted that dramatic declarations of the imminent demise of paper have only led—for the moment—to an increase in the latter: one only has to think of the reams of paper churned out by computers, of mailboxes stuffed with advertising, of fliers tossed away unread. Furthermore, in terms of sheer numbers, books have never done so well. Indeed, now being touted as a major advance is the imminent possibility of producing a book at home, with limited equipment, by putting into book form information drawn from the Internet.

As always when it comes to progress, in fact, the threat of overload is more worrying than that of a vacuum.

Conceived as the medium of communication *par excellence*, heir to long and varied experiments and a glorious past, the printed book—a sacred object if ever there were one, where ideas set down on paper offered everyone a chance to think critically and self-reflexively, assuming the mission of helping human thought to perfect itself—only reigned, in fact, during a relatively short period that began with Gutenberg. It took a long while to reach its final form, which distinguished it from oral discourse as far as possible. The Enlightenment represented a high point in that effort, with a final burst during the Romantic era. Already, however, the rise of newspapers announced the decline of the book. The thrust of innovation then shifted to other forms of printed material and new modes of communication that employed word and image to challenge the inventive power of books. Nowadays, Descartes would probably be a telecom engineer charged with designing ever more powerful systems, while Victor Hugo would devote at least part of his time to

making television series. Consequently, today books seem threatened not so much with extinction as with loss of sanctity.

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