The oldest printed indexes

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The oldest printed indexes are found in two editions of St Augustine's *De arte praedicandi*, published respectively by Fust and Schoeffer (the printers of Gutenberg's Bible) in Mainz, and by Mentelin in Strassburg, probably in the early 1460s. Previous research has established Fust's priority, while Mentelin probably copied Fust's edition, including the index. The book's preface specifically mentions the index and explains its use. The index, whose locators refer to paragraphs indicated by letters, contains 230 entries for only 29 pages of text; it has many cross-references and some rotated multi-word entries. In a later advertisement for his books, Schoeffer mentioned the index to Augustine's book as a useful feature. The first dated index appeared in 1468 in *Speculum vitae*, a moral treatise printed by Sweynheym and Pannartz in Rome. This index was also reprinted many times by other early printers.

Indexes to books printed during the incunabula period (from the invention of the art of printing with movable letters by Gutenberg sometime around the middle of the 15th century, until the end of the year 1500) have been the subject of only a few investigations[1-3] and even those considered mainly indexes from the middle and end of the period. The investigators evaluated the indexes and their characteristics largely from a modern point of view, and found that they were for the most part inadequate if not outright misleading as finding aids. But so far, no study seems to have been made to find out when printed indexes made their first appearance, what were their characteristics and qualities, or what role they played in the turbulent days of the beginning of printing, that is, until about the early 1470s.

To understand the use of the epithet 'turbulent' it is necessary to give a thumbnail sketch of the political and craft-related events of those times. Johann Gutenberg, who probably started to work on his invention in Strassburg around 1440, began the printing of his first book, the great 42-line Bible, in his birthplace, Mainz, in 1452. He was financed by Johann Fust, a Mainz lawyer who was initially his partner but later foreclosed on him. He finished the Bible in his own printing shop in 1456 with the aid of Gutenberg's former assistant, Peter Schoeffer, who subsequently became Fust's son-in-law, partner and successor. It was Schoeffer who designed type faces for Fust, invented two-color printing, and advanced the new art both technically and commercially. Another Bible printed by Fust and Schoeffer came off the press in 1462, just as the city of Mainz was sacked in a civil war between two rival archbishops (actually warlords in ecclesiastical garb) both of whom, incidentally, used the printing shop to produce their rival proclamations to the citizenry. Gutenberg fled from Mainz to a nearby town, and the city itself was so devastated by the archbishops' troops that no further printing took place there until 1465. So much for the upheavals on the political scene.

The art of printing, itself a truly revolutionary event, also underwent spectacular changes within the span of a few years. Though initially kept a trade secret in the spirit of the medieval guilds, the training of a growing number of craftsmen in the new technique soon induced some of them to establish their own printing shops, rivalling that of Fust and Schoeffer first in Mainz itself, and soon also in nearby cities. Johann Mentelin (of whom we will have more to say later) opened his shop in Strassburg in 1460, and produced a Bible printed in smaller type than the first one by Gutenberg (and therefore cheaper). Only one year later, Albrecht Pfister began printing in Bamberg. Then came the sack of Mainz, and the flight of most of its printers to safer places in Germany and other countries: Conrad Sweynheym and Arnold Pannartz (whose work we will also consider here) set up their press first in Subiaco, a monastery near Rome, in 1463, then moved to the Eternal City itself in 1467; Ulrich Zell began to print in Cologne in 1465; a year later, Berthold Ruppel set up shop in Basel; and between 1467 and 1470 at least three other German printers began to work in Rome; Günther Zainer became the first printer of Augsburg in 1468, and the brothers Johannes and Wendelin da Spira (of Speyer) opened their shop in Venice which became soon one of the largest centers of printing. By 1470 there were also printers in Nuremberg, Paris, and Utrecht. We have named only the known first printers in each place, but there were many whose names are not known to us (though their books are), and the pioneers were soon followed by dozens of others all over Europe. This rapid spread of printing within a single decade resulted in fierce competition among printers, especially in cities that were close to each other and thus served the same customers. But the early printers vied with each other not only commercially but even more in applying their ingenuity to technical refinements and innovations, both in the actual processes of type design and printing, and in the ways in which they sought to enhance the utility of their products. They tried to attract buyers by providing features that were lacking in the manuscript books which still dominated the market well into the 1480s and beyond. Subject indexes were among the earliest such improvements introduced by printers and scholars, less

than a decade after the first printed book had come off the presses.

The earliest index

Since Fust and Schoeffer were without any doubt the first printers (having finished the work that Gutenberg had started) it is natural to look for the first index among the earliest books printed by them. A certain difficulty lies in the fact that not all books and other printed material from the shop of Fust and Schoeffer (and after 1467 by Schoeffer alone) are dated, but almost all of the undated works or those whose publishing date is uncertain are broadsides or very short pamphlets which in any case would not have needed any index. Among the thirty or so works that came from the joint press before 1467, there is only one that has an index, namely St Augustine's *De arte praedicandi* (On the art of preaching) which is the fourth part of his larger work *De doctrina Christiana*.[4] The book is undated, but from external evidence it is certain only that it must have been printed before March 1467, a dating given in the most authoritative listing of incunabula, the *Gesamtkatalog der Wiegendrucke (GW)* where it is number 2872. Yet the very same work exists also in an edition printed by one of Fust and Schoeffer's earliest competitors, namely Mentelin in Strassburg, and not only in one but in two editions, neither of which is dated. The first one is listed in *GW* as 'um 1466' (based on the fact that one of the existing copies bears a handwritten note by the first or an early owner, dated 1466) and has the number 2871;[5] the second edition (in which a number of misprints found in the first one had been corrected) is listed in *GW* as 'um 1468' and has number 2873.[6]

Leaving aside Mentelin's second edition (which in any case appeared after that of Fust, and could thus not be the very first printed index), we are confronted with the fact that there are not one but two potential candidates for the earliest printed index, and at that of the same work. Since the text and the index are identical in Fust's and in Mentelin's editions one of the two must have been printed from an original manuscript, while the other one was copied from the printed book. Both Fust in Mainz and Mentelin in Strassburg are prominently mentioned in the preface to their respective editions, written by an anonymous editor who was also the indexer. Who, then, was the real first printer of the book with the first printed index?

Robert Proctor, in his *Index to early printed books in the British Museum*, published in 1898, seems to have thought that Fust was the original printer. An undated note on a typewritten card in the copy of Fust's edition held by the Library of Congress even says 'First edition of first book from Fust's press, 1457', but this dating has not been accepted by any other authority and is purely conjectural. Moreover, the editor of the book indicates in his preface that Fust's fame as a printer of books had induced him to submit his manuscript to Fust in order to

have it multiplied for the use of many people. If it had indeed been Fust's first book (that is, after the completion of Gutenberg's Bible) there would have been no others to spread his fame among scholars. The *British Museum catalogue of books printed in the XVth century . . .*, published in 1908, cites arguments both for and against Fust's or Mentelin's priority in the notes to its entries IB 88 and IB 510, though noting Proctor's opinion. As to the *GW*, editions of the same work are there arranged by actual or approximate date, and it would at first sight seem that Mentelin's edition of *c.* 1466 was the earliest, followed by Fust and Schoeffer's edition of early 1467, and then by Mentelin's second edition of *c.* 1468. All of those dates are, however, conjectural and based on circumstantial evidence which was generally assumed to be plausible in 1928 when the third volume of the *GW* was being published.

But Proctor's earlier assumption was carried to the point of almost absolute certainty in a brilliant investigation by Fred W. Householder,[7] in which he showed that Fust must have been the original printer, and that Mentelin copied both the text and the index (though with many mistakes and omissions) while changing the preface to make it fit the format of his index and substituting his name for that of Fust. So far as I know, this finding has not been challenged and may therefore be considered as authoritative. For the present investigation it is of great interest to note that Householder's argument for Fust's priority is based primarily on the index, its peculiar technique of locators, and its execution in print, although there are also other indications in Mentelin's edition which point to the fact that it was almost entirely copied from Fust's book. How Householder arrived at his conclusions we must leave to the interested reader to discover, yet there is one minor quibble which may be worth considering, namely that the title of the article, 'The first pirate', is not quite appropriate.

What Mentelin did would today indeed be considered as an infringement of copyright if not outright piracy, but by the standards of the earliest printers there was nothing unusual or unethical in copying another printer's book. Manuscripts had always been freely copied by anyone who cared to do so, and at the universities there were even commercial enterprises which multiplied books in hundreds of copies for students and teachers.[8] Authors did not receive royalties nor hold copyrights, and St Augustine's works would at any rate have been in the public domain even by modern standards. What was new in Fust's edition was just the index and a summary in diagrammatic form, and though these would certainly be copyrightable today they were not so considered in the early 1460s.[9] What was clearly unethical, however, was the substitution of Mentelin's name for that of Fust as the printer to whom the manuscript had been submitted.

Fust's edition

De arte praedicandi, as its title implies, is a treatise for preachers, explaining in elaborate detail, yet in simple and straightforward language, how best to convey the message of a sermon to an audience, and which techniques to use to gain and to sustain their attention. The work had been well known for a long time among clerics but seems to have been available (at least in Germany) in only a few manuscript copies. It was thus a likely choice for the early printers, who during the first two decades of printing produced (except for some papal bulls and political proclamations on broadsheets) almost exclusively well known works that already existed in manuscript form, and were thus sure to find eager customers for their new form.

The work is a slim book of only 22 leaves in folio, measuring 286 x 204 mm. Leaves 1a–2a are occupied by the preface whose opening lines are printed in red (a technique developed by Schoeffer for his psalter of 1457) but the large initial *C* for which a blank space was left, is written by hand, as are red paragraph signs throughout the text, and red vertical strokes embellishing every initial; names of cities mentioned in the preface and Johann Fust's name are also underlined in red. The book thus still shows significant traces of the practices used in manuscripts, and it was apparently at that time still cheaper and simpler to employ a rubricator rather than to print the paragraph signs and initial strokes in red.[10] The text itself starts on leaf 3a and runs to leaf 17a (i.e. 29 pages), with 41 lines on each page. The index begins on leaf 17b and ends on leaf 20b (7 pages), and is followed by two pages of a summary in diagrammatic form with references to relevant passages of the text, thus actually continuing the index (leaves 21b and 22a).

The entire book is set in the so-called 'Durandus' type, first designed by Schoeffer for a book by that author which he printed in 1459, and subsequently used in most of his books as his regular text type; it is a somewhat rounded gothic, and is much more legible than earlier (and many later) type fonts. The margins (which, as we shall see, played an important role) were quite ample, their width varying from 35 to 40 mm.

The preface

The preface (called a *canon* [proclamation] in the beginning but *prologus* at the end) was ostensibly written by a clergyman who remained anonymous. After having extolled the virtues of Augustine's work and its great utility for preachers, he deplored the fact that existing manuscript copies are corrupt, and declared that he wanted to produce a corrected copy not only for himself but for the use of all who would wish to have the book. 'I have therefore, God be my witness, worked with great diligence toward its correction and have carefully compared all copies which I could find in the libraries of Heidelberg, as well as in Speyer and in Worms, and

finally also in Strassburg.' This last phrase, *atque tandem etiam in argentina*, has been considered as an argument for Mentelin's priority, since he printed in Strassburg. But the editor does not say 'tandem *hic* etiam in argentina', although his Latin style is otherwise rather flowery, and he tends to use and repeat many adjectives and adverbs to emphasize his points throughout the preface. The phrase may just mean that his search for copies of Augustine's book ended finally in one of the libraries of Strassburg. It does not necessarily imply that he finished the work of editing and indexing there, nor that the manuscript was then printed in the same city (although Mentelin's preface states this to be the case).

The editor goes on to say that he found it difficult even to obtain access to the manuscripts in libraries in order to copy them, and that they were all in need of correction and emendation. When he finally completed his labors of editing (and indexing, as is made clear a few paragraphs further down) he decided to submit the manuscript to 'discreto viro Johanni Fust incole maguntinensi impressorie artis magistro'* (the distinguished gentleman, Johann Fust, inhabitant of Mainz, master of the art of printing) whom he persuaded 'by all means' to print the book so that it could be of use for 'sacerdotes seculares vel religiosi' (secular and regular clergy) who had heard of its praise and fame (the implication being that they knew of it but could not easily get hold of it). He then draws the attention of prospective buyers to the fact that the printed edition is vastly superior to any manuscript copy of the same work

> because, first, scarcely will they [i.e. the buyers] be able in any other way to have it better corrected than from the selfsame craftsman [i.e. Fust] for the reason set forth earlier. Second, and not less [important], in this one they will have in the back of the little book a most extensive alphabetical index which has been compiled with great care. And furthermore, third, after the index, there are two figures comprising the principal matter of the book in summary, arranged in the best manner, and with sufficient cross references. The index and figures of that book are indeed alone worth the whole price, because they make it much easier to use. . . . And furthermore, having those [i.e. the index and figures] with the said little book, they will benefit mightily from the many labors I have bestowed on it during a long time.

Although it is quite plausible that the editing of the manuscript which served as the exemplar for the printed edition was the work of a learned cleric, he may have written only the first two pages of the preface, while the last page, which praises the advantages of the printed book as compared to manuscripts, and explains how to use the index, may well have come from the pen of the printer.

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*All Latin quotations are given in standardized spelling and all contractions are spelled out in full.

Significantly, Mentelin's edition follows the text of the preface almost exactly in the first two pages but introduces considerable changes in the 'technical' part of the preface: not only is Mentelin's name substituted for that of Fust, and Strassburg for Mainz, but the substantially different typographical layout of the text which affected, as we shall see, the index, made it necessary for Mentelin to change that part of the preface.

The anonymity of the editor and indexer is puzzling, because at that time many editors of ancient manuscripts were proud to sign their names in a colophon or in a preface, and no longer hid behind pious monastic anonymity. But there is no clue to the person of the editor, and we can only note that, then as now, only seldom is credit given to the compiler of an index.

The index

Although the editor was eager to point out that the compilation of the index was the fruit of his own labors over a long period, it was by no means an innovation. It is quite obvious from various features of the index that this first printed one continued practices that had been in use for quite a while. It has often been claimed that indexes could not have been compiled for manuscript books because no two of them were exactly alike, due to different writing styles, idiosyncratic use of abbreviations, scribal errors in copying, and the lack of page or folio numbers; the latter, by the way were also lacking in most incunabula, and did not come into use at all before 1470. But very elaborate handwritten indexes are found in some incunabula down to the end of the period and beyond. These were compiled by the owners of those books who often added foliation in handwriting in order to use the folio numbers as locators. The size and sophistication of these indexes (some of which contain thousands of entries) point to a long-standing tradition of indexing. Indexes to manuscripts could indeed not refer to leaves or pages, but they employed other locator techniques: since the text of many theological, philosophical, medical or legal treatises had become fairly standardized by division into chapters and (often numbered) paragraphs, reference was made to those, thus rendering the index locators independent of pagination. This had two advantages: first, an index, once made, could be reused in other copies of a manuscript of the same text, and later in different editions of the same printed text; second, the index could be compiled at leisure from the manuscript that served as the printer's exemplar, and the indexer was not under pressure from the printer to finish the index quickly after the last page of the text had been set in type. It was only in the last decade of the 15th century that indexes began to refer to folio numbers, and these show all the signs of having been compiled in great haste.[11] Thus, it was not only Mentelin who without any scruples copied both text and index of what had first been printed by Fust, but throughout the incunabula period and well beyond,

printers of popular works copied also their indexes as long as these referred to the same chapters and paragraphs.

As an aid to easy reference, paragraphs were often marked in the margins by letters of the alphabet which served as more precise locators to which the index referred. Some indexers went even further and indicated where a subject was treated within a certain numbered or lettered paragraph—at the beginning, in the middle, or towards the end. (Modern readers might sometimes wish that a locator to a large and closely printed page would give such further hints to the exact location of a word or name.) This latter method was also used by our anonymous indexer, possibly aided by Fust who, as a lawyer, had probably compiled his own personal indexes to law books, and who was well aware that even a 'little book', if full of bits and pieces of widely dispersed but closely related information, needed a good and comprehensive index, complete with cross-references. The ratio of seven pages of index with 230 entries to 29 pages of text, or eight entries per page, is indeed more than generous even by modern standards.

The indexer divided Augustine's text into 80 paragraphs which were indented, marked by red paragraph signs and indicated by a sequence of single and double letters, set out in the inner margins opposite the first line of each paragraph (see figure 1). The first 25 paragraphs are marked A-Z, τ , $\Im$; that is, Fust used all letters of the Latin alphabet plus the abbreviations for *et* and *con*; the next 24 paragraphs were marked *AB-A$\Im$*; another 23 paragraphs were marked *BC-B$\Im$*; and the final eight paragraphs were marked *CD-CL*. Note that, for unknown reasons, the letters used as the first ones in a sequence were not repeated as second letters in the next one, thus, there is no *AA*, *BA* and *BB*, and no *CA*, *CB* and *CC*. Why was the much simpler method of numbering not employed? There may be several reasons. First, most chapters and paragraphs in manuscripts were numbered by Roman numerals (though Arabic numerals had been known in Western Europe at least since the 12th century, and were then in common use for mathematical and astronomical tables). Yet, numbers written in Roman are of varying length, and even low ones may become quite long; e.g., the number 38 must be written with seven letters (XXXVIII). Providing extra space in the inner margins while keeping the edges of the type area straight was a technical innovation not easily accomplished (and therefore not copied by Mentelin). Perhaps Schoeffer, to whom most of the early technical printing devices were due, may have found it at first difficult enough to set two letters in the inner margins, while setting indicators varying in length from one up to seven letters may have posed too much of a technical problem. The two-letter system, on the other hand, took up only a fixed length, and could be used for several hundred paragraphs, if necessary. In the last section of the preface the system is explained to readers:

Figure 1. A page spread showing the position of paragraph indicators in the inner margins. The left page has the four last indicators of the *A* series, the right page has the first two indicators of the *B* series, *BC* and *BD* (*BA* and *BB* not being used).

Everybody should also know that the alphabetic letters, both singles and doubles, set out in the inner margins, serve the said index of the book which refers to the very same letters for individual points [i.e. topics], so that everybody who wants to find quickly something that is contained in this little book can find it, and not least also by means of various and many cross-references (*remissiones*) it will be revealed what is sometimes contained in the diverse passages of this little book at those points, which will prove to be most fruitful for those who wish to study the book. End of prologue.

Thus, while indexers already then provided quite sophisticated finding aids, users had to be made aware of them and had to be instructed in their proper use, as is the case even in our own time.

As was usual throughout the incunabula period and long thereafter, entries were alphabetized not by all letters of a word but only by their first syllable, sometimes two, occasionally three letters long; the rest of the letters of a word not being considered for sorting (see figure 2). Readers apparently did not consider this to be a hindrance in finding particular entries. Since there were only relatively few entries on a page, it was perhaps really not too time-consuming to find a required name or item as long as one knew the first syllable.

The index entries were given as phrases, beginning with catchwords taken more or less verbatim from the text, as was the custom in late medieval indexes. But they also had some features that were remarkable for their degree of sophistication, not often found in later incunabula indexes. The very first entry reads in translation: 'It excites the minds of the listeners to speak and recite with ardor. Revealed under the letters *Z*, before the middle; AR, at the end and BR.' (The capital letters of the locators are sometimes difficult to read in the illustration because in the original, as mentioned above, all capital letters at the beginning of a line and in the locators are embellished by vertical strokes in red which show up as black lines in the reproduction, and tend to blur the image of the letters.) The words 'patent sub litteris' (revealed under the letters) appear only in the first entry; in the following entries, the user is supposed to have learned the method from the first entry. The next

entry reads: 'Assent by listeners after the sermon, used to be done formerly, BQ towards the end; BR about in the middle; BV about in the middle and towards the end.' In line 7 there is a cross-reference: 'Alternation of voice in recitation: below, Variety of speaking.'

Occasionally, the words of an index phrase* are rotated so as to provide access from every listed concept. For example, *Auditorum benivolentia* [sic] *captanda est* (Listeners' goodwill must be gained [literally, 'caught']) is followed only two lines further down by *Benivolentie auditorum captatio* (Goodwill of listeners, gaining of), and five lines later *Captatio benivolentie auditorum* (Gaining of listeners' goodwill). Note that the rotation of entry words is always so performed as to result in a grammatically correct sentence; i.e., the case endings change as needed, and the verb form *captanda est* in the first entry becomes *captatio* (a noun) in the other entries. An early forerunner of PRECIS indexing?

Some entries have run-on subheadings with 'see' references, as in the third entry (*Agenda a fidelibus*, etc.) 'What is to be done by the faithful is not only to be taught but one ought to move and influence the listeners themselves towards such actions: below, under the terms influencing, moving listeners.' And on a related topic, in the eleventh entry (*Auditores quomodo*, etc.) 'Listeners, how to teach them: below, to teach; how to delight them: below, to delight; how to influence them: below, to influence, to move.' Another instance of multiple access entries is found under *Dicendi modus delectat* and *Dicendi modus flectit* both of which (as well as some others) can also be found at *Modus dicendi accendit, delectat, flectit et movet, ut patet in eiusdem terminis iam nominatis et supra, dicendi modus* (The way of speaking excites, delights, influences, and moves, as revealed under those terms already named, and above at Way of speaking).

The summaries

On the last two pages the salient points of the treatise are summarized in what the preface calls *figurae* because the sentences and paragraphs are linked to each other by (hand-drawn) red lines indicating relationships. These summaries are actually extensions of the index; the first one, 'On the three foremost duties of the preacher', epitomizes the passages in which that subject was treated, indicating the relevant paragraph letters, exactly as in the index. To make sure that readers would not overlook the more elaborate index, the following note appeared at the foot of the page: 'Note, however, that whatever of any point is not found in the place of one cross-reference quite fully or sufficiently, may also be found in one or more other places, as also individual points are collected or subsumed more adequately under that point.' The second figure, 'On the three kinds of

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*Here given in their original spelling.

oratorical style' and 'On the three ways of speaking', does the same for those topics. At the end of that page there is a similar note referring the reader to the index: 'Even more on those three kinds see in the index of the book under the letters of their terms, where you will find the varieties of *Submissum, Temperatum* and *Grande*, etc.' Turning to the index, one finds that the first and second terms have six entries each, while the third term, *grande*, is the beginning word of as many as 16 entries, all with multiple and different locators.

Mentelin's edition

Augustine's work, as printed by Mentelin, is typographically inferior to that of Fust. It has no red printing, the type face is less legible, paragraphs are not indented, some words and phrases have been omitted, and there are many printer's errors. All this, however, does not provide any clues for assigning priority, because Mentelin's deficient printing could have preceded a better one by Fust. But, as mentioned above, Householder's investigation of the two editions established the priority of Fust almost beyond any doubt on other grounds, especially by a comparison of the indexes. In Mentelin's index there are five typographical mistakes and a dozen entries are omitted, either by oversight, or because a paragraph indicator had by mistake been moved to the wrong line in the text, whereupon the relevant index entry in Fust's edition would no longer fit and was simply left out by Mentelin. Two other major features made Mentelin's edition different from that of Fust. One was the omission of the alphabetical paragraph indicators in the inner margins. Mentelin was apparently unable to copy this typographical feature with the equipment he had, whereas Fust and Schoeffer had designed a forme that allowed them to keep the inner edges of the type area almost straight while at the same time leaving room in the margins for the indicator letters. Mentelin therefore resorted to printing the indicator letters in the text itself, in front of the first letter of the relevant paragraph, where they were difficult to find, because the paragraphs were not indented but printed in one unbroken sequence. In his preface he had therefore to call attention to the fact that

capital letters of the alphabet, singles and doubles, set between the margins [i.e. inside the type area] immediately before the initial capital letters of noteworthy points, will serve this little book's alphabetical index at the end, which index refers to those same letters for each single point. And whoever so desires will easily be able by his own hand to put them in the margins with a pen in black or red color, corresponding to those put between the letters, which will be quite useful because they will more readily occur to the searcher if put in the margin. And so by the cross references of the index to those selfsame letters, whatever is contained in this little book will be found quickly by him who wishes to retrieve it

ccendit auditoҙ mentes · ardenter dicē fiue ꝓnūciare · paſ
ret ſub litteris⸗ · ante mediū · A ꝶ · m fine · et · b ꝶ ·
Acclamatio auditoҙ · ſub ſermone olim fieri ſolita · b Q · verſus fi
nem · b ꝶ · circa mediū · b � · circa mediū et verſus finem ·
Agēda a fidelibȝ · nō ſolū docēda ſūt · ſ̓ optȝ etiā iꝓos auditores ad
huioi agēda moné et flectē · infra in tnis · flectē · moué · auditores ·
Alternatio vocis in pronūciando · infra varietas dicendi ·
Alternatio variatio ac permixtio trīū generū dicendi · b O · b p ·
· b Q · per totum ·
Ambonis magna dignitas ⁊ auctoritas · C D · circa medium ·
Animam ad deum leuare debet predicans anteᷘ incipiat dicē fiue
pronūciare · A ꝶ · C ꝗ ·
Arduum eſt opus et officium predicatiomis · A p · in medio · A ꝶ ·
ante medium ·
Ardenter dicere vel pronūciare · mentes accendit auditorū · hic
ſupra accendit · infra pronūciatio ·
Ars predicandi ſtudiū · non eſt negligendum · A ꝲ · A ꝳ · A ꝶ ·
per totum
Auditores quomodo ſint docendi · infra docere · quomó delectandi
infra delectare · quomodo flectendi infra flectere · mouere ·
Audiendi ſunt etiam · male vite predicatores · b ꝫ · C D ·
Auditorum beniuolentia captanda eſt · C · D ·
Auxilium diuinum implorandum eſt · ꝗ · C ꝗ ·
   beniuolentie auditorum captatio · C · D ·
bona vita predicantis · pre cunctis alijs plus mouet · b ꝫ ·
bone vite predicatores · C G ·
   Cathedra eccleſiaſtice doctrine · quante ſit auctoritatis · C D ·
Cathedra eccleſiaſtica · cogit in ea docentem · bona docere · C D ·
Captatio beniuolentie auditorum · C · D ·
Ceſa quid ſint · D · poſt medium
Circuitus quid ſit · D · poſt medium ·
Clare valde debet loqui predicans · ut poſſit etiam a rudibus intel⸗
ligi⸗ꝫ · A D · A C ·
Climax quid ſit · D · ante medium ·
Clauſule nūoſe · diuio eloquio dehūt · A ꝰ · an mediū · et · A⸗ · in fine ·
Cogitata inculcanda non ſuut · A D · ante medium ·
Coloes ⁊ ornamta ethoise artis · in ſacs ſcptūris ec inueiunꝰ · ꝶ · D ·
Cola ſiue colon quid ſint · D · poſt medium ·
Commotio animi auditorum · que per grande genus fit · non eſt
diu continuanda · b D · circa medium ·
Commotio animoҙū · fit per grande genus · D · in fine · A f · in fine ·

Figure 2.   The first page of the index to St Augustine's *De arte praedicandi*, printed by Fust & Schoeffer,
c. 1466 (leaf 17b). The large initial *A* and vertical red strokes in all capital letters in the original are
handwritten.

Here, by the way, Mentelin's preface ends somewhat abruptly, even without a final full stop.

Thus, what Fust had readily provided for his readers—paragraph indicators clearly set out in the margins and rubricated in the text by his own craftsmen—Mentelin could only recommend to his readers to do for themselves if they 'so desired', and he had to admit as much in his preface.

The other features missing in Mentelin's edition were the two *figurae* on the last two pages of Fust's edition which he (for unknown reasons) did not copy, although the text at least did not pose any technical difficulties. Schoeffer, however, attached great importance to those two pages.

Schoeffer's advertisement

Around the beginning of 1470, Schoeffer (by then the sole proprietor of the firm) published a list of books he had for sale; it is the oldest such advertisement or catalog that has come down to us (see figure 3). It was accidentally discovered, pasted into a manuscript that had been the property of the famous scholar Hartmann Schedel, the compiler and probably also the indexer of the *Nuremberg Chronicle* of 1493.

The advertisement listed 21 books, all published since 1458 (though three of them are not known as Schoeffer imprints and may only have been sold by him). It was intended to be posted at markets and book fairs by itinerant salesmen, as is obvious from the opening lines:

Those wishing to obtain the books listed below which have been corrected with great care and have been printed in Mainz with these same letters, and well finished, may come to the dwelling place indicated below.

A handwritten note (not reproduced here) at the bottom announces that the salesman may be found at the Wild Man Inn. The Augustine edition is the only one among the 21 titles which mentions the index and the diagrams as a special feature (line 5 of the list):

Item, Augustini de doctrina Christiana, cum tabula notabili praedicantibus multum proficua. (Also, Augustinus' On Christian instruction, with a noteworthy table, very useful for preachers.)

Since Fust's preface refers to the index as a *tabula*, while calling the diagrams *figurae*, it would seem that the reference in Schoeffer's list is to the index as an especially useful feature, but the advertisement appeared at a time when Mentelin had brought out two rival editions, neither of which contained the diagrams, so that the reference may also be to those 'very useful' summaries of the book's contents in tabular form which were not offered by Schoeffer's competitor.

In later advertisements for other books Schoeffer repeatedly pointed out that his books were better edited and proofread, and more logically arranged, than those printed by his competitors. But except for the single work considered here, none of the other books printed by Fust and Schoeffer, until the former's death in 1466, had an index, although some of them were massive theological treatises and compendia of canon law which would have needed indexes quite as much as Augustine's brief work did. Schoeffer did, however, publish at least five indexed books between 1473 and 1485, the last one in German in the *Gart der Gesundheit*.[12]

Unsolved questions

Apart from the incontrovertible fact that the first printed editions of Augustine's work included the first printed indexes, these books pose a number of questions, none of which can be answered definitively and unequivocally.

- Why was just this work chosen for a detailed subject index?
- Who was the editor and indexer?
- Why did he not reveal his name?
- Were Fust and Schoeffer or Mentelin the original printers; that is, who copied from whom?
- What are the dates of publication of the three editions?
- Why did Mentelin not print the two 'figures' at the end of the book?
- Why did Mentelin not print the paragraph indicators in the inner margins?

Although an attempt has been made here to provide plausible answers to at least some of these questions, they are puzzles which are likely to remain unsolved.

The first dated index

Shortly after the Augustine's index, whose exact dating is still unknown, the first dated index appeared in the *editio princeps* of *Speculum vitae*,[13] a moral treatise discussing the advantages and merits as well as the disadvantages and perils of various professions from king to shepherd, written by the Spanish bishop Rodrigo de Zamora (Rodericus Sancius Zamorensis, 1404–1470), and printed by Sweynheym and Pannartz in Rome as their fifth publication in 1468. The book has 300 large pages (287 x 200 mm), 292 of which contain the preface, table of contents and text, and only six and a half pages (leaves 147a–150b) of index. The latter had probably been compiled for one of the manuscript editions that preceded the printed one. It is printed after the colophon, and is introduced by the words 'Incipit repertorium sive tabula per alphabetum ad faciliter recipiendas materias in presenti libro dicto Speculum vitae humanae' (Here begins the repertory or alphabetical table for easily finding subjects in the present book called The mirror of human life); it ends with a similar 'Explicit tabula sive repertorium,' etc. At that time, there was as yet no conventional Latin term for an index, though

tabula became the term most often used during the 15th century and thereafter.

The index contains an average of 15 entries per page, and a total of 102 entries, a rather poor allowance for such a large book. Most entries begin with a keyword from the text, followed by an elaboration indicating the context (a method, it should be remembered, followed almost unchanged in subsequent centuries and down to our own time):

Agriculturae laudes, necessitas & utilitas & de eius commendatione, libro primo, c. xxi.

Agriculturae incommoda, afflictiones & labores, li. p. c. xxii.

(Here the locator 'libro primo' has been abbreviated to make the entry fit onto just one line of print.) But some entries are terse and consist just of the keyword, as in a modern index, e.g.

Ambitio. Libro primo, c. xli.

There are also some cross-references, such as

Artes mechanicae, infra in verbo mechanica

which leads to

Mechanicarum artium laudes . . . libro primo, c. xxiii et sequenti.

Other cross-references are more wordy:

Ludi quae sint liciti aut illiciti vide infra in verbo theatrica

which refers to

Theatricae artis & omnium ludorum illusiones, labores et pericula, libro primo, c. xxxi.

Alphabetization is by first syllable, and each group of entries beginning with the same letter is indicated by a large capital letter from *A* to *V* (there being no entries beginning with *X, Y,* or *Z*). Each entry is preceded by alternate red and blue paragraph marks drawn by the hand of a rubricator—another hint at the manuscript origin of the index, the graphic embellishments of which were emulated in the printed version.

According to their own account, Sweynheym and Pannartz printed only 300 copies of this book at 16 grossi each (about $9.00 at present silver value but worth much more then). Demand for the book must have been high, for it was soon reprinted by Günther Zainer in Augsburg.[14] He also copied the index, which he concluded with the words, 'This is the happy and welcome end of the brief alphabetical table or repertory of the present book!'. Thereafter, several other printers of this bestseller produced ten more Latin editions, all including the same index at the end, except one which had the index at the beginning of the book. One French, one Spanish, and three German translations also appeared before 1500, but these did not have indexes. Thus, once an index had been compiled and published, it

was eagerly seized and appropriated by the early printers, but translators did not yet produce their own indexes.

Sweynheym and Pannartz, incidentally, did not print any more books with indexes, whereas Mentelin published four other books with indexes between 1468 and 1478, two of which went through several editions. More indexes began to be compiled in the mid-1470s, possibly because by then there was a glut of printed books on the market, leading to fierce competition among printers

Figure 3. Peter Schoeffer's advertisement for his books, *c.* 1470. The first paragraph in translation: 'Those who wish to purchase for themselves the books listed below, which have been edited with greatest care and which have been printed with the selfsame letters in Mainz, and have been well finished, may come to the dwelling place written below.' The type of this ad is the 'Durandus', but in fact not all the books listed are printed in this type. Perhaps for this reason, the last line says 'This is the letter [i.e. type] of the Psalter'. The arrow indicates the first line of the listing of St Augustine's book.

who vied with each other to make their products more attractive to prospective buyers. From then on, the number of indexed incunabula increased steadily, but the quality of these indexes varied considerably, and only a few of them reached the level of sophistication of the first printed index.

Conclusion

At least two subject indexes appeared already in the 1460s, certainly not later than 1466 and probably even much earlier. This enhancement of printed books thus preceded such other typographical features as a list of gatherings, and lists of first words at the top of the first leaf of a gathering (often included as another *tabula* at the end of a book), both of which made their appearance for the first time in 1469; catchwords at the foot of a page, first used in 1470; page numbers (and in Arabic numerals at that), also first seen in 1470; the first musical notes (1473), and the first complete title page (1476).

Not only were these the earliest printed indexes, but the very first one shows a degree of sophistication in the provision of cross-references, rotated access points, and exact indication of items in the text that was seldom attained in later indexes of incunabula and 16th-century books.

*   *   *

Notes and References

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4. Augustinus, Aurelius. *De arte praedicandi* (*De doctrina Christiana, liber 4*). Mainz: Johann Fust and Peter Schoeffer, before March 1467. 22 leaves. Folio. GW 2872. Goff A-1227. H 1957.
5. [*The same.*] Strassburg: Johann Mentelin, c. 1466. 22 leaves. Folio. GW 2871. Goff A-1226. H 1956.
6. [*The same.*] Strassburg: Johann Mentelin, c. 1468. 22 leaves. Folio. GW 2873. Goff A-1228. H 1955.
7. Householder, Fred W. The first pirate. *The Library* 4th series, 24 (1943), 30-46.
8. Lehmann-Haupt, Hellmut. *Peter Schoeffer of Gernsheim and Mainz* . . . Rochester, NY: L. Hart, 1950, p. 91.
9. The first exclusive privilege to print books, not to be reprinted by anyone for five years, was granted in 1469 to Johannes and Wendelin da Spira [of Speyer], significantly enough in Venice, a city well aware of the value of commercial privileges.
10. Almost all books from Schoeffer's press published between 1467 and 1478 have handwritten paragraph marks and rubricated initials. Until 1477 they are mostly in alternating red and blue, and until 1478 almost entirely in red only, but around 1480 handwritten embellishments disappear from Schoeffer's books, and typeset paragraph marks take their place. Thus, some thirty years after the invention of printing, rubricators seem to have been largely out of a job as far as printed books were concerned.
11. The shortcomings of the index to Schedel's *Nuremberg Chronicle* which refers to folio numbers (critically discussed by Witty, see ref. 1) are probably due to hasty compilation.
12. Schoeffer printed about one hundred more works between 1485 and his death in 1503 but these were psalters, missals and a large number of indulgences, political proclamations, and ordinances, none of which needed an index. The German index was discussed by me in 'Early multilingual and multiscript indexes in herbals', *The Indexer* 11 (2) (Oct. 1978), 81-102.
13. Rodericus Zamorensis. *Speculum vitae humanae.* Rome: Sweynheym and Pannartz, 1468. 150 leaves. Folio. Goff R-214. HC 13939.
14. [*The same.*] Augsburg: Günther Zainer, 1471. 129 leaves. Folio. Goff R-215. HC 13940.

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Indexing by form

A reader reminisces: 'My first experience of indexing was at the age of about ten when my form at school was asked to assist one of our masters, Arnold Fellows, in the index to his book, *The wayfarer's companion*, published by OUP (but now out of print). We had to write out various references on small cards which were then shuffled into alphabetical order to form a card index. I remember at the time thinking how clever this was. In the preface Mr Fellows wrote that for help with the index he was indebted to some young friends who would recognize their identity under the initials L.M. These stood for Lower Middle, the name of our form.'