
Designing the Space of Linguistic Knowledge: A Typographic Analysis of Sixteenth-Century Dictionaries

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ABSTRACT

Scrutinizing the ways in which early printed reference works were designed is a way of bringing typography and book history into the domain of library and information science. The core subject of this discipline is the concept of user-oriented organization of knowledge; it has a close connection to information-seeking behavior and retrieval. By studying the typographic arrangement of knowledge in early printed reference works, one can approach the history of the storage, organization, and retrieval of scientific information. The article discusses the typographic “architecture” of the dictionaries published by the Antwerp printer Christophe Plantin and, more specifically, the three dictionaries of the Dutch language compiled by Plantin’s learned proofreader Cornelis Kiliaan (ca. 1530–1607). Kiliaan was one of the first authors to introduce etymology and comparative linguistics into his dictionaries. By analyzing the typographic macrostructures and microstructures of his works, it is possible to discover the lines along which they developed—in the words of Paul Valéry—into *machines à savoir*. The article also compares Plantin’s dictionaries with the international benchmark for lexicographic publishing in the Renaissance world, viz. the translation dictionaries compiled and printed by the Parisian publisher Robert Estienne.

INTRODUCTION

There are undeniable analogies between knowledge and the spaces where it is stored to be retrieved by current and future users. This is obvious for library buildings, which often reflect systems of information storage and can therefore be approached as representations of knowledge. In this particular context, however, it would be a mistake to limit the concept of space to its architectural dimension. Indeed, one of the most effective

“spaces” in which knowledge has been stored and organized during almost six centuries is the two-dimensional space of the printed page or, to be more precise (as printing is intrinsically linked to a collection of paper quires known as the codex), the three-dimensional space of the printed book. It is no coincidence that typography and book design are often referred to by using architectural metaphors. Before books can be printed and placed at the disposal of the reading public, they have to be designed by typographers or “book architects.” The structure of a book and the ways in which this structure is made visible through chapters and paragraphs, variations in the type area or in type and type size, is then called “the architecture of the book.”¹ It comes as no surprise that prominent architects had an uncommon interest in typography (De Smet, 2007).

In his short essay “Les deux Vertus d’un Livre,” the French poet Paul Valéry wrote, “En résumé, un beau livre est sur toute chose une parfaite *machine à lire*” (1960, p. 1249). Today, this idea of a book as a reading device is not so surprising anymore. Valéry, however, developed it well before the coming of the e-book, and, clearly, he was pointing to the fact that to produce an effective reading, a book has to be well designed, with appropriate type, a good layout, and a clear impression on proper paper. When characterizing beautiful books as *machines à lire*, Valéry may have had novels, poetry, or essays in mind. It could prove to be interesting to extend his expression to reference works and to investigate how typographical tools served the goal of developing books into “parfaites machines à *savoir*”—*knowledge* devices. Here, this enquiry is applied to a type of book that requires guidance to produce an effective transfer of knowledge: dictionaries or, more specifically, dictionaries produced in one of the most renowned printing houses of the European Renaissance, the *Officina Plantiniana* in sixteenth-century Antwerp.

Scrutinizing the typographic design of early printed reference works is a way of bringing both typography and book history into the domain of library and information science. The core subject of the latter field is the concept of knowledge organization—more precisely, “the user-oriented organization of knowledge and the close connection of the field to information seeking behaviour and retrieval” (Lørring, 2004).² The study of the typographic arrangement of knowledge in early printed reference works is one of the many ways in which these phenomena can be approached. Book history can show how the look-up features of early printed books evolved and how innovations gradually entered a world that was dominated by traditions, some going back to the world of the manuscript book (Delsaerd, 2008).³

This approach can benefit from recent trends in the history of the printed book. During the past few decades, authors studying the processes of book production have become gradually more interested in the links that tie the printed word to the reader. They have pointed out that

the overall look and feel of the printed book tell a great deal about the intended public of readers. The layout of the title page, the type family and size, the width of the printed lines: all these elements were objects of design decisions by the printer, and they were determined by the profile, the taste, the expectations, and the reading capacity of the public (Martin, 2000; Charon, Diu, & Parinet, 2004). More recently, researchers have stressed that the formal features of printed books are also to be considered as a kind of code that forces the reader to use the book in a particular way. In an inspiring volume, this phenomenon has been called *Erkenntnissteuerung*—controlling or regulating knowledge (Enenkel & Neuber, 2005, pp. 1–5).⁴

One might object that these assumptions lack a sense of reality and that they underestimate the force of chance and tradition in the daily routine of composing and printing. Nonetheless, it may be useful to approach typographic design as a strategy addressing a predefined set of readers and implying a particular way of reading. The present article is an attempt to contribute to this approach by examining some dictionaries of the Dutch language published in the second half of the sixteenth century by the Antwerp printers Christophe Plantin and his son-in-law Joannes Moretus and by comparing them to the lexicographical work produced by the Paris master in the field, Robert Estienne. This choice of dictionaries, and, more precisely, dictionaries published by the *Officina Plantiniana*, deserves an explanation.

DICTIONARIES

Dictionaries are perhaps the clearest examples of books that are not designed to be read in a linear way, from A to Z, but instead to be consulted again and again in a sequence that is determined by the user who is looking for a definition or a translation or for the pronunciation or the spelling of a particular word. As a consequence, dictionaries include an uncommon stress on search facilities; their design should facilitate repeated retrieval processes (Blair, 2010, pp. 121–124). The “reader,” or user, of dictionaries is interested in four major features: reliability, comprehensiveness, efficient look-up, and clear presentation of each entry. The former two qualities depend on the compiler of the dictionary; the latter are achieved by the person who determines the finding tools and who decides on the presentation of the entries. In his article on the typography of English dictionaries through history, Paul Luna, the designer of the *Oxford English Dictionary*, stated that “developments in typographic presentation were regarded as significant by lexicographers” and that this field of publishing has always been, and remains, one “where typographic presentation is certainly not seen as accidental by the author” (Luna, 2000, p. 5). The typographic arrangement of dictionaries is not informal at all: it has a strong relation to the lexicographic ambitions of their compilers

and to the publisher's intention and ability to optimize presentation and retrieval—in other words, his ability to arrange the space of linguistic knowledge so as to guide the reader in his search for a definition or a translation.

Plantin, the French emigrant who settled in Antwerp around 1555, has always been regarded as a master of typography. He did not limit himself to the fonts he could buy on the local Antwerp market and turned to the best type designers and punch-cutters of his time: Claude Garamont for roman types, Robert Granjon for italics, Guillaume Le Bé for Hebrew, and Hendrik van den Keere for black-letter (Van den Eede, 2004). He bought their punches and matrices and had the letters cast by Antwerp typefoundries. His concern with typographical quality and proper layout was legendary, and he produced some of Europe's masterpieces of book design, such as the well-known *Biblia Polyglotta* (1573), an eight-volume Bible edition presenting various versions of the Bible text in a "comparative" layout of parallel columns set in Latin, Greek, Hebrew, and Aramaic type (Lubell, 2010).

During his long career, and clearly inspired by the French printer and humanist lexicographer Estienne, Plantin published different books with a lexicographic character. They bore titles such as *Vocabulaire François-flameng* (by the Antwerp schoolmaster Gabriel Meurier, 1557); *Dictionarium Tetraglotton* (anonymous, 1562); *Nomenclator Omnium Rerum* (by Hadrianus Junius, 1567); and *Thesaurus Theutonicae Linguae* (anonymous, 1573). The most renowned of them, however, were compiled by Cornelis Kiliaan, who worked with Plantin as a compositor, printer, and proofreader. If it is true that the field of lexicographic publishing is one in which typographic presentation was not seen as accidental by the author, this must all the more be true when the author himself was professionally involved with every element of book production (except bookbinding). As we will see, Kiliaan produced no less than three dictionaries under his name during his tenure at the *Officina Plantiniana*. An analysis of these three editions shows how he gradually attempted not only to express a wider range of information but also to enhance the presentation and the look-up features as his dictionaries grew more complex. This brings me to the central questions of this investigation. How were these dictionaries designed? How did Kiliaan and his printers use and structure the "space" of the codex for the benefit of linguistic information retrieval? And what is there to be said about the *Erkenntnissteuerung*, about the way the author wanted his dictionary to be used?

CORNELIS KILIAAN AND HIS DICTIONARIES

Kiliaan (Van Kiel, Kilianus) was born around 1530 at Duffel, a town in Brabant (currently a part of Belgium) situated between Mechlin and Antwerp (Van den Branden, Cockx-Indestege, & Sillis, 1978; Van Rossem,

2007). He probably studied at the University of Leuven and entered into Plantin's service in or before 1558, initially as a compositor and a printer, then as a foreman in charge of the printing material (March 1558), and finally, from 1565 on, as a *corrector*, or proofreader. Apart from the years 1574–1582, during which he worked as a translator for the secret service of the States of Brabant and the States General, Kiliaan was mainly working for and living with Plantin and his son-in-law and successor Moretus in their mansion at Antwerp's Friday Market. He died there in 1607, but his spirit is still present in the Plantin-Moretus Museum, where one of the rooms illustrates the correction of the proofs by him and other erudite men such as the Orientalist Franciscus Raphelengius.

It appears that Kiliaan contributed to the *Biblia Polyglotta*, which Plantin published under the supervision of the Spanish theologian Benito Arias Montano. He also translated some well-known best-selling works, such as the *Descrittione di tutti i Paesi Bassi* by Lodovico Guicciardini, and he wrote some poems, mainly short verses, accompanying engravings by the Antwerp engraver Philips Galle. However, his name is particularly associated with Dutch-language dictionaries. After some preliminary work for early word-lists published by Plantin, Kiliaan compiled three fully fledged dictionaries of the Dutch language, the innovating character of which makes him the founder of modern Dutch lexicography and an important name indeed in the history of lexicography in general. The first dictionary bearing Kiliaan's name is the *Dictionarium Teutonico-Latinum*, printed by Gerard Smits for Plantin in 1574. (A number of copies bear the imprint of the widow and heirs of Joannes Steelsius.) It is a dictionary translating some 12,000 Dutch words into Latin, with the novelty of adding German and French equivalents with the same stem to the Dutch headwords. A second and substantially enlarged edition of this *Dictionarium* appeared under the same title in 1588. The number of entries grew to 35,000 items. Unlike the first edition, it also included Dutch words from outside the Duchy of Brabant and briefly indicated their distribution in the Low Countries. Moreover, etymologies were introduced, and, at the back of the volume, a list of foreign and therefore unsuitable loan words added a purist touch to the dictionary. The last edition that was published during Kiliaan's life appeared in 1599, when Moretus was in charge of the *Officina Plantiniana*. Its title, *Etymologicum Teutonicae linguae*, indicated the general ambition of the work: its main focus was no longer the Latin translation of approximately forty thousand Dutch words but instead language description, comparative linguistics, and etymology. The comparative features were extended to English, Saxon, Spanish, Italian, and Greek equivalents with the same stem.

Kiliaan's dictionaries translated Dutch words into Latin, but they were not primarily translation dictionaries—rather, they analyzed and described Dutch vocabulary in the international scientific language of that

time. Each edition of the dictionary grew more complex and integrated new features: more headwords, a wider geographical scope, common stems of different European languages, and the origin of words. One might say that Kiliaan gradually tried to get a firmer grip on the fluidity of language. We can now look at how these dictionaries were designed to contain all of this linguistic knowledge and to make it retrievable in an effective, user-friendly way.

MACROSTRUCTURE AND MICROSTRUCTURE

To describe the typographic arrangement of the dictionaries, I will adopt the terminology introduced by Paul Luna: in his typographic analysis of early English dictionaries, he used the words *macrostructure* and *microstructure* (Luna, 2000). Those concepts had been previously introduced by the lexicographer Henri Béjoint as a means to understand the selection process and the content structure of English dictionaries (Béjoint, 1994). In the extended meaning, they instead refer to the “space” of dictionaries as reflected in the type area and the volume of bound quires. In Luna’s words, *macrostructure* has to be understood as the set of features “which assist location of the word . . . and enable the dictionary to be a practical physical tool given the amount of material it contains.” *Microstructure*, then, is the set of features “which enable the reader to discriminate between the various categories and sequences of information that are given about the word(s)” (Luna, 2000, pp. 6–7). These terms are useful for our purpose, for they make it possible to crystallize the questions that are linked to the discipline of library and information science. What is there to be said about macrostructure and microstructure in Kiliaan’s dictionaries? It is important to stress that these books were produced at a time when every printed sign had to be composed by hand, letter after letter, line by line, page by page, at a time when paper and lead type were very expensive, and when it was as important as today to produce books that would reach a public of readers and, even better, a public of buyers. How did typographical tools optimize (or at least support) efficient look-up and clear presentation, and how did these tools possibly develop in the course of the twenty-five years that separate the first edition of 1574 from the final one, dating from 1599?

First, let us say a few words about the physical volume of the three dictionaries. Surprisingly, these milestones in the history of scientific publishing in the Low Countries were relatively small octavo volumes. The number of pages, it is true, grew substantially from 240 pages in the 1574 edition to 784 pages in the *Etymologicum* of 1599, but it never became a royal folio, not even a quarto, which would have paid tribute to the scholarly achievement of its author and to his contribution to well-founded lexicography. Plantin’s *Dictionarium Tetraglotton* (1562) and his *Thesaurus Theutonicae linguae* (1573) were published in a comfortable quarto, and it is not clear why Kiliaan’s dictionaries were not.

This impression of limited formal qualities is still enhanced when we open the book at random (fig.1). The type area is far from impressive: the first edition has a type area of 145 by 90 millimeters. In the second edition, it is even smaller (134 × 81 mm). Only in the third edition of 1599 does a slightly increased type area (167 × 96 mm), containing 53 lines of type instead of 44 lines in the 1574 edition and 42 lines in the 1588 edition. (These numbers of lines leave the headlines and the signature marks out of account.)

The small type area is counterbalanced by a very economical use of the available space, and the pages seem to be as filled with information as possible. The type size is quite small. By using the twenty-lines formula, a standard to express the size of fifteenth- and sixteenth-century type (Vervliet, 2008), we discover that both the type size and the distance between the lines remained unchanged throughout the three editions: 20 62/61 x 1.4:2.2 mm, which means that twenty lines of (roman) text occupy 61 to 62 mm, that the x-height measures 1.4 mm, and that the capital letters measure 2.2 mm. From 1574 to 1599, Kiliaan continued to use the same type size (it was then called the Gaillarde, Bourgeois, or Colinaeus [Carter, 2002; Gaskell, 1972]) and the same leading. Consequently, too, the white space of the margins is limited to the absolute minimum. The margins of the copy of the first edition now in the Plantin-Moretus Museum range from 7 to 11 mm. Of the three copies I saw of the 1599 edition, the one with the largest margins still had an upper margin of only 4 mm, an outer margin of 13 mm, and a lower margin of 19 mm.⁵ (It would, of course, be more correct to measure the inner margin, as it was the only margin that the binder could not cut off. However, the inner margin can only be measured accurately in an unbound copy, which, to my knowledge, is not available.)

The text of the three editions is set in two columns, and the distance between the columns is limited to the absolute minimum of 1 to 2 mm, with a column width of around 40 mm. The only edition presenting some liberality in this respect is, again, the third edition of 1599, with columns that are a bit wider (46 mm) and more clearly separated from one another (3 mm). In short, Kiliaan, Plantin, and Moretus used the paper surface in a very efficient way throughout the twenty-five years of production. Let us now look in greater detail at the ways in which they organized the macrostructures and microstructures.

LOOK-UP FEATURES

The look-up qualities of the dictionaries are achieved with four elements: (a) the alphabetical sequence of the headwords, (b) the positioning of the letters of the alphabet dividing the dictionary into alphabetic sections, (c) the use of headlines as tools for navigation, and (d) the way in which it is made clear that a word is to be seen as a headword, introducing a new entry.

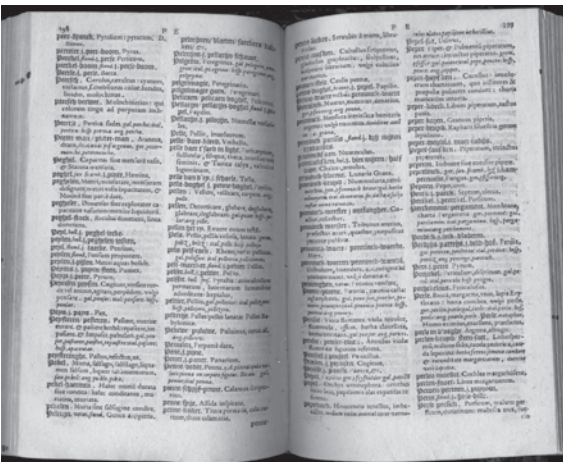
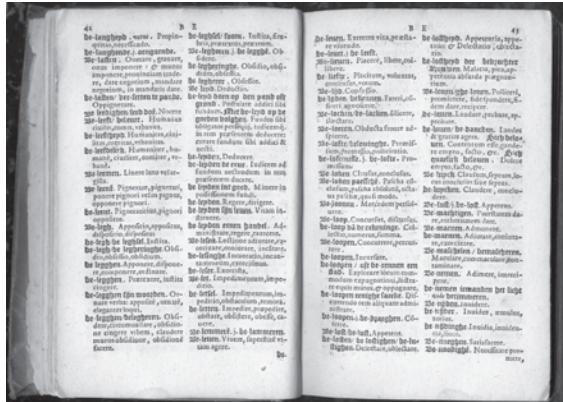


Figure 1. The type areas in the three editions of Kiliaan’s dictionary (Antwerp, Plantin-Moretus Museum, A3928, A446, and A835).

The Alphabetical Sequence

Generally speaking, all three editions follow the alphabetical sequence in a very consistent manner. At this macro-level, dictionaries indeed are to be considered as books in which the only hierarchy is the one that follows from the sequence of letters in the alphabet. At the time of Plantin and Kiliaan, other models existed, such as the systematic arrangement of headwords that Hadrianus Junius applied in his *Nomenclator Omnium Rerum* (Antwerp: Plantin, 1567) (Van Rossem, 2007, p. 170). Kiliaan resisted this temptation, however, and retained the model where each entry was “equal.” He broke this coordination only on certain occasions. Sometimes, he momentarily abandoned the alphabetical sequence when a more logical arrangement was preferred. In the 1599 edition, for instance, the entry BOECK (“book”) is followed first by its diminutive BOECKSKEN and only then by BOECK-BINDER and BOECK-DRUCKER (“bookbinder,” “printer”), which should precede BOECKSKEN in a strictly alphabetical arrangement. But Kiliaan applied all this in a quite casual way, for a bit further, KIND (“child”) is followed first by a series of compound words like KIND-DRAUGHT (“pregnancy”), and only later, at the correct place as far as the alphabet is concerned, by the diminutive KINDEKEN.

That the correct sequence of the headwords—and consequently of the printed pages—was important and even essential to enable an effective retrieval, is stressed by the consistent application of pagination in the headlines (from the 1588 edition onward) and of catchwords at the bottom line of *each* page. The user of the dictionary could be confident that if he knew the alphabet, he would easily locate each word, because, with only a few exceptions, the author had been following a consistent set of rules and because the compositor and the binder had double-checked the correct sequence of the pages.

The Positioning of Ornamental Initials

Today, we expect each of the twenty-six sections of a dictionary to start with a new column or, better still, on a new page, preferably a right-hand page. As we have seen, however, a major feature of these early dictionaries was *horror vacui*, which was expressed by the small margins. It is no surprise, then, that a new section never started on a new page but always continued on the same page, and even within the same column as the preceding one.

In the 1574 edition, this lack of articulation was counterbalanced by the use of eye-catching figurative initials that occupied almost half of the column-width and took six or sometimes even seven lines of text (fig. 2). These ornamental initials immediately function as the first letter of the first entry. In other words, they were made useful in a twofold manner: as an articulating element and as the first letter of a headword. They were also preceded by a centered line with the combination of the first two letters of the words following the ornamental initial. In the later editions,

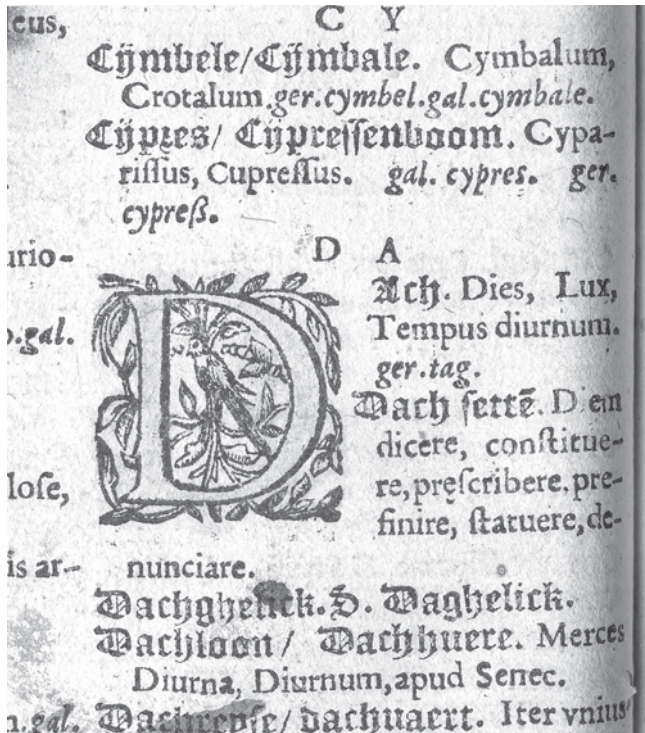


Figure 2. The ornamental initial D in the 1574 edition.

the ornamental initials are a bit smaller, occupying only four lines of text, and they are no longer figurative, but this was compensated by the use of a rather bold horizontal line over the column width and by the insertion of an extra white line under the initial (fig. 3).

The Use of Headlines

In every edition of Kiliaan's dictionary, the alphabetical sequence is supported by headlines. They are not yet the effective headlines of present-day dictionaries (consisting of the first and the last word appearing on the page), but they certainly assisted the readers and guided them through the mass of information. In the first edition, the headlines are set above each of the two columns, and they are limited to the first two letters of the words treated in that column (fig. 4). These headlines are set in letter-spaced capitals of a larger size than the ones used *within* the columns. They strongly attract the eyes and force them to look at these capitals in the first place. From the second edition on, the headlines still consist of two capitals, but they are less prominent (fig. 5). They are set in the same size as the capitals within the columns, and they are mostly centered over the page (with exceptions when necessary).

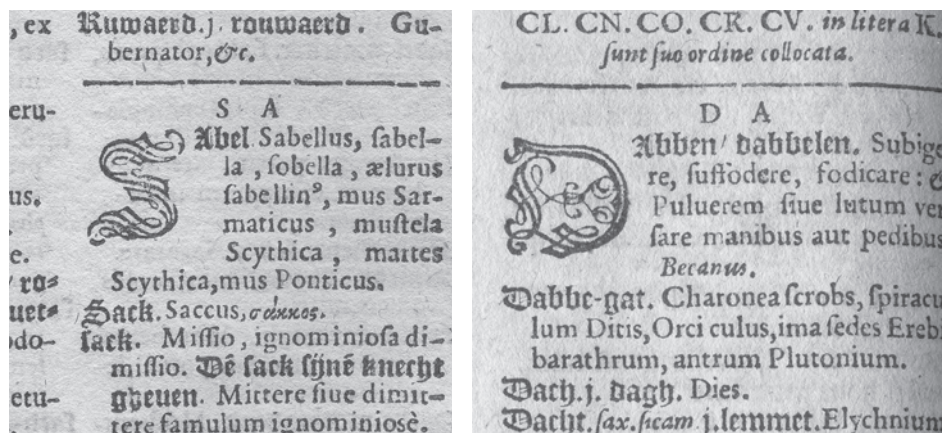


Figure 3. The ornamental initials S and D in the 1588 and 1599 editions.

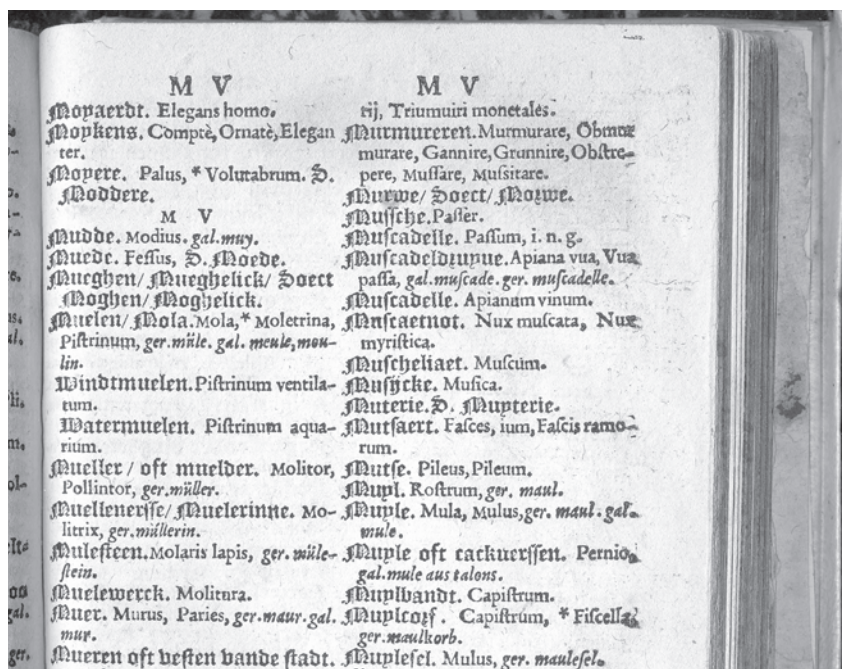


Figure 4. A headline in the 1574 edition.

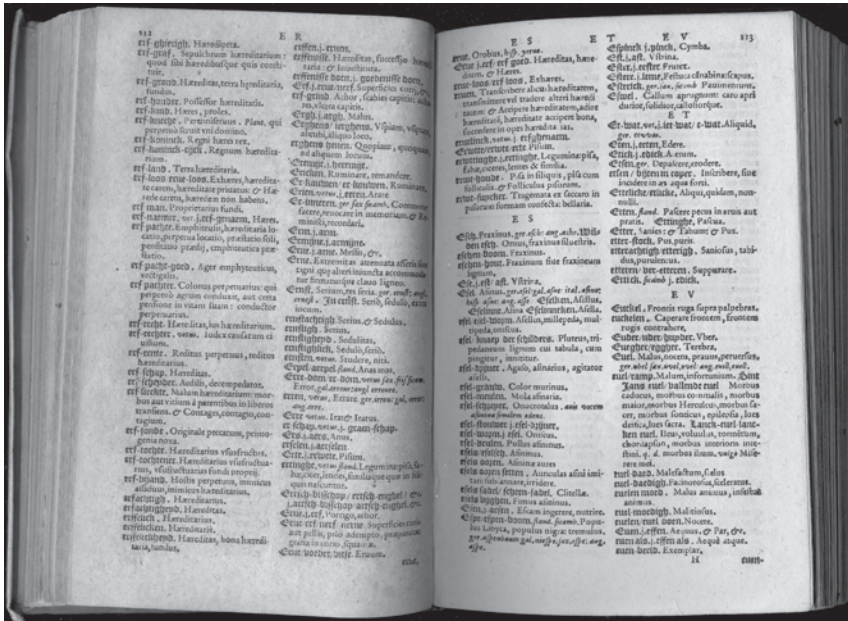


Figure 5. Headlines in the 1599 edition.

It is noteworthy that the pairs of capitals used both in the headlines and within the columns are set in roman. Were roman letters thought to be more appropriate for look-up than black-letter capitals? Were roman typesfaces more easily recognized than black-letter ones, already in the second half of the sixteenth century and even in a Dutch-speaking context, where the black-letter tradition was stronger and longer lasting than, for example, in the French-speaking world? It is not easy to answer these questions, for in the *Thesaurus Theutonice lingue*, published by the same Plantin in 1573, headlines are set in black-letter capitals.

The Design of Headwords

As soon as he opens a dictionary, the reader should be able to determine which parts of the text function as headwords and to distinguish them from their definition. To achieve this, the typographic designer has to create contrast between those two categories of text. Perhaps the most striking feature of Kiliaan's design is the use of black-letter for the headwords. It may appear to be "natural" to have used black-letter for the headwords of a *Dutch* dictionary. Indeed, black-letter was in use for some Dutch texts until well into the nineteenth century, especially for printed texts addressing a wide audience. This "natural" association of Dutch texts with black-letter—and of Latin and French with roman or italics—can be illustrated by the title page of the *Thesaurus Theutonice Linguae* mentioned earlier,

where Latin and French words are set in roman and Dutch text in black-letter. However, the practiced eyes of Plantin the printer and Kiliaan the compositor and proofreader must have been struck by the black-letter's capacity to create contrast with roman text, to stress words and to present them in a "bold" kind of way, without needing color or a larger type size. (Bold or semibold variants of roman type appeared only in the nineteenth century [Twyman, 1993].) It is an interesting hypothesis that Kiliaan may have composed the headwords in black-letter more for the latter's contrasting qualities than because of custom and tradition.⁶

Another tool enabling the reader's eyes to discriminate between the headwords and their explanation is the use of indentation. All three editions make use of hanging indents: the first line of each entry is set a little to the left of the following one(s). In the 1574 edition, where "definitions" were limited to some Latin equivalents and a few additional data rarely taking more than one line, this was a more paper-saving way of working than the use of a normal indentation would have been. But even in the later editions, often containing entries of more than one line, Kiliaan stuck to this presentation, and we may assume that it was a deliberate choice determined by the desire to assist the reader, who would scan the text vertically in search of a given headword. In each edition, the size of the indentation was limited, taking only 3 mm, which is approximately the width of the average black-letter capital used to introduce the headwords.

MICROSTRUCTURE

Some words, then, are needed about the microstructure of Kiliaan's dictionaries: What is the range of information given about each headword, and how is this information structured and designed in order to enable the reader to discriminate between the various categories of information that are given about each word?

Some characteristics of the headwords have already been given—they are emphasized by the use of black-letter and hanging indents. Yet there is more to say about them. Each headword is separated from its definition by a period and a word space. There are no indications for pronunciation, stressing, or hyphenation. The so-called definitions consist mainly of a series of separate words: Latin equivalents set in roman type and separated from one another by a comma and a word space. Additionally, in the 1574 edition, each Latin equivalent starts with a capital. To our eyes, it seems odd—and not very economical—to repeat the headword on a new line for each of its meanings. The same, moreover, is true about the sayings: Each saying starting with a given headword is treated as a new entry.

The information given about the headwords was gradually extended with each new edition of the dictionary. Each time, new solutions had to be developed to ensure that the user would continue to find his way through the entries. The *Dictionarium* of 1574 gives some elementary

information about etymology, as well as a short indication about analogies with other languages. A word with a presumably French origin like *PLAYSIR* (pleasure) for instance, has the addition *gal.* (*gallicum*) between the headword and the Latin equivalents. French or German equivalents resembling the Dutch headword are added at the end of each entry. *PINCEEL* (paintbrush), for instance, has the additions *ger. paensel gal. pinceau* (fig. 6). From the 1588 edition on, the information of the entries grew more complex. Standard abbreviations were used to express the regional application of words, and in a similar way, the word *vetus* (old) warned the reader about the archaic character of some words, as in “*PIED-MAEND vetus SEPTEMBER*” (1588). Rarely, indications are given about the specific field of knowledge to which a term belongs, such as in the translation of *GHE-BENEDIJDEN* as “*benedicere*” in a clerical context (*apud Eccles*) in the 1588 edition. Finally, a mention is sometimes made of the source of (parts of) the information: *GHE-BAEREN*, for instance, is explained with a reference to the humanist linguist from Antwerp, Johannes Goropius Becanus (1519–1573), the author of a history of Antwerp replete with details about the origin of the Dutch language.

All of this additional information has some common features in terms of layout and typography. Every element has a fixed place in the definition and is clearly articulated by the consequent use of italics, even for German words, where one would have expected black-letter. Through the three editions of his dictionary, the lexicographer Kiliaan extended the linguistic content, and the compositor Kiliaan ensured that the presentation remains clear and unambiguous: the headword is always set in black-letter, the Latin definition in roman, and all the additional information in italics, even when one would expect black-letter. This confirms the conclusion that black-letter is used for its bold and contrasting qualities, not as a result of linguistic convention.

PLANTIN’S BENCHMARK? THE DICTIONARIES OF ROBERT ESTIENNE

To determine the degree of typographical novelty reached by Kiliaan, Plantin, and Moretus, it may be useful to compare their dictionaries with the work of Estienne (1503–1559), the French humanist printer who exercised an undeniable influence on most lexicographic projects in Europe throughout the sixteenth century. Half a century before Kiliaan, Estienne combined typographical mastery with the compilation of well-founded Latin and French dictionaries. It has been demonstrated that the content of Estienne’s work served as a model of Latin-English and Latin-German dictionaries (resp. by Thomas Elyot, London, 1545; Thomas Cooper, London, 1565; and Joannes Frisius, Zürich, 1556) (Starnes, 1963, pp. 102–105), and a similar influence can be observed in Antwerp dictionaries. Estienne’s *Les mots François Selon l’ordre des Lettres*, for instance, first published

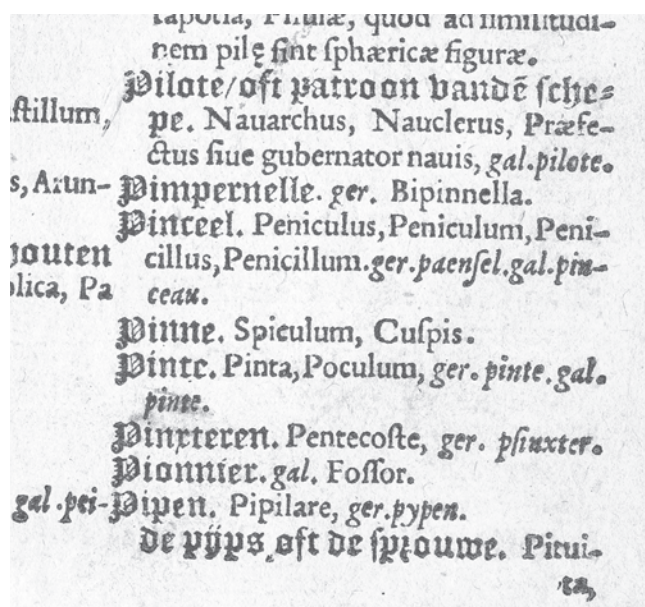


Figure 6. The entry pinceel in the 1574 edition.

in Paris 1544, was adapted into a *Vocabulaire François-flameng* by the Antwerp schoolmaster Gabriel Meurier; it was published in Plantin's office in 1557. Another example of this influence appeared in 1563, when Plantin commissioned Kiliaan to translate the French words of Estienne's *Dictionarium Latinogallicum* into Dutch; the translation was finished one year later but did not result in a printed publication (Claes, 1973; Van den Branden et al., pp. 37–38). If Estienne exerted such a manifest influence on other European lexicographers, we may reasonably assume that he also influenced the typographic design of their productions. It is surprising, however, that until today, Estienne's dictionaries have not been approached from this point of view.⁷ Before turning to a comparison between Paris and Antwerp, we therefore need some additional information.

Apart from some very successful Latin-French and French-Latin *dictionariola* aimed at schoolboys, Estienne's lexicographical production can be summarized by three titles. The *Dictionarium seu Latinae linguae thesaurus*, first published in Paris in 1531, was a scholarly undertaking intending to record the entire Latin lexis and to illustrate it with citations of the best classical authors. It integrated some French translations but not in a consistent way, and the importance of French text gradually diminished in the following editions of 1536 and 1543. Only later did Estienne produce dictionaries that were intended as tools for translation. In 1538, he published the first edition of his *Dictionarium Latinogallicum*, which he

compiled from his *Thesaurus* but added French translations to every Latin word to transform it into a full translation dictionary. It was gradually extended with additional entries and reissued in 1543, 1544, and 1546.⁸ The French-Latin counterpart appeared as *Dictionnaire Françoislatin* in 1539, followed by an enlarged edition in 1549. Due to their explicitly bilingual character, both the *Dictionarium Latinogallicum* and the *Dictionnaire Françoislatin* can be approached as appropriate cases for a comparison with Kiliaan's dictionaries. As we have seen, the latter were not primarily meant as translation dictionaries (which explains why Kiliaan's Dutch-Latin *Dictionaria* were never complemented by a Latin-Dutch version), but they, too, were bilingual, because the definitions of the Dutch words were always given in Latin.

Estienne's *Dictionarium Latinogallicum* of 1538 and 1543 and his *Dictionnaire Françoislatin* of 1539 and 1549 share a great deal of typographical features. They were all published in a royal folio format, which lends them a *grandeur* that was not imparted to Kiliaan's works. The same impression is produced by the layout: the text is set in two columns of 70 to 76 mm, and the distance between them measures 5 to 6 mm. The columns contain more than sixty lines of text, which explains the relatively large type area of 242/258 × 145/156 mm. (The fraction bar separates the minimum and the maximum height and width of the several editions.) The alphabetical sequence of the headwords is scrupulously controlled, except for some inaccuracies. The pagination is consistently put in the left and right corners of the headlines, but it is not supported by other typographic means: signature marks are only present on the rectos of the first four folios of each quire, and catchwords are totally absent, even on the last page of the gatherings. Clearly, Estienne considered the pagination to be reliable enough to guarantee the exact sequence of the pages and the headwords. Like Kiliaan, however, he took a great deal of care for the division between the several sections of his dictionaries. With a few exceptions, each of them started both with a large capital centered above two columns of text and with an ornamental initial that was used as the first letter of the first headword within the column.

Apart from the page numbers, the headlines consist of (mostly two) combinations of three, sometimes four, letters referring to the first letters of the words treated within each column. They are set as letter-spaced roman capitals with the same type size as the capitals used in the translations within the columns. Not all these combinations are repeated within the columns: only when the first *two* letters change is mention made of it by the introduction of two letter-spaced capitals within the column.

The vertical scanning of each page in search of a particular headword is supported by the use of indentation and by variety in type size. Generally speaking, Estienne uses a larger roman type for both Latin and French headwords. The x-height then varies from 2 to 2.2 mm, whereas the capitals

measure 3 to 3.5 mm, which is 0.5 and even 1.0 mm higher than the type used for the translations and the other elements of the definitions. There is only one—major—exception: In the *Dictionarium Latinogallicum* of 1543, Estienne uses a bold-looking black-letter for the Latin headwords (fig. 7). The contrast they create is still stressed by the consequent use of a *virgula suspensiva*, or gothic comma (/), after each headword and by their size. Although the text of the definitions/translations is set in the usual type size of 1.6 mm x-height and 2.5 mm capital-height, the black-letter has an x-height of 2.5 mm and a capital-height of 3.5 up to 4.8 mm. Surprisingly, this interesting typographic choice was not retained in the 1546 edition of the *Dictionarium Latinogallicum*, which switched back to roman headwords. We can only speculate about the reasons for this return to roman. Did the French users have difficulties reading them? Did they still read black-letter, but with less comfort than roman? Was black-letter no longer associated with Latin?⁹

There is another interesting instance of a typographic experiment that was followed by a return to former practices, namely the indentation of the headwords in the first edition (1539) of the *Dictionnaire Françoislatin*. Usually, Estienne used a hanging indent of 3 to 5 mm for the headwords, which was probably the best way to do it as long as most of the translations took only one line of text. In the 1539 edition of the French-Latin dictionary however, each French headword—set in larger type than the translations following it—is indented with no less than 13 mm, after which it is repeated on the next line and translated into Latin. A valid typographic choice as far as the retrieval of information is concerned, this practice was nevertheless abandoned in the next edition and was never applied in the *Dictionarium Latinogallicum*. Was it too paper consuming, or was the repetition of the headword thought to be redundant?

Finally, Estienne seems to have been very keen to produce a clear scheme within the translation of each headword. Due to the limited character of the definitions—they usually consist only of some grammatical information, of translations into French or Latin, and of some characteristic citations—the microstructure is quite simple. But then, again, its scheme is applied in a very consistent way, using roman for Latin and italics for French – except for the headwords, which are always set in roman (or, as we have seen, in black-letter in the 1543 edition of the Latin-French dictionary). This simple alternation between roman and italics is only interrupted when cross-references are used. In the *Dictionnaire Françoislatin*, the word *Voyez*, in smaller italics, is used to refer from French headwords to other French words, which are then set in the same large type as the headword. But in the *Dictionarium Latinogallicum*, Estienne broadened his typographic repertoire by combining the Latin word “Vide,” in roman, with Latin equivalents set in letter-spaced small caps (in the 1538 edition) or in black-letter (in the 1543 edition).

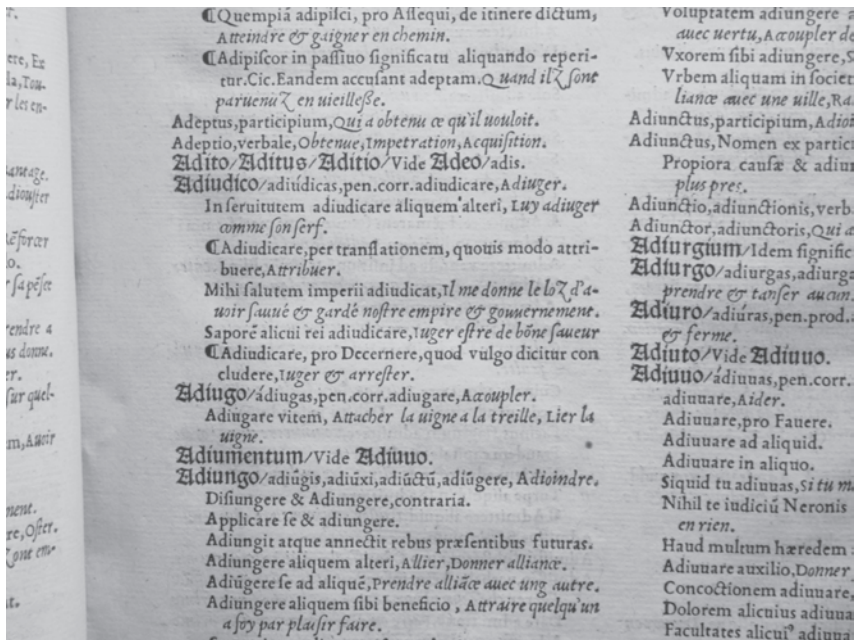


Figure 7. Black-letter headwords in Robert Estienne's *Dictionarium Latinogallicum*, 1543 (Paris, Bibliothèque Nationale de France, x325).

SOME CONCLUSIONS

The analysis of the macrostructures and microstructures of Kiliaan's dictionaries and their comparison with Estienne's work in the same field leads to some conclusions about the way in which the space of linguistic knowledge was arranged in the second half of the sixteenth century. The design of the dictionaries compiled by Kiliaan and published by Plantin and Moretus are to be considered as the result of different thoughts and circumstances.

First, the design of the dictionaries was determined by economic considerations. Paper was very expensive, and this may have influenced the choice for a small octavo format, the reduced type size, the use of columns and narrow margins, and the integration of ornamental initials *within* the columns of the dictionary. Apart from this, it is reasonable to assume that the publishers wanted these dictionaries to serve not only as a scientific codification and description of the Dutch language but also as practical—and therefore not too heavy—tools for any Dutch-speaking person wanting to translate Dutch vocabulary into Latin or for non-Dutch speakers to understand Dutch texts. Were the dictionaries intended for a public of students who could not afford heavy, expensive books? Format may have followed marketing motives. But why, then, did Estienne not

hesitate to publish his translation dictionaries as folio volumes, although they explicitly addressed “*la jeunesse françoise, qui est sur son commencement et bachelage de littérature*”?¹⁰ It is not easy to answer all the questions that arise from a typographical approach.

Second, there is a clear desire for flexibility as far as information retrieval is concerned: the reader is allowed to decide for himself on his search strategy through Kiliaan’s list of headwords. In other terms: he is allowed to follow whatever path he likes on his quest for linguistic knowledge. The most effective way is to look for the right combination of the first letters in the headlines, where they were set as large capitals in the 1574 edition, then to descend into the columns to look for the same combination of letters again, and finally to scan the list of headwords. This strategy was definitely preferred and imposed in the first edition, with the extra-large capitals appearing in its headlines. But one could also look up the word by directly searching for the right combination of capital letters within the column, and even scroll the list of headwords that contrasted so clearly with the definitions due to the use of a bold black-letter. The adoption of smaller capitals in the headlines of the subsequent editions indicates that Kiliaan may have been aware of the need to let the *reader* decide on the most appropriate way of looking up the information, an awareness that Estienne had already acquired earlier.

This remark seems to contradict the hypothesis of the *Erkenntnissteuerung*, according to which it is the design of the book that regulates its use by the reader, and not the other way around. However, the design of these dictionaries also shows a clear desire to create something authoritative, a definitive dictionary of the entire lexis, leaving precious little space—literally—for the particular owner of the book to add information (new words, other meanings, corrections). Kiliaan had experienced this himself, when he tried to use the previous edition of his work to prepare the following one. The preserved copies of the 1588 and the 1599 editions that he filled with annotations as a preparation for the subsequent editions demonstrate how poorly Kiliaan’s dictionaries were designed for anyone wanting to add personal comments to the printed text (fig. 8).¹¹ Estienne’s volumes, with their generous margins, were much more accommodating in this respect, and it would be interesting to analyze extant copies to see if their owners made use of this facility.

Finally, one is struck by the amount of typographic craftsmanship that is demonstrated by the Antwerp dictionaries and by the accuracy in composing the text, with its alternation of black-letter, roman and italics, and the consistent application of indentation, allowing the eye of the reader to scan the page vertically in an effective way. The typographic tradition of the Netherlands, with its creative coexistence of roman, italic, and black-letter, allowed Kiliaan to use a greater variety of type than lexicographers working in a more “homogeneous” typographic tradition. As we have

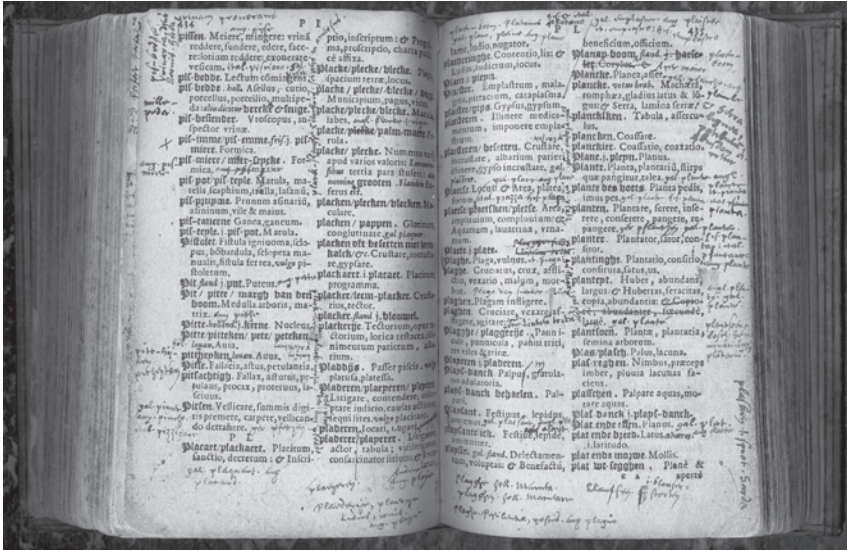


Figure 8. Autograph notes by Kiliaan in his own copy of the 1588 edition (Antwerp, Plantin-Moretus Museum, r55.13).

seen, Estienne tried only once to work with such a broader typographical repertoire, in his Latin-French dictionary of 1543. But his use of black-letter was a once-only experiment, and he did not continue it in the subsequent edition of 1546, returning to the weaker contrast between roman and italics and between several type sizes. His *Dictionarium Latinogallicum* of 1543 may, however, have inspired Kiliaan, who used several type families in a well-considered way. It is striking, for instance, that he used black-letter only for the Dutch headwords, *not* for the German equivalents listed within the definitions, where one would have expected the use of black-letter, too. This, however, would have disturbed the implicit typographical code, which reserved black-letter for the “bold” headwords. By displaying the whole typographical repertoire of their time, and by using the space of the printed book in a carefully considered way, Cornelis Kiliaan, Christophe Plantin, and Joannes Moretus created effective reference works, setting a high standard for the retrieval of linguistic knowledge.¹²

NOTES

1. See, for example, the following citation from the “Scope and Concerns” of *The International Journal of the Book* (<http://ijb.cgpublisher.com/about.html>, accessed March 2, 2012): “Indeed, the information architecture of the book, embodying as it does thousands of years’ experience with recorded knowledge, provides a solid grounding for every adventure we might take in the new world of digital media.”
2. One could also point, in this respect, to the many definitions that have been developed for information science, such as Buckland & Liu, 1995: “Information Science is centered

- on the representation, storage, transmission, selection (retrieval, filtering), and the use of documents (messages), where documents (and messages) are created for use by humans” (p. 389).
3. One of the genres that has been analyzed in this way is that of the printed commonplace-book, a collection of quotations gathered together under heads, of which Moss, 1996 (p. vi) noted that they were arranged “in such a way as to ensure maximum ease and efficiency in retrieving the information it contained.” Similar questions have resulted in the recent monograph by Blair, 2010: the author does not discuss typographic design fully, though she has a short paragraph on “Layout or *mise-en-page*” on pp. 152–159; dictionaries are treated on pp. 121–124.
 4. An interesting application of this idea is to be found in the way in which the original Latin text of Justus Lipsius’s *Politicorum libri sex*, with a typographic design inviting the reader to examine passages at random, was transformed in its vernacular translations into a “contiguous discourse” (Peraita, 2011).
 5. Cornelis Kiliaan, *Etymologicum Teutonicae Linguae*, Antwerpen: Joannes I Moretus, 1599, copy Antwerp, Library of the Ruusbroec Society (University of Antwerp), shelf number 1083 D1.
 6. A close scrutiny of the headwords, by the way, also reveals that a subtle hierarchy was introduced between them from the 1588 edition on: compound words and derivatives no longer started with a capital, in order to distinguish them from the basic entries, which continued to get a capital.
 7. The typographic design of Robert Estienne’s dictionaries is not treated in any of the following works: Renouard, 1843; Brandon, 1967; Schreiber, 1982; Armstrong, 1986; Considine, 2008; Boudou & Judit Kecskeméti, 2009.
 8. I have not seen the 1544 edition, which is recorded in Adams, 1967, II, p. 235 (nr. 1804), but not mentioned by Renouard, 1843, nor by Boudou & Kecskeméti, 2009.
 9. The black-letter used by Estienne in the 1543 edition of his *Dictionarium Latinogallicum* is not mentioned in Vervliet, 2008. In fact, Vervliet only mentions one black-letter typeface in his chapter on “The Printing Types of the Young Robert I Estienne 1526–1530,” and not any such typeface in the chapter on “Robert Estienne’s Printing Types.” One possibility is that Robert Estienne used type that had once belonged to his father Henri. (I am indebted to H. D. L. Vervliet, who wrote to me on this topic on May 27, 2011.)
 10. From the preface of Estienne’s *Dictionnaire Françoislatin* (1539), fol. [1]v.
 11. Kiliaan’s own copy of the *Dictionarium* of 1588 has been preserved in Antwerp, Plantin-Moretus Museum, R55.13, and that of the *Etymologicum* of 1599 in The Hague, Royal Library, 393 F10.
 12. An earlier version of this text appeared in the *Journal of the Printing Historical Society*, new series, nr. 7 (2011), p. 23–47. I am greatly indebted to the Printing Historical Society, whose travel grant in the 2009 round enabled me to do additional research regarding Robert Estienne’s dictionaries in the Bibliothèque Nationale de France.

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