

Punctuation patterns in a 17th-century medical manuscript: A corpus-based study of G.U.L. MS 303, *Treatise on the Diseases of Women*¹

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Abstract

The regularization of punctuation and spelling is one of the distinctive features of Early Modern English (Lass 1999: 8), although in the case of handwritten material punctuation depended greatly on the scribe's preference, and it was considered to be rather unpredictable. However, recent studies have demonstrated that punctuation followed particular patterns depending on the typology of the text (Calle-Martín 2004, Calle-Martín & Miranda-García 2005). In this line, this paper investigates the punctuation system in a 17th century medical manuscript, entitled *Treatise on the Diseases of Women* (Glasgow University Library, MS Hunter 303), following the theoretical framework proposed by Lucas (1971).

Keywords: punctuation, manuscript, Early Modern English

1. Introduction

The standardization of punctuation and orthography is elsewhere regarded as a distinctive feature of early Modern English (Lass 1999: 8). This process initiated in the 15th century with the expansion of Humanist ideas that stressed the *persuasive* function of language, and “therefore attempted to strike a balance between the logical relationships in syntax and the rhetorical structure of a period” (Ronberg 1995: 55). On practical grounds, the key principles and conventions of punctuation developed as a consequence of the introduction of Caxton's printing-press in England (1476), the increasing activity of Westminster's Royal Chancery, and the proliferation of professional scribes who were engaged in the writing of all sorts of documents from guild's records to private letters (Salmon 1999: 15).

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The study of historical punctuation has attracted the attention of many linguists, though the focus was generally on literary texts, Elizabethan drama in particular (see Fries 1925; Howard 1930; Salmon 1962; Graham-White 1982, among others). Nonetheless, a general consensus is not always reached regarding the level of systematization of the punctuation system. Thus, some scholars view medieval and Elizabethan punctuation as lawless and haphazard (Denholm-Young 1964: 77; Jenkinson 1926: 154; Parkes 1978: 138–139; Petti 1977: 25; Tannenbaum 1930: 139). This arbitrariness seems to be more pronounced in the case of manuscripts, where the particular uses depended greatly on the scribe's preference (Rodríguez-Álvarez 1998: 27). Conversely, others demonstrate that manuscript punctuation was not so “capricious” following particular patterns, which vary diachronically and across text typologies (Arakelian 1975; Lucas 1971; Rodríguez-Álvarez 1998; Calle-Martín 2004; Calle-Martín and Miranda-García 2005, 2008; Obegi-Gallardo 2006; Marqués-Aguado 2009; Esteban-Segura 2010; Alonso-Almeida and Ortega-Barrera 2014).

The use of specific patterns of punctuation seems to be more consistent in scientific texts, perhaps motivated by the need for accuracy. In this fashion, Calle-Martín's analysis of an arithmetical treatise presents a punctuation system “flexible and [based on] a premeditated set of rules [...] with specific and often overlapping uses” (2004: 420). In the same vein, this author concludes that *The Crafte of Nombrynge* shows a systematic use of punctuation marks supported by a prosodical function (Calle-Martín and Miranda-García 2005: 42). In the same vein, Esteban-Segura ascertains that the late Middle English version of the *Compendium Medicinæ* in MS Hunter 509² shows “a more or less consistent punctuation pattern” with outstanding grammatical functions (105).

In early Modern English, there is only one scholarly approach to handwritten punctuation in scientific literature, the case of a 16th-century recipe book (Alonso-Almeida and Ortega-Barrera 2014). This work lists the functions of the punctuation symbols across two genres of the text (recipes and medical advice) coming to the conclusion that there is certain “inconsistency of scribal usage in applying punctuation” particularly associated with the absence of symbols where they were expected

² These manuscripts can be freely accessed online at *The Málaga Corpus of Late Middle English Scientific Prose* website, i.e. hunter.uma.es, where the original witnesses and their correspondent semi-diplomatic transcription can be consulted.

(Alonso-Almeida and Ortega-Barrera 2014: 54). Two aspects deserve attention: the large variety of punctuation marks occurring along the text, which is consistent with the development of English at the beginning of the early Modern period, and the high proportion of the *comma* “with a strong grammatical function”, e.g. to separate sections within the text (157).

Historically, the use of punctuation seems to have evolved from the rhetorical to the grammatical and pragmatic (Salmon 1988: 287). Thus, the Renaissance is regarded as a transitional period towards the development of a grammatical punctuation system (Calle-Martín and Miranda-García 2008: 357). Thereafter, and especially in the late 16th and 17th century, punctuation moves from the speaker to the reader’s perspective, progressively adopting syntactic and pragmatic functions that helped organise the written information facilitating the understanding of the message (Ronberg 1995: 58; Salmon 1962). The consequence of the systematization of English punctuation is eloquently remarked by Schou when he says that “the punctuation practice that emerged during the seventeenth century was a tool in the process of establishing an English grammar that was independent of the grammar of Latin” (2007: 197).

From a modern perspective, punctuation “is governed primarily by grammatical considerations” (Quirk et al 1985: 1611), being its main function “to give indication of the grammatical structure and/or meaning of stretches of written text” (Huddleston and Pullum, 2002: 1724). However, other scholars claim that punctuation stems from prosody and rhetoric (Chafe 1988; Cruttenden 1991; Dawkins 1995). The midpoint between these two opposite approaches could be represented by Cram’s idea that punctuation in the 17th century integrated the conventions of elocution and syntax “by showing how syntactic distinctions were related to speech” (Cram 1989, in Schou 2007: 198).

All this considered, the aim of this paper is to contribute to the study of punctuation in the early Modern English period, which in my opinion, remains hitherto unexplored, scientific texts in particular. This analysis sheds light on the punctuation patterns of academic treatises, previous studies having exclusively tackled more popular genres. Precisely, the accuracy and clarity demanded by the scientific material strengthen the use of a consistent and appropriate punctuation system. For these reasons, a 17th century manuscript, G.U.L. MS 303 *Treatise on the Diseases of Women* (hereafter referred as MS 303), has been selected for this study as

it includes different discourse typologies. A mixed approach, considering quantitative and qualitative data, has been adopted in this study.

2. Description of data and methodology

2.1. Data description.

The data for this study come from a hitherto unedited medical manuscript dated in the 17th century. The text, housed in the Hunterian Collection at Glasgow University Library and entitled *Treatise on the Diseases of Women*, is a translation of the original French compendium authored by Jean Liébault in 1582 (Young and Aitken 1908: 143). The treatise, organised into three books, describes the causes and symptoms of women's medical issues,³ together with their corresponding recipes and treatment. The present analysis is exclusively concerned with the first book, which includes a preface (*To the translator to the reader*, ff. 2r-4r), a table of contents (ff. 5r-8v), and 37 chapters (p. 1-144), where the medical information is organised following a relatively regular pattern (see 2.4.). The manuscript seems to be written by a sole hand using a bastard type combining features of *Secretary* and *Italic* scripts.

According to the classification proposed by Taavitsainen et al. (2011: 19), this treatise falls under the category of “specialised treatises”, a text-type specially conceived for an academic readership, university-trained professionals in particular (Gray, Biber, and Hiltunen 2011: 224). In the light of this, we can tentatively consider that it was specially designed for a silent individual reading, mostly for study or consultation purposes. Hence, rhetorical punctuation is not initially expected in this composition; assuming that pointing here is in general grammatically-conceived so as to clarify and organise the information of the text for the sake of a better understanding.

2.2. Transcription and corpus compilation

The present study is based on the semi-diplomatic transcription of the manuscript digitised images.⁴ The electronic version was afterwards POS-

³ Apart from particular diseases or ailments, the author comments on other aspects, such as marriage, reproduction and women's psychology.

⁴ The original spelling is maintained, punctuation and paragraphing are faithfully kept, and abbreviations have been expanded and rendered in italics.

tagged by means of CLAWS4 software and the C7 tagset developed by UCREL at Lancaster University (Garside and Smith 1997).⁵ Searches for frequency and concordance were performed with AntConc 3.2.4 software (Anthony 2014).⁶

2.3. *Theoretical approach*

On theoretical grounds, this analysis adopts Lucas' rationale, which proposes the classification of punctuation marks according to two main categories, i.e. *structural* and *interpretative*. On the one hand, punctuation is *structural* if it serves to organise the information in the text, adopting a grammatical function, i.e. to separate sense-units; or a notional function, i.e. to link independent sense-units⁷ (both not mutually exclusive). On the other, *interpretative* punctuation expresses a particular attitude of the author. In this sense, two main sub-functions are distinguished: *expository* and *elocutionary*. The former is intended to clarify the meaning of the text, while the latter serves to indicate its locution (Lucas 1971: 3). This theoretical model allows for the analysis of the use of punctuation marks from a more dynamic perspective, considering their function in relation to the context –genre, subgenre, sentence and clausal level- where they are applied.

⁵ The tagging process reaches an accuracy of the 90%, even though the text is written in early Modern English. For more information about the use of CLAWS4 on early modern texts, see Rayson et al. (2007).

⁶ The digitised images together with the transcript, as well as the corpus version, are freely available at the website of the *Málaga Corpus of Early Modern English Scientific Prose* <http://modernmss.uma.es>

⁷ To my knowledge, a proper definition of *sense-unit* has not yet been formulated. Alonso-Almeida and Ortega-Barrera (2014) propose the sentence as the unit of sense, though they comment that sometimes a phrase can also constitute a *sense-unit*. Thus, in this analysis we consider that a *sense-unit* applies to any construction, whether sentential, clausal or phrasal, which is meaningful.

2.4. Discourse types in MS 303

The medical information contained in the treatise is organised into chapters, all of them written according to a regular pattern as follows:⁸ 1) a theoretical section, which consists of a description of the medical subject and the *causes* thereof (frequently supported by authorial references to Greek physicians) followed by a description of the *symptoms*, and occasionally completed with *true case reports*; and 2) a practical section containing advice and recipes. In the case of recipes, several parts can be distinguished as described by Görlach (1992): ingredients, preparation, application and efficacy.

The theoretical section is the result of the blending between the institutionalised *commentaries* and *compilations*. The former reflects the logocentric mode of scholasticism throughout the use of axioms established by medical authorities such as Galen or Hippocrates, whereas the latter has a didactic function providing access to authorial references making them available to the vernacular readership (Taavitsainen 2012: 100). These two learned genres already converged at the end of the medieval period, becoming more practically-oriented as a consequence of the process of vernacularisation (Taavitsainen 2004: 67). The practical section, on the other hand, contains instructions for the treatment and the preparation of remedies. Even though instructions and recipes were included in academic and surgical treatises in the medieval period, they did not follow a conventional pattern (Norri 2004: 107).

3. Results

The results of this study are organised into three parts. The first shows the quantitative description of the punctuation system in MS 303, the second analyses the use and functions of the commonest punctuation marks, while the third compares punctuation across the theoretical and practical sections.

⁸ The *Preface* and the *Table of Contents* have not been taken into account as they contain a different type of information.

3.1. Quantitative description of the punctuation marks in MS 303

The complete inventory of symbols used in MS 303 includes the *punctus* or *period* (·), the comma (,), the colon (:), the semicolon (;), the *parentheses* [], the virgule (/), the hyphen (-), the triple period (:.), the *crotchets* ([]) and the question mark (?). A quantitative description is presented in Table 1. The comma outnumbers by far the rest of punctuation marks with 61.6% occurrences, followed by the *punctus*, which represents the 20.4%, including both on-line and raised positions. The colon, in turn, is employed in a proportion of 15.7%, while the semicolon just appears in 1.2% of the cases. The rest of punctuation marks occur in a proportion below 1%.

Table 1. Inventory of punctuation marks in MS 303 (*counted as pairs).

Punctuation mark	Raw data	Percentage
comma	4042	61.6
<i>punctus</i>	1340	20.4
colon	1030	15.7
semicolon	82	1.2
round brackets (<i>parentheses</i>)*	52	0.8
virgule	7	0.1
hyphen	5	0.1
triple period	2	<0.1
square brackets (<i>crotchets</i>)*	1	<0.1
question mark	1	<0.1
Total	6562	

Table 2 presents the distribution of the symbols across the different sections. Thus the *period* is concentrated in the *Table of Contents* (56.8%), while the comma, the colon and the semicolon are preferred in the *Chapters*, in a percentage of 95.5%, 98.4%, and 95.1%, respectively. In the same vein, the *period* is proportionately less represented in this section, with just 42.2% of its occurrences. When the use of each symbol is considered in each section the *Preface* and the *Chapters* are overwhelmingly punctuated with the comma, with 72.4% and 69.3%, respectively. The *period*, in turn, predominates in the *Table of Contents* (90.3%). Finally, the colon shows a higher proportion in the *Chapters*,

18.2%, while the semicolon seems to be more relevant in the *Preface* (2.1%).

Table 2. Distribution of punctuation marks in MS 303 (expressed as percentages by sections and within each section. Note that chapters have other symbols not shown in this table.)⁹

Punctuation mark (%)						
By sections*	,	.	:	;		
<i>Preface</i>	2.6	1.0	1.4	3.7		
		56.				
<i>Table of Contents</i>	1.9	8	0.2	1.2		
	95.	42.	98.	95.		
<i>Chapters</i>	5	2	4	1		
Total	100	100	100	100		
Within each section**	,	.	:	;	Other marks	Total
	72.					
<i>Preface</i>	4	9.7	9.7	2.1	6.2	100
		90.				
<i>Table of Contents</i>	8.9	3	0.2	0.1	0.5	100
	69.	10.	18.			
<i>Chapters</i>	3	1	2	1.4	1.0	100

3.2. Functions of the punctuation marks in MS 303

This section presents the particular uses of the *punctus*, the comma, the colon and the semicolon, which amount to 99% of punctuation marks in MS 303. For each mark, the function is described, whenever possible, at discourse, sentence, clausal and phrasal level.¹⁰

⁹ *Figures indicate the distribution of each symbol by sections, so the percentage of commas in the preface is calculated by dividing the number of commas in the *Preface* by the total number of commas in the text, multiplied by hundred.

**Figures indicate the percentage of occurrence of a particular punctuation mark within each section, e.g. the number of commas in the *Preface* divided by the total number of punctuation marks used in the same section, multiplied by hundred.

¹⁰ The values in the tables of this section refer to the *Preface* and the *Chapters*.

3.2.1. The *punctus*

The *punctus* is the earliest punctuation mark in English, introduced by the Romans from the Greek system. Its function as a major pause was already established in the 15th century, though it also acted as a type of comma until its standardization in the early 17th century (Petti 1977: 25). The *punctus* occurs in two positions, the raised and the low *period*.¹¹

It is the second most frequent symbol with 1,340 instances, though heterogeneously distributed in the text. Thus, the *punctus* is employed 14 times in the *Preface*, 761 in the *Table of Contents*, and 565 in the *Chapters'* section. The *punctus* is generally employed to indicate discursive and sentential relationships. These functions are the result of the process of specialization initiated in the 15th century through which it came to signal mostly major pauses, i.e. sentence boundaries, similarly to its present-day function (Petti 1977: 25). However, "the process was not straightforward inasmuch as the *period* preserved many of its inter-clausal functions until the seventeenth century" (Calle-Martín and Miranda-García 2008: 363).

3.2.1.1. The *punctus* at discourse level

The *punctus* is mostly employed to signal major divisions within the text, such as the end of a discourse type or the change of a topic. In this sense, the *punctus* acts separating different topics within each chapter. In example (1), the *period* marks off the end of the theoretical and the beginning of the practical discourse.

(1) "[...] One may know of what humour the stomack is full: if it be cholerick, they ar always verie drie, [...] , heauines of the stomack, the bellie loose, You shall take away this want of appetit, and stirre vp the appetit; if you purge the humour contained in the stomack, [...]" (p. 18)¹²

In addition to this macro-textual function, the *punctus* serves to introduce a new topic within a given discourse type, e.g. the cause from the symptom (2).

¹¹ Generally, we refer to the *punctus* on the line position; if raised it will be explicitly acknowledged.

¹² Examples are provided with their original spelling.

(2) “[...] If the naughtie dispositions of the liuer cause this defect because they ar many, euerie each one /ought\ to be sought out carefully. The *common* signe shall be, that the body waxeth leaner from day to day, and becommeth pale or yellow [...]” (p.96)

3.2.1.2. *The punctus at sentence level*

At sentential level, the *punctus* is chiefly employed to separate two structurally independent sense-units, as in the following cases:

a. *To mark the end of a sentence.* In this case the *period* is employed to signal the end of a sense-unit and the beginning of another, with a grammatical function according to Lucas’ rationale. This use coincides in most cases with the delimitation of two different sections or topics (3).

(3) “[...] The meates shall be of an hott and drie mater, such as ar the bread of /wheat\ rice and such others. To vse mint is good euerie way: the humour should be purged by this or some such other medicine [...]” (p.77)

b. *To connect coordinate clauses.* The *punctus* occasionally serves to signal coordination, with the conjunctions *and*, *or* and *but*, in 16, 1 and 11 occasions, respectively. The function is notional as it links independent sense-units (4). Generally, the coordinate clauses introduced by the *punctus* are semantically more different than the one introduced by the comma.

(4) “[...] They say that a good handfull of the toppes of the mirtle trie boiled in vineger, and layed on the reins ar of such a vertue that nothing can be found better, and that they stoppe all maner of fluxe of the vrine. **And** incase the reins were inflammed, the oile of roses, violets, [...]” (p. 131)

c. *To introduce authorial comments.* The author uses the first person to illustrate the topic with personal experiences (5); these statements are introduced by a *punctus* in nine cases. This function could be classified as grammatical, as it serves to separate the description of symptoms from the personal experience, and also expository as the attitude of the author is to confirm the truthfulness of the knowledge.

(5) “[...] Young maides, cheefly those that haue the pale colours, or that ar cachectickes, haue no lesse strange appetits, then women with child haue. **I** haue knowne two verie faire and honest damsels in the age of fourteen [...]” (p. 16)

d. *To introduce if-clauses.* The *punctus* precedes 64 conditional *if*-clauses, which are used to express a condition as part of a recommendation or counsel (6), or to describe symptoms, the role of the *punctus* being notional.

(6) “[...] **.If** the man or woman thorough enduring this spermaticall fluxe a long time becommeth leane and weake, it will be good to prepare some confection that is restoratiue [...]” (p. 91)

e. *To introduce commands.* The instructions for remedy preparation include imperative statements with the verbs *take*, *make*, *mix*, *boil*, and so on. The *punctus* serves in 40 cases to introduce this type of sentences. Its function is grammatical as it separates different sections of the recipe (7).

(7) “[...] for the pale colours. **_Take** of the conserue of capilli veneris, ceterach, cichorie, betonie, [...]” (p. 13)

3.2.1.3. *The period at phrase level*

The *period* in raised position is used at phrasal level as a kind of stylistic device to signal abbreviations and to circumscribe numerals (Figure 1). This function is predominantly employed in the *Table of Contents*, which justifies the high proportion of this symbol in the section.

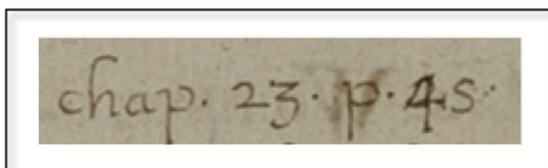


Figure 1. Example of use of the *punctus* in MS 303 in raised position to circumscribe numerals and mark abbreviations. (Chapter 23· page 45 ·)

3.2.2. *The comma*

The comma was introduced in English writings in the 16th century as an evolution from the virgule (Görlach 1991: 58), and its usage became standardised in the early 17th century (Tannenbaum 1930: 140). The high frequency of the comma in MS 303 (4042 occurrences) reflects the diversity of functions assigned to this symbol in this early stage of development. The comma generally expresses the shortest pause or

division in the text, acting at a sentential and clausal level, and assuming several of the functions previously performed by the *punctus*.

3.2.2.1. The comma at sentence level

The comma performs different structural functions with the association of both independent (coordination) and dependent (subordination and apposition) clauses. The principal cases are the following:

a. *To introduce coordinate clauses.* Coordinate clauses are preceded by a comma in 848 cases, 63% with *and*, 30% with *or*, and 5.5% with the adversative *but*. The comma acts as a connecting device between sentences referring to the same topic, and hence its function is notional (8).

(8) “[...] Young maides, chiefly those that haue the pale colours, or that ar cachectickes, [...]” (p. 16)

b. *To introduce subordinate clauses.* The scribe uses the comma to introduce subordinate clauses, regardless of whether they are nominal, adjectival or adverbial. In all cases, it indicates the clause boundaries. Thus, nominal clauses, mostly *that*-clauses, are systematically preceded by a comma as in (9), though no punctuation would be rendered nowadays. The function of the comma is both notional and explanatory, as it contributes to emphasizing the relevance of the subordinate clause.

(9) “[...] For which cause the same Hippocrates said, that womens most troublesome diseases do proceed from the matrice, [...]” (p. 5)

In the case of relative clauses, the scribe uses the comma to mark off non-restrictive clauses (10), while restrictive relative clauses remain generally unpunctuated (11). The function of the comma here is essentially notional, connecting the main and the subordinate clause.

(10) “[...] I knew a damsell of the age of fiuteene yeares, who without any euident cause liued in continuall teares and lamentations, whereof there was no other cause but the retention of the tearmes [...]” (p. 22)

(11) “[...] this cooling *commeth* most often of an outward cold that is verie violent [...]” (p. 30)

Finally, adverbial clauses are frequently linked to the main clause by a comma, as in the following cases:

(12) “[...] the baths ar much to be praised to wash the feete and the hands made of common water, **wherein** the flowers of roses and of water lillies, the leaues of willowes, of vines and of chaste trie haue boiled [...]” (p. 61)

(13) “[...] briefly to louse and cause it go forth the more easily, **when** the time is come.” (p. 4)

(14) “[...] he that is any wayes ashamed of the woman whose companie he desires, looseth suddenly all him lust, **although** he loue and desire her earnestly [...]” (p. 92)

c. *To introduce apposition.* The comma serves to introduce appositive clauses, assuming notional and expository functions (15).

(15) “[...] one shall bath himselfe in cold water, **that** is mineral, or made such by artifice [...]” (p. 83)

d. *To introduce imperative clauses in the practical section.* The comma serves to introduce imperative clauses within the practical section, mainly those verbs related to the preparation or application of the remedy, such as *make* (40x), *take* (13x), *let* (11x), *beat* (10x), *give* (9x), *mix* (8x), or *use* (7x), among others. The comma has a grammatical role in this case, provided that it delimits the different parts of the recipe (16).

(16) “[...], of branne without the /meale\ tied in a cloth one scrupull, make hereof a decoction.” (p. 27)

3.2.2.2. *The comma at clause level*

The comma is extensively employed to link items in a list and to introduce coordinate phrases. As for enumerations, the comma joints paratactic clauses in the practical section of each chapter, e.g. ingredients in a recipe (17).

(17) “[...] such as ar made of the leaues of purslane, sorell, succory, lettices, garden endiue, broad leafe, the flowers of the water lillie, the four cold seeds both great and small [...]” (p. 44)

In addition, the comma introduces coordinate phrases with *and* and *or*.

(18) “[...] paine of the head, or of the kidneys, **or** of the loines [...]” (p. 57)

(19) “[...] among rootes raggewoort, turneps, white chibols, leekes, garlike boiled, water nuts, sea holme, **and** nauews [...]” (p. 105)

The comma is also employed to introduce tag phrases such as *to the end that* (20), *that is to say*, *not only*, *such as*, assuming an expository function.

(20) “[...] but by vomiting, **to the end that** the course of the humours may be turned away [...]” (p. 90)

Other uses of the comma are the marking of the boundaries of quantities in a preparation (21), and occasionally the separation of clause constituents e.g. verb-complement (22). The latter use draws the attention of the reader towards the second part of the clause, hence assuming an expository role.

(21) “Take of acacia, mastick, frankincense, the flowre of the wilde pomegranate, gumme arabick, bole-Armeniack, sanguis draconis, **of** each one dramme, [...]” (p. 63)

(22) “The sixth **is, the** passions of the mind [...]” (p. 95)

3.2.3. *The colon*

The colon is the third most frequent punctuation mark in MS 303, and the second after the comma in the *Chapter's* section. Historically, the colon derived from the raised *period*, and it was already in use in the 14th century (Petti 1977: 26). This mark initially indicated a pause of medium length, but after the introduction of the semicolon at the end of the 16th century, it evolved as “an indicator of text coherence expressing logically consecutive or adversative relations” (Görlach 1991: 58). According to Schou, at the beginning of the 17th century, the colon was preferred to the full stop when a semantic dependency existed between independent clauses by the coreferential subjects (2007: 200). In MS 303, the colon is employed at a sentential level, organizing long complex sentences that are semantically related.

3.2.3.1. *The colon at sentential level*

The colon organises the structure of sentences together with the comma and the semicolon, acting as a connector between major units. Thus, we witness the following situations:

a. *To connect coordinate clauses.* The colon is the second most frequent punctuation mark to introduce coordination, partially overlapping with the comma. However, coordinate clauses marked by a colon contain more contrasting information than those introduced by a comma. In (23) the colon introduces a coordinate clause proposing a remedy for a different condition than the one explained in the previous sentence, though all of them could be semantically considered as treatments. Interestingly enough, the coordination signalled by a colon occurs more frequently with *or* (45%), than with *and* (29%) or *but* (26%). Hence, the colon is preferably employed to connect alternative relationships assuming a notional function.

(23) “The water is singular for paining, sownding and other passions of the heart proceeding of a cold windie cause, or of vapours: **and** for melancholick affections, in steed of distilling the hogs hart, one may lard the same with cloues [...]” (p. 15)

It can be gathered that the function of the colon was not fully standardised in the 17th century, as its role partially coincided with the comma, and in many cases, the present-day option would be a *period*.

b. *To introduce sentential relative clauses.* The colon is systematically used to introduce this particular type of relative clause (10x). The examples below show the colon fulfilling a notional function as it links the relative clause with the preceding clause(s) (24).

(24) “It happeneth oftentimes that young men and damsels as well married as vnmarried do defile themselues in their sleep as if they were sporting together: **which** happeneth perhappes thorough lying on the back [...]” (p. 68)

c. *To introduce conditional clauses.* The colon is employed to mark the beginning of *if*-clauses in 33 occasions. Example (25) shows how the scribe purposely uses the colon to provide the sentence with cohesion, as remedies are sequentially given together with the corresponding body part.

(25) “If the liuer, of diacurcuma, of diarrhodon of triacle, of mithridat: chiefly when the offence of the liuer commeth of cold: **if the heart** be the cause, one should vse cordial things such as ar the electuaries diamargariton frigidum, [...] : **if the stomach** be the occasion, comfort and strength it [...]” (p. 99)

d. *To delimit different parts within a section.* The colon is frequently used to mark off the end of sense-units, mostly in the practical section of each

chapter. In example (26) the first imperative clause refers to the preparation of the remedy, while the second is devoted to the application of the treatment. Note that capitalization is used to highlight the beginning of a new remedy.

(26) “[...] **:let** all boile together so long till it become thick: **take** a spoonfull of this confection euerie euening [...] **:Take** mustard seed, the roote of panax, [...]” (p. 114)

3.2.4. The semicolon

The semicolon, previously known as *comma-colon*,¹³ enters the English language in the second half of the sixteenth century (Petti 1977: 26).¹⁴ The semicolon was often employed “to call attention to a pronounced transition from one idea to another” (Tannenbaum 1930: 142), or to “separate words that are opposed in meaning to each other” (Husband and Husband 1905: 131–2). In addition, according to Clapham’s system, the semicolon connects clauses that are semantically more related to each other than those linked by the colon (Salmon 1962: 352).¹⁵

In MS 303, the semicolon is sporadically used (82 instances) accounting for the 1.2% of all punctuation marks. It divides long pieces of text always at a sentential level, its role sometimes overlapping with the comma and/or the colon. The functions of the semicolon are the following:

- a. *To delimit different parts within the practical section.* The semicolon is frequently used to introduce different sections in recipes, like the colon

¹³ The word *semicolon* is attributed to Charles Butler (1633), although other terms for the symbol were also in use, such as *comma-colon*, *hemi-colon*, *sub-colon* (see Salmon 1988: 297).

¹⁴ It was originally proposed by Pietro Bembo in the 1490s, and later, the Italian printer Aldus Manutius used the semicolon to indicate an intermediate pause between the comma and the colon (Parkes 1992: 49; Schou 2007: 200).

¹⁵ The system proposed by Henoah Clapham in the early 17th century is analysed by Salmon (1962). In Clapham’s punctuation, the text was organised by paragraphs composed of semantically linked units, and those by sentences formed by structural independent units. Thus, the paragraphs were divided into large units by *periods*, while the sentence was split by colons when it contained two or more semantically related statements, and by semicolons, if there was a closer relationship. Clapham’s punctuation system also coincides to a great extent with the rules proposed in Alexander Gill’s *Logonomia Anglica* (1619) and Charles Butler’s *English Grammar* (1633).

and the comma. In addition, the word after the semicolon, an imperative verb, is generally capitalised so as to make clear the beginning of the recipe section (27).

(27) “by frequent glysters somewhat sharpe **such as these ar:** Take of mercurie, pellitorie of the wall,” (p. 27)

b. *To introduce coordination.* The semicolon occurs only in seven coordinate sentences (*and* 2x, *or* 4x, *but* 1x), though a subtle difference can be appreciated in comparison with the colon, employed to coordinate more contrasting information than the semicolon. As shown in (28), the semicolon introduces a coordinate sentence that is part of a bigger unit to explaining the causes of a condition. This role of the semicolon, chiefly notional, would be performed by a comma in Present-day English. The scribe’s usage of punctuation evidently pursues the organization of the text according to syntactic rules, but also considering the semantic value of the text.

(28) “[...] weake: the other cause proceedeth chiefly of the qualitie of the seed, which is too abundant, too sharp or too subtill: most often of the naturall weaknes of the retentive vertue of the spermaticall vessels, or of the too great softnes and loosnesse thereof, such as was in him that when he tooke a glyster or went to the stoole was accustomed to let his seed go from him; **and** in another who for the smallest thought or dreame of Venus affaires voided pure blood with no lesse pleasure then he did his seed :[...]

c. *To call the attention towards what follows.* The semicolon assumes an expository function, used to indicate the importance of the following statement, as in the example (29).

(29) “So *consequently* the colour of the skinne is the same with the colour of the menstruous blood retained in maides, **namely;** pale when the menstruous blood is like whey and waterish [...]” (p. 12)

3.3. *Comparative analysis*

The previous section reveals that certain overlapping occurs among punctuation marks. Thus, in order to provide a quantitative overview, Table 3 shows the occurrence of punctuation symbols in coordinate, subordinate and imperative clauses. The data corroborate that the comma acts mainly as a connector device, by linking coordinate clauses and

phrases as well as introducing subordination, with a notional function. The colon, in turn, partially overlaps with the comma, even though it is by far less frequent. As expected, the *punctus* marginally appears in coordination and subordination, except for the case of *if*-clauses, where it assumes a primary role. Interestingly, imperative clauses, which predominate in the practical section, are largely introduced by the comma and the colon. In this case, they assume a grammatical function separating different sections within a recipe.

Table 3. Comparison of structural functions of punctuation marks in MS 303 (absolute values).

	<i>punctus</i>	comma	colon	semicolon
<i>and</i>	16	533	36	2
<i>or</i>	2	254	57	4
<i>but</i>	11	47	33	1
<i>which</i>	0	124	10	-
<i>that</i>	0	76	3	-
<i>if-clauses</i>	64	35	33	1
Imperative	43	127	142	43

The results corroborate the fact that punctuation in MS 303 serves to arrange the information not only according to grammatical rules but also according to the semantic structure of the text. Thus, symbols can be organised into a hierarchical rank, the *punctus* being at the top and the comma at the bottom. The *punctus* serves to separate large units of text that fairly correspond with different sections, e.g. *causes*, *symptoms*, and *recipes*, acting mostly at discourse and sentential level, and fulfilling a grammatical function in Lucas' theory. Those long stretches of text are further subdivided into smaller units by the colon. As commented by Görlach, the colon acts as an indicator of text coherence conveying consecutive and adversative relationships (1991: 58), serving to arrange syntactic sense-units that are semantically related. This main task is performed through different functions, introducing coordination, as well as different types of subordination (sentential relatives, conditional

clauses), indicating the change of topic or subsection. The semicolon, in turn, occupies an intermediate position between the colon and the comma. Its functions are perhaps less defined and partially overlap with those of the colon and the comma. However, some examples seem to confirm what Clapham's argument, that the semicolon is used to link more similar semantic clauses than those linked by the colon. Its role is generally more notional than grammatical. Finally, the comma is the most ubiquitous symbol in MS 303, and the lowest in the hierarchy of the punctuation system. It is the only mark that acts both at a sentential and clausal level expressing the closest relationships between units, by means of coordination, subordination and listing elements. The comma has primarily a notional function, though in some cases its role is grammatical, e.g. recipes.

3.3.1. Punctuation patterns in two different discourse types

This last section of the study is concerned with the analysis of the relationship between the punctuation patterns and the discourse types. For this purpose, we have considered each chapter as an independent unit, where two principal discourse types are identified. On the one hand, the theoretical introduction, containing a description of the condition, the causes, and the symptoms. This typology is the result of the blending between the Latin conventional *commentaries* and *compilations* as described in Taavitsainen (2004: 67). The theoretical part is always placed at the beginning of each chapter, and it generally ends with a *punctus* (22x), or occasionally with a colon (5x). On the other hand, the practical section contains medical counsels and recipes. This last text-type is well described by Görlach (1992), Carroll (1999), Alonso-Almeida (2001) and Taavitsainen (2001), being further subdivided into ingredients, preparation, application, and efficacy.

The distribution of punctuation symbols among the chapters remains relatively homogeneous as confirmed by the low standard deviation presented in Figure 2. This means that the scribe applied a consistent pattern of punctuation throughout the whole text. However, an in-depth analysis reveals that the punctuation marks assume different roles in each typology. For the purpose of analysing these roles, a prototypical chapter of the text is described.

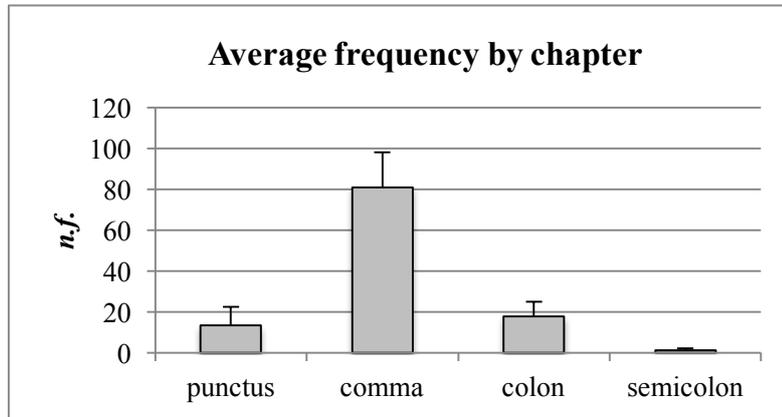


Figure 2. Distribution of punctuation marks in the chapters (bars represent average values and upper lines Standard Deviation)

For convenience, Chapter 30 has been selected for the analysis of punctuation in theoretical and practical discourse. The theoretical part begins with a long sentence describing the causes of the condition, which can be considered a semantic unit. The end of this major structure is marked by a *punctus*, being internally further subdivided by colons, and commas at a lower level. The colon serves to introduce a sentential relative (line 3), and five coordinate clauses with *or* (lines 5, 7, 8, 12 and 13). On the other hand, the comma is employed to mark coordination (lines 4, 6, 8), conditional clauses (line 5), apposition (line 10), and relative and adverbial clauses (lines 6, 11).

1 “It happeneth oftentimes that young men and damsels as well
 2 married as vnmarried do defile themselues in their sleep as if they
 3 were sporting together; which happeneth perhappes thorough
 4 lying on the back, or on a feather bedde that is too hott,
 5 cheefly if the body be of a thin texture and hott constitution: or
 6 after vsing of manie hott meates, that ar spiced, or nourish
 7 much: or because one hath drunk much sweet or new wine, or
 8 that is spiced, such as /hypocras\ and cleret ar: or because they
 9 haue entered into some deepe thoughts of loue in the day
 10 time, yea seen and talked with faire women, handled their
 11 teates or their priuie parts, whereof the shadow sheweth itselfe
 12 in dreaming: or because one hath abstained a long time from
 13 the exercise of Venus: or because the seed is too abundant or
 14 too hott or too sharp.” (p. 68)

Accordingly, the *punctus* assumes the major grammatical function according to Lucas’ rationale as it separates semantic units, e.g. causes from symptoms. The colon, the following in the hierarchical position, performs in this case a notional function by connecting syntactic units, e.g. sentential relative and coordination. The comma, in turn, functions as a notional marker linking closer semantic units by means of subordination and coordination.

As for the practical section, it starts by a counsel and continues with the prototypical recipe structure (30). Thus, ingredients are introduced by a semicolon, the preparation by a comma, and the application by a colon, all of them assuming grammatical functions. The end of the recipe is signalled by a colon. In addition, the comma is used as a notional marker to list the ingredients.

(30) “: moreouer, one must vse this confection; **Take** of the seed of lettice three drammes, of the seed of rue half a dramme, of the seed of chast-trie one dramme, together with a sufficient quantitie of sugar dissolued in plantine water, make an electuarie in tablets; take one of these tablets euerie euening going to bed [...]: Take of the seed of rue, [...]” (p. 69)

In other recipes, however, the comma is predominantly used to mark each section (31), assuming a grammatical role, although it also serves as a notional device introducing subordination and coordination.

(31) “₂ Take of the iuyce of fennell, of the iuyce of both the mints purified, of each half a pound, of the decoction of the mirtle and of rhubarbe four ounces, with a sufficient quantitie of sugar rosat₂ make a sirop hereof boiled measurably, whereof you shall dissolue an ounce and an half in three ounces of the decoction of the seed of the mirtle tree, of the flowers of the water lillie, and of the shels of acornes₂ take it warme in a morning.” (p. 79)

As a summary, in the theoretical discourse the *punctus* marks the major divisions (grammatical function), whereas the colon, the semicolon and the comma organise the information within each subsection by means of coordination and subordination (notional function). However, in the practical discourse, the different parts of the recipe are introduced by a comma, a colon or a semicolon (with a grammatical function), and the comma assumes again the organization of each part by linking paratactic constructions, coordination and subordination (with a notional function).

The comparison of the recipe in MS 303 with Alonso-Almeida’s analysis of a 15th-century text reveals a shift in the functions assigned to each punctuation mark. Specifically, Table 4 shows that many of the notional functions assigned to the *punctus* in the 15th-century were transferred to the comma, the colon and the semicolon in the 17th-century. The *punctus* therefore remained almost exclusively as a grammatical marker or as a stylistic device (signalling abbreviations and numerals). The partial overlapping of the comma, the colon and the semicolon tentatively confirms the transition towards the standardization of the punctuation system in English.

Table 4. Comparison of punctuation functions between a 15th-century recipe (Alonso-Almeida 2001) and MS 303 examples

	15th-century			17th-century			
	<i>punctus</i>	colon	virgule	<i>punctus</i>	colon	comma	semicolon
To separate sections	+	+	+	+	+	+	+
End of recipe	+	+	+	+			
To mark a change of topic	+		+			+	
To show coordination	+				+	+	
To associate subordinates to main clauses	+				+	+	+
To indicate relationship between phrases in a clause	+					+	
To indicate the elements which conform phrases in a clause	+		+			+	
To associate the antecedent to the relative clause	+				+	+	+
To signal numerals	+			+			
To mark abbreviations				+			

4. Conclusion

The main objective of this study was to determine which patterns of punctuation were in use in a 17th-century medical academic treatise, the first book of MS 303. For this purpose, the most frequent punctuation symbols (those accounting for 99% of the instances) were described considering their function according to the model proposed by Lucas (1971). In addition, the punctuation patterns applied within the two discourse types, theoretical and practical, were also identified. The analysis of the data led us to the following conclusions:

First, punctuation was not randomly applied by the scribe, quite the contrary it followed a set of rules, based on their grammatical and semantic roles. As expected, punctuation did not have a rhetorical but a grammatical or logical function. The use of punctuation to differentiate or to joint meaningful units can be connected with the concept that pointing had in the latter Middle Ages, particularly in handwritten material, as a device applied to emphasise the *sensus* of the text with the purpose of avoiding confusion to the readers (Parkes 1978: 133, 137).

Second, the punctuation system employed contributed largely to organise the information within the text, but more importantly, it served to avoid any misinterpretation of meaning. Accuracy in medical writing is not merely a question of style: early Modern medical texts, even though still influenced by the classical Greek science, developed towards a more empirical science. Consequently, the way in which the information was organised in the vernacular played a fundamental role in the understanding and development of the medical practice.

Third, the introduction of new symbols in the early Modern inventory of punctuation (the comma and the semicolon) seems to have rearranged the functions assigned traditionally to the *punctus* and the colon, although some overlapping still occurred, particularly between the *punctus* and the colon, and the comma and the semicolon.

Fourth, punctuation marks were arranged according to a hierarchical pattern with the *punctus* in the uppermost position and the comma in the lowest. Thus, the *punctus* was used to separate major discourse types or topics, assuming a grammatical function according to Lucas' rationale. Next in the scale is the colon, which assumed many of the syntactic functions rendered by the *period* in Present-day English. Its function was grammatical so as to divide different statements that were semantically related within a major chunk of information, and notional so as to

introduce sentential relative clauses. The semicolon occurred in a lower proportion in the text, which is probably the consequence of its late introduction in the punctuation system. It occupied an intermediate position between the colon and the comma, being commonly employed to separate sections in the recipes. The comma was the most frequent punctuation mark with different roles, such as introducing coordination and subordination, whether nominal, adjectival or adverbial, to link coordinate phrases and elements in a list (enumeration), and occasionally to mark off clausal constituents (verb-complement, subject-verb).

Fifth, different types of discourse, i.e. theoretical and practical, presented slightly distinctive punctuation practices. Thus, the theoretical discourse was composed by long complex sentences that conform a semantic unit, e.g. causes and symptoms, which needed to be further subdivided into shorter sense-units, mainly through coordination and subordination, with the colon and the comma. On the other hand, the practical discourse was largely represented by counsels and recipes. Recipes, in particular, followed a well-established pattern in which simple sentences predominated, enumeration, imperative forms, and few subordinations, while the colon and the semicolon fulfilled a grammatical function, and the comma had a double function, one grammatical by introducing new sections in the recipe, and another notional by connecting units through coordination, subordination and paratactic constructions.

Finally, I wish to suggest, albeit tentatively, that this study contributes to a better understanding of the scribal punctuation practice in the scientific literature, confirming that the punctuation marks were applied, not randomly, but according to grammatical and semantic rules, having as a primary objective to organise the information and to facilitate the understanding of the text. In this line, it would also be interesting to investigate to what extent the development of English punctuation has been influenced by the process of vernacularization occurred in the early Modern period.

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Appendix

Table 5. Raw figures of punctuation marks in MS 303 for each section.

sections	Punctuation mark					Total
	,	.	:	;	other marks	
<i>Preface</i>	105	14	14	3	9	145
<i>Table of Contents</i>	75	761	2	1	4	843
<i>Chapters</i>	3862	565	1014	78	55	5574
Total	4042	1340	1030	82	68	6562