‘My Intent Is Onelie to Further Those That Be Willing to Learne’: The Lexicon of Mid-Sixteenth-Century Surgical Books in Context

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1. Introduction

When master surgeon Thomas Gale sat down to write a preface for his translation of Galen’s *Certaine VVorkes of Galens, called Methodus medendi* (1566),[1] custom called for an explanation for the decision to make medical knowledge available in English.[2] *Methodus medendi*, as the text is usually referred to, was one of the most significant medical books during the Middle Ages and the Renaissance, and by translating it into English Gale was breaking new and arguably controversial ground.[3] But he was not alone. Like William Bullein, John Bannister, and William Clowes, Gale was a member of an influential group of surgeons that began to make surgical writing more available and accessible to the young surgeons of the Company. Gale's argument, emphatically stated in the preface, was that his ‘intent is onelie to further those that be willing to learne’, meaning the apprentices and younger members of the Company who suffered from ‘defect and imbecilitie’ when it came to “the speculative part” of the art (1566: 39v).[4] The surgeons argued that there was nothing inherently wrong with writing about medicine in English—Hippocrates, Galen and even the Arab masters had all written in their native languages, as Gale noted in the preface—so long as that knowledge was distributed only to acknowledged members of the medical community.

The inspiration for this short study came from the programmatic nature of this effort to vernacularise medical writing, and surgical writing in particular. If the surgeons were so keen on improving things by making surgical knowledge available in English, it would make sense for them to have taken some steps to ensure that the language they used was coherent and up-to-date. Consequently, my hypothesis was that we should be able to observe a linguistic difference between the earliest surgical books printed in English and those that emerged around the middle of the sixteenth century as part of the surge in new and translated works. It is well-attested that the different traditions of professional development and knowledge transfer within the medical community had resulted in at least partially separate discursive and terminological practices as well.[5] This was particularly bad news for the surgeons, because by writing in a noticeably different and less learned style than the physicians emphasized the differences between the two professions, something the surgeons were intent on

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1 For discussion, see Pahta et al. (2011: 181–182). The second edition of *Certaine VVorkes of Galens, called Methodus Medendi* was published, with the same preface, in 1586.

2 See Wear (2000: 219–221).

3 See, e.g., Bylebell (1982: 161–165).

4 Gale further identified his audience, writing that he intended the translation for ‘prentises and young men, which haue not beene trained vp in schooles, neither yet can vnderstand the Greeke or Latine tongue’ (1563: A3v).

5 See, e.g., Tyrkkö (2006 and 2011), and Pahta et al (2010). The problem of divergent terminologies was well-attested by contemporaries, who frequently complained about the lack of a codified system for naming illnesses, parts of the body and items of *materia medica* meant that exact references were difficult to make. Not only did this make arguments and instructions difficult to follow, but could even lead to dangerous misunderstandings when the wrong plant or medicament was used.

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avoiding. Given that the surgical reformers knew each other well, it would make sense to assume that they would have aspired to unify at least some aspects of the professional jargon. Using multivariate statistical methods, I set out to test this hypothesis by taking an entirely corpus-driven approach to text typology and analysed lexical usage in surgical and more general medical writing. The findings suggest that the surgical authors of the mid-sixteenth century did indeed make a break with tradition, but that instead of creating a new unified style, they opted to blend in with other fields of medical writing.

2. Background

In the sixteenth century, the London medical marketplace was dominated by three formally recognised livery companies: physicians, surgeons, and apothecaries. At the top of the heap was the small group of university-trained physicians who were intimately familiar with classical natural philosophy and, crucially, able to read Latin. They governed the medical professions by virtue of a royal charter empowering the College of Physicians to oversee medical practice in London and within seven miles of her walls. The majority of everyday medical care was provided by surgeons and apothecaries, whose training was through apprenticeship. Despite the fact that their numbers were vast compared to those of physicians and their methods often more well-grounded in practice (Lindemann 2010: 262–268), these two professions were considered subservient to physicians in the hierarchy of medicine. Most surgeons and apothecaries could not read Latin, which meant that the all-important Latinate literature which formed the backbone of all contemporary theoretical writing was largely inaccessible to them.[6] By the middle of the sixteenth century, only two printed surgical books were available in English, Hieronymous Braunschweig's *Handy Warke of Surgeri* (1525) and John De Vigo's *Most Excellent Workes of Chirurgerye* (1543). Although vernacular manuscripts were available in modest volume, some of them even translations of very highly regarded authors like Lanfranc of Milan and Guy de Chauliac, the relatively small number of copies in circulation meant that most practitioners had few, if any, written reference works.[7] Access to translations was thus seen as paramount if the surgeons were to improve their role in society.

Things started changing in 1540 when the separate companies of barbers and surgeons were merged to form the Company of Barber-Surgeons.[8] Only a few years later, the practice of non-invasive surgery was opened up to anyone, and the surgeons felt their profession was under attack. The leaders of the newly-formed guild started taking steps to improve the social and professional standing of the guild's members, such as arranging lectures on anatomy for both members and physicians, and working closely with physicians to denounce charlatans and quacks.[9] The vernacularisation of surgical books was to be another important part of the effort.[10] Drawing considerable inspiration from recent French vernacularisations of Galen works and especially from *De humani corporis fabrica* (1543),[11] the game-changing anatomy by Andreas Vesalius, the masters set in motion what would turn out to be a very successful campaign both to translate surgical books into the vernacular and to produce new works in English.[12] In addition those written by Gale, a number of other important books such as John Hall's *Chirurgia Parva Lanfranci* (1565) and John Banister's *Treatise of Chirurgery* (1575) were soon printed. Furdell notes that Gale's considerable personal influence may be seen in the way a surge of books appeared immediately after Vicary's death as Gale took control of the Company (2001: 85). Some, like

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6 See Furdell (2002: 83).

7 See Curth (2007: 25–26).

8 The original Company of Surgeons was chartered in 1462 but it had fairly little institutional influence.

9 See O'Malley (1961: 15).

10 Some forward-thinking physicians like William Cuningham encouraged the surgeons' efforts by contributing encouraging prefatory pieces for their books. See Tyrkkö (2011).

11 See Pettegree (2010: 300–301). A pirated edition of Vesalius' anatomy was published by Thomas Geminus with the title *Compendiosa totius anatomie delineatio* (1553). Most of the text was pirated from the first edition of Vicary's *Anatomie of the bodie of man* (1548), itself a copy of a medieval manuscript by Henri de Mondeville (Wellcome MS 564). See Thomas (2006).

12 This period corresponds roughly with what McLean has identified as the second major period of early medical printing, running from 1525 to 1560. The majority of the major surgical books came out in the third period.

Gale, funded the publishing of their medical books themselves. Gale commissioned the work from Rowland Hall, a highly influential printer who had printed the Geneva Bible only a few years before.

3. The corpus

The study was carried out using a subset of the *Early Modern English Medical Texts* (EMEMT) corpus.[13] At approximately 2 million words, the corpus covers a great variety of medical writing from the sixteenth and seventeenth centuries. This study uses a collection of 69 texts printed between 1500 and 1650 (see Table 1 and Primary References). The texts were divided into three groups: surgical texts (sub-corpus A), texts on specific illnesses (sub-corpus B) and health guides written for the newly emerging literate middle class (sub-corpus C). The 19 surgical texts were further divided into three groups in accordance with the research question. Group one, or sub-corpus A1, comprises five texts associated with the late medieval tradition of surgical writing.[14] The six texts of sub-corpus A2 were written by known members of the reform movement, and sub-corpus A3 represents subsequent surgical writing primarily printed during the first half of the seventeenth century.

Table 1. Sub corpora compiled from EMEMT, 1500–1650

	sub-corpus	Texts	Word count
A: surgical writing	A1: surgical texts of the medieval tradition	5	52,934
	A2: surgical texts by the reformers	6	62,508
	A3: later surgical writing	8	82,385
B: specialized treatises		31	287,180
C: remedy books and health guides		19	172,563
	Total	69	657,570

4. On cluster analysis and standardized spelling

This study takes a corpus-driven approach to text typology with the specific aim of discovering whether significant differences can be observed between the lexical frequency patterns of sixteenth-century surgical texts belonging to different extra-linguistically determined groups.[15] The greatest benefit of multivariate statistical methods over intuitive impressions lies not only in the verifiable and objective nature of statistical evidence, but also in the power that computational approaches bring to identifying small but systematic variations and interrelations in complex datasets. In corpus linguistics, these methods were made popular by Biber (1988), whose application of *multidimensional factor analysis* to the identification of discourse varieties using frequency differences of discreet linguistic features is considered seminal.[16] Multivariate methods are also used in literary stylistics and forensic linguistics for the purpose of authorship attribution. According to Hoover, the methods 'assume that word frequencies are largely outside the author's conscious control because they result from habits that are stable enough to create a verbal fingerprint' (2007: 175).[17] The present study makes use of *hierarchical cluster analysis*,[18] a statistical technique which arranges texts into clusters on the basis of similarity of lexical frequencies.[19] Once identified, clusters can be explained by extralinguistic factors such as authorship, genre, translation status, original source language, printing history, or anything else

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13 For descriptions and discussion of the categories, in EMEMT, see Taavitsainen et al (2010). See also http://www.helsinki.fi/varieng/CoRD/corpora/CEEM/EMEMTindex.html

14 For discussion, see, e.g., Pelling and Webster (1979) and Tyrkkö (2010).

15 For other methods of corpus-driven lexical analysis, see Kilgarriff (2001), Takami (2004) and Groom (2010).

16 Similar methods have since been used on historical corpora by Taavitsainen (1993) and Moessner (2009), for instance.

17 For a solid introduction to the methods of authorship attribution, see Love (2002).

18 The analysis was carried out with the statistical tool Minitab16.

19 For a general introduction, see Hair et al. (2010: 505–515). For examples of studies applying multivariate methods to language data, see, e.g., Hoover (2001, 2002 and 2010) and Burrows (2004).

we may know about the texts. I test the assumption here that the same methods can be applied to identifying stylistic trends rather than the styles of individual authors. While styles related to disciplinary discourse are not indicative of personal style, they are often quite strictly observed and enforced, and should thus offer the same potential for stylometric discovery.

The stylometric approach to cluster analysis involves taking a selection of the most frequent words in a corpus and comparing their standardized frequencies across the range of texts to determine their statistical distances.[20] When this is done for each word in each text, the data can be used to calculate a similarity metric.[21] The range of frequent words is typically somewhere between 50 and 1,000, depending on the specific research design and objectives.[22] The method of choice for less than 250 samples is hierarchical or agglomerative clustering, which was also used here. Following Burrows (2004), the clusters were calculated using Ward's method utilizing squared Euclidean distances, with variables standardized.[23] Dendrograms were used for visualizing the results, with the number of clusters determined experimentally.[24]

One of the benefits of statistical clustering is that it allows us to identify outliers, or atypical data points. On a theoretical level, outliers can indicate one of three things: observations that do not belong in the study for one reason or another, genuinely unusual examples, and observations from an insufficiently sampled section of the population. In the case of the texts examined here, all the books belong unequivocally to the genre of medical writing, thus ruling out explanation one. Discriminating between explanations two and three is much more difficult and best attempted with some philological insight, but as the discussion will show, a reasonably straightforward explanation can be provided in most cases cases where a text appears to stand out from the others.

A few words must also be said about the spelling standardisation of EMEMT, without which this study could not have been attempted at all. A standardized-spelling version of EMEMT was made available with the main corpus. It was produced semi-automatically with Variant Detector 2 (VARD2), a useful piece of software developed by Alistair Baron (see Lehto, Baron, et al. 2011). The process of 'varding' a corpus involves the application of a set of algorithms which allows the mapping of all variant spellings of a word to a single present-day equivalent.[25] Although the varded version is not perfect Present-Day English, it does facilitate searches for specific lexical items with greater convenience. More importantly, the standardised version allows the application of statistical methods which rely on comparing frequencies of word tokens (see Baron, Rayson and Archer 2009). The precision and recall rates of automated spelling standardisation affect the analysis to a considerable degree, because the proportional frequencies of pre-standard spellings are different for different word

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[20] Other measures, such as Burrow's Zeta and Iota, can be used for the analysis of words of moderate and low frequencies, respectively. See, e.g., Hoover (2007).

[21] 'Word' is used here in reference to a unique type in the lexicon.

[22] The concept of 'most frequent words' is frequently abbreviated as MFW. A common nomenclature is to refer to the number of words selected followed by the abbreviation, e.g., 500 MFW for 500 most frequent words. For more on the methodology, see Hoover (2003). In normal samples of natural language, function words the most common (articles, prepositions, auxiliary words, etc.) and the most frequent are topic-indicating lexical words such as frequently recurring proper names and verbs associated with a specific activity.

[23] In the squared Euclidean method distances are computed by summing the squared differences of each variable's value. The frequencies of individual variables, in this instance words, were standardized to prevent the scale differences from affecting the analysis. Ward's is a method of hierarchical clustering where the distance between clusters is a function of the squared Euclidean distance between the cluster centroids. Hair et al. note that the squared Euclidean distance measure has the tendency to produce clusters of roughly similar size, something that needs to be addressed in later studies (2010: 508–509).

[24] In the dendrograms, the y-axis represents similarity, with figures below zero indicating below average similarity. Note that the distances indicate differences between cluster centroids, and thus the distance between individual data points may be somewhat greater or smaller.

[25] VARD does not perform lemmatisation or semantic disambiguation. In addition to its four-part algorithm for identifying and normalising non-standard forms, VARD also makes use of a library that can be expanded through user input. Such training data can improve the accuracy of varding considerably, but it also makes each project unique by producing a version of the corpus that another project, starting with the same source data, might not end up with.

forms. The attempt to quantify such a great number of variables accurately would go beyond the scope of this study, and thus the proverbial grain of salt is recommended when the findings are considered.[26]

Apart from challenges created by spelling, the research design was affected by the limits imposed by the primary data. Typically, stylometric analysis of literary texts is carried out using full-length texts, which means that the word counts are relatively high giving a good overall view of individual authors' characteristic lexicon and lexical patterns. By contrast, EMEMT is a corpus of extracts which means that there is a degree of randomness when it comes to representativeness. For example, if a long treatise that covers all areas of surgery and anatomy happens to be represented in the corpus by a 10,000 word extract which only discusses the treatment of head injuries, the lexicon would be markedly different than it would have been had the extract dealt with the anatomy of the foot.

5. Findings

The first cluster analysis features 500 MFW in surgical texts (See Figure 1). The resulting dendrogram shows a separate branch on the left, which indicates a relatively high degree of similarity between the five texts of sub-corpus A1, or texts representing the medieval tradition. It is noteworthy that the cluster agrees perfectly with the extralinguistic data: all texts with a medieval pedigree are included and none of the others. Braunschweig's *Handy Werke of Surgeri* (1525), a translation from German to Dutch and then from Dutch to English, stands out at a slight distance from the others. Notable even among contemporary texts for its distinct orthography, the text features among other things nearly four times as many superscripted brevigraphs as contemporary medical books.[27] The unusual typography and spelling persisted to some extent into the standardized version of the corpus, which in part accounts for the clustering.

The texts of sub corpora A2 and A3 are organised into clusters in less obvious ways. The significant finding here is that sub-corpus A2 does not stand out as a distinct group, but rather blends in with the generic style of surgical writing that develops over the next few decades. This suggests that the members of the reform movement did not aspire to establish a new uniform style of writing—or, if they did, they failed. On the other hand, the evidence of the present study does support the argument that a concerted effort was made to move away from the medieval style.

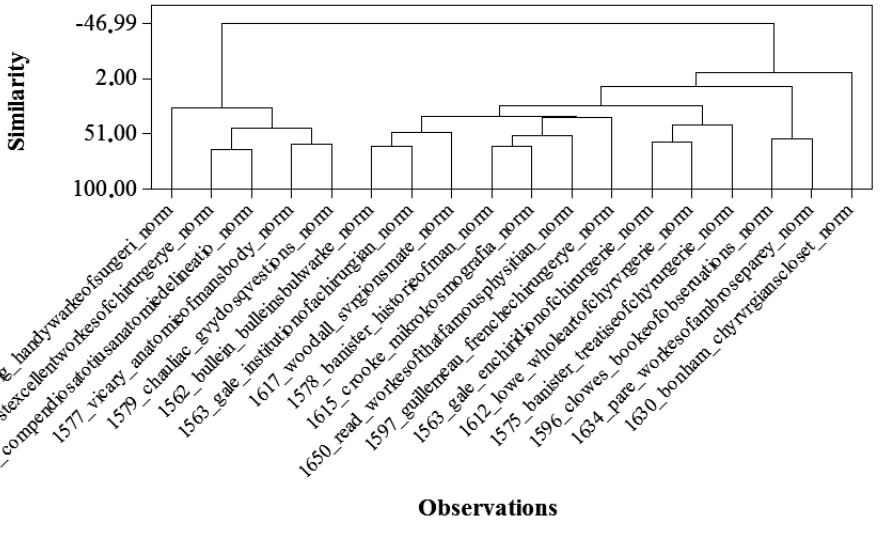

Figure 1. Clustering of surgical texts, 500 MFW

[26] A study looking into the effect of spelling standardisation and the accuracy of automatic part-of-speech tagging is currently in progress by Turo Hiltunen, Raisa Oinonen and the author.

[27] The book was translated by an anonymous translator and printed by Peter Treveris. See Tyrkkö (submitted a).

Restrictions of space allow only a few tentative notes on sub corpora A2 and A3. Bonham's *Chyrvrgians closet* (1630) appears quite dissimilar from all the other surgical texts, which can be explained by the topic. The book is an antidotary, or recipe collection, written specifically for surgeons, and the lexical repertoire and stylistic features of recipes are clearly different from normal running prose. Clowes (1596) and Paré (1634) also branch off from the main group, showing a fairly close similarity between each other but not much at all with the rest. Clowes includes recipes scattered among prose, while *Workes of Ambrose Parey,* translated from Latin by George Baker, is an important surgical collection written by Ambrosius Paré, one of the most celebrated physicians of the time. The extract in the corpus includes case studies, making it somewhat similar to recipe collections by virtue of short paragraphs and frequent references to illnesses and cures. Instructive texts also group together, as demonstrated by the minor branch consisting of William Bullein's *Bulleins bulwarke* (1562) and Thomas Gale's *Institution of a chirurgian* (1563). Both were written in dialogic format, a classic scholastic trope that survived in instructional writing until the seventeenth century.[28] The dialogic style is reflected in the lexis by a high frequency of first and second person personal pronouns, interrogative pronouns and other speech-like discourse features. Woodall's *Svrgions mate* (1617) is another instructional text in the same vein, branched one level up from Bullein (1562) and Gale (1563b).

The next step was to extend the analysis to the entire corpus to see whether the surgical texts appear different from contemporary medical writing. This round of analysis includes lexical words, with the effect that frequent topical words affect the analysis quite considerably. Predictably, we see texts clustering together according to their extralinguistic categories. The medieval medical texts (sub-corpus A1) again stand out as a separate branch, not only from the other surgical texts but from the rest of the corpus. Figure 2 presents a dendrogram computed using 500 MFW.

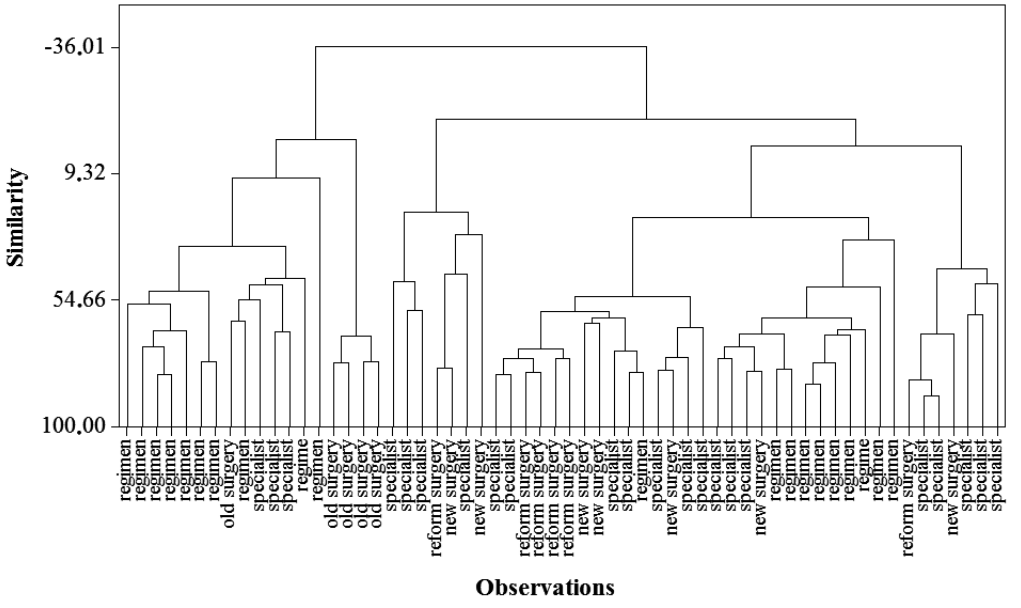

Figure 2**.** Clustering of all texts by type, 500 MFW

[28] See Taavitsainen (1999). The most typical set up for an instructional dialogue was between master and student, but, as in Bullein (1562), the dialogue participants could occasionally be personified ailments and abstract concepts.

Next, I decided to look at the effect of removing topic-indicating content words from the analysis. The pruning was performed manually by starting with the most frequent words and removing content words until the 250 most frequent non-topical words had been identified. For this stage of the analysis I only removed words which would clearly tie a text to a specific medical topic or issue, such as those referring to parts of the body and specific ailments. Generic adjectives, nouns and lexical verbs were retained. Figure 3 present the 250 MFW dendrogram.

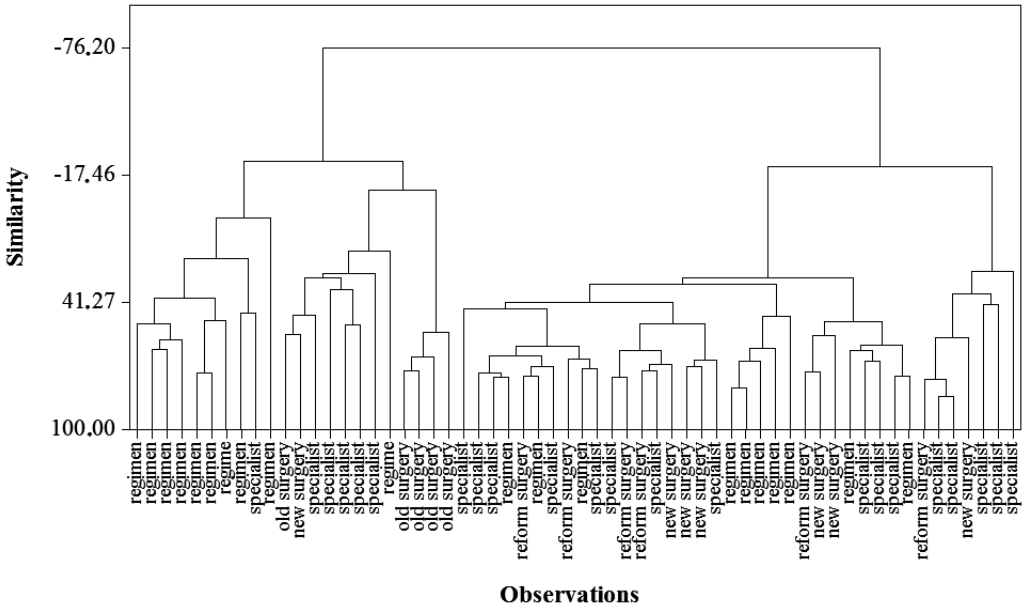

Figure 3. Clustering of all texts by type, 250 MFW, non-topical

At first glance, the clustering looks more or less similar to what was seen when the lexical range was greater. Old surgical texts (A1) cluster together as before, while the A2s and A3s blend in with sub-corpora B and C. Only one A1 text stands at a distance from the others: Braunschweig's *Handy Werke of Surgeri* (1525). Interestingly, and somewhat inexplicably, it clusters with Bonham (1630) and another early text, *Seynge of uryns* by an unknown author. While the similarity between the two early sixteenth-century texts is to be expected, it is much more difficult to see what would make Bonham's surgical treatise from almost a century later so similar to them. There are two distinct clusters of regimen texts and several smaller clusters of specialised treatises.

Another very useful aspect of cluster analysis is made evident if we look at the case of texts written by the same author (see Figure 4). The text selection has five such authors: Joannes Mediolano, Andrew Boorde, William Bullein, Thomas Gale and William Clowes. With the exception of Mediolano and Gale, texts by these authors cluster either right next to each other and nearby, suggesting that each author had a distinct style. For example, all three texts by William Clowes—*Booke of Obseruations* (1596), *Lves Venerea* (1596) and *Cure of Struma* (1602)—cluster together showing very high similarity, despite belonging to different extralinguistic categories in the corpus. This suggests that Clowes had a very distinct and established style of writing. Although the length of the extracts in EMEMT rules out the systematic use of the cluster method for authorship attribution, it seems that at least anecdotal use can be derived for that purpose as well.

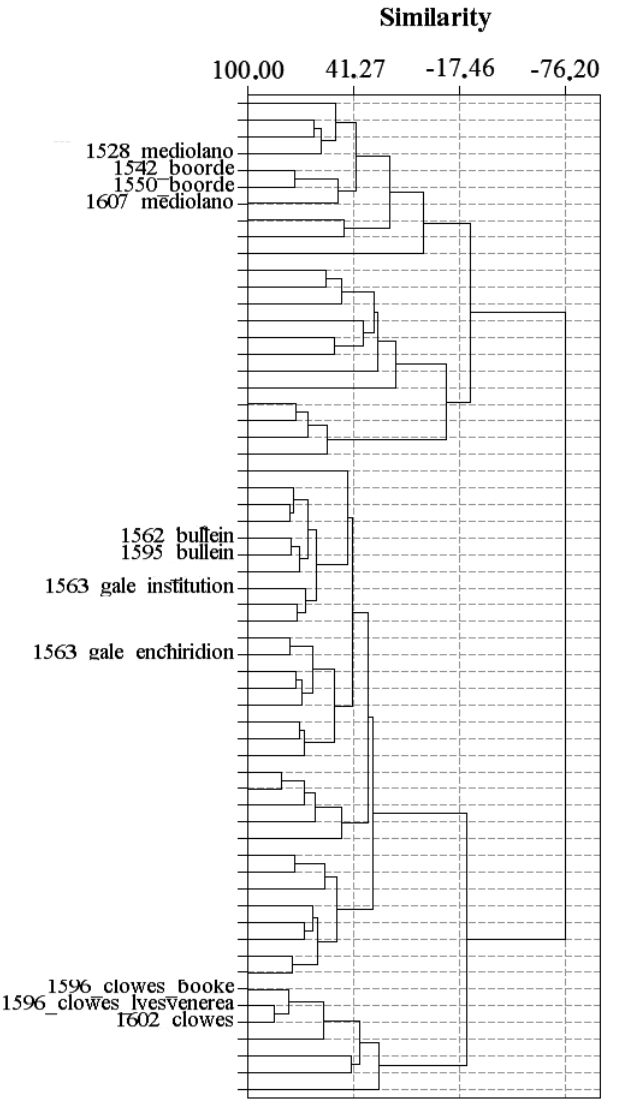

Figure 4. Clustering of Gale and Clowes, 250 MFW, non-topical

There are two exceptions to this phenomenon, Mediolano and Gale, and in both cases the reasons are quite obvious. The two books by Mediolano, *Regimen sanitatis Salerni* (1528) and *Schoole of Salerne* (1607), are both translations of medieval treatises by Joannes de Mediolano, a twelfth century Italian physician, the first translated by Thomas Paynell and the second by Sir John Harington. Given the nearly 80 years between the translations, the similarity, although weaker than what we saw with the other texts above, can be regarded as surprisingly strong. In the case of Gale, although both extracts come from *Certaine workes of chirurgerie*, his magnum opus of surgical knowledge, the statistical analysis shows that the similarity between *Enchiridion of Chirurgery* (1563) and *Institution of a Chirurgeon* (1563) in more or less equal to what is seen between the two texts by Mediolano. In this case, the clustering provides support for the argument by Furdell that Gale did not write and translate all the texts himself, but rather had them prepared by younger colleagues at the Company (2002:20). A similar study carried out with part-of-speech distributions also supports this view, with Gale's texts being among the very few cases where multiple texts by one author did not cluster together (Tyrkkö submitted b).

6. Conclusions

Do these results tell us something we did not already know? I believe they do. The analysis focused on two layers of the lexicon: all words and non-topical words. The most important discovery was that surgical texts printed prior to 1550 differed both from surgical texts printed thereafter, and from other contemporary medical texts. Although closer analysis would be necessary to identify the specific features that underwent a change, the initial impression is that a stylistic sea-change did indeed take place in surgical writing immediately following the creation of the Company of Barber-Surgeons.[29] However, the analysis also shows that the style adopted by the surgical reformers did not stand out either from subsequent surgical texts or from contemporary medical writing. In fact, on the basis of this admittedly precursory study, there does not appear to be a specific surgical style at all after about 1560, but instead surgical writing blended in with the style employed by physicians and authors writing for the general public.

On a more general level, the analysis demonstrated that hierarchical cluster analysis can be useful in the analysis of genre-related lexical patterns in historical corpora and as an aid to authorship attribution. The main challenges concern the requirement to standardize spelling variants and the need to have access to sufficiently long samples of text, both of which can be problematic particularly with earlier variaties. The same method can be successfully applied to part-of-speech distributions as well as lexical data, with the findings suggesting that word-class profiles can be even more effective than lexical distributions for authorship attribution (Tyrkkö submitted b). The main benefit of these statistical approaches is their data-driven nature, which can complement a more philological style of analysis by helping us identify similarities and outliers we might otherwise miss, possibly even suggesting new and exciting directions for further research.

References

Primary references (short titles, each category in chronological order; see Taavitsainen et al. 2010)

Surgical texts[30]

M Hieronymus Braunschweig, Handy warke of surgeri (1525), STC 13434
M Johannes de Vigo, Most excellent workes of chirurgerye (1543) STC 24720
M Thomas Geminus, Compendiosa totius anatomie delineatio (1553), STC 11716
R William Bullein, Bulleins bulwarke (1562), STC 4033
R Thomas Gale, Enchiridion of chirurgerie (1563), STC 11529
R Thomas Gale, Institution of a chirurgian (1563), STC 11529
R John Banister, Treatise of chyrurgerie (1575), STC 1360
M Thomas Vicary, Anatomie of mans body (1577), STC 24713
R John Banister, Historie of man (1578), STC 1359
M Guy de Chauliac, Gvydos qvestions (1579), STC 12469
R William Clowes, Booke of obseruations (1596), STC 5445.5
Jacques Guillemeau, Frenche chirurgerye (1597), STC 12498
Peter Lowe, Whole art of chyrvrgerie (1612), STC 16870
Helkiah Crooke, Mikrokosmografia (1615), STC 6062
John Woodall, Svrgions mate (1617), STC 25962
Thomas Bonham, Chyrvrgians closet (1630), STC 3279
Ambrose Pare, Workes of Ambrose Parey (1634), STC 19189
Alexander Read, Workes of that famous physitian (1650), Wing R425
John Brugis, Vade Mecum (1651), Wing B5225

[29] Some aspects of this change may be explained by developments in printing practices, which show very clear and even dramatic developments in the latter half of the sixteenth century. See Tyrkkö (submitted a).

[30] M indicates that the text carries on the late medieval tradition, R that the text belongs to the reform movement.

Specialised texts

Anonymous, Seynge of uryns (1525), STC 22153
Thomas Moulton, Myrrour or glasse of helth, astrology (1539), not listed in STC
Robert Recorde, Vrinal of physick (1547), STC 20816
John Caius, Against sweatyng sicknesse (1552), STC 4343
Bartholomeus Cocles, Epitomye of phisiognomie (1556), STC 5468
Conrad Gesner, Treasure of Evonymvs (1559), STC 11800
William Turner, Booke of bathes (1562), STC 24366
John Jones, Dial for all agves (1566), STC 14726
Timothy Bright, Treatise of melancholy (1586), STC 3747
William Clowes, Lves venerea (1596), STC 5445.5
John Hester, Key of philosophie (1596), STC 19181.7
George Wateson, Cvres of the diseased (1598), STC 25106
Andreas Laurentius, Preservation of sight (1599), STC 7304
Simon Harward, Phlebotomy (1601), STC 12922
William Clowes, Cure of struma (1602), STC 5446
John Fage, Speculum aegrotorum (1606), STC 10665
Walter Bailey, Preseruation of eie-sight (1616), STC 1196
Robert Burton, Anatomy of melancholy (1621), STC 4159
George Simotta, Planetary hovres (1631), STC 22561
Philemon Holland, Gutta podagrica (1633), STC 12539
Thomas Brian, Pisse-prophet (1637), STC 3723

Regimens and health guides

John Lydgate, Gouernall of helthe (1506), STC 12139
Anonymous, Secrete of secretes (1528), STC 770
Joannes de Mediolano, Regimen sanitatis Salerni (1528), STC 21596
Ptolemy, Compost of Ptholomeus (1540), STC 20480a
Sir Thomas Elyot, Castel of helth (1541), STC 7644
Andrew Boorde, Dyetary of Helth (1542), STC 3378.5
Andrew Boorde, Breuiary of helthe (1547), STC 3373.5
Andrew Boorde, Boke for to lerne a man (1550?), STC 3373
Philip Moore, Hope of health (1565), STC 18060
Guglielmo Gratarolo, Health of magistrates and studentes (1574), STC 12193a
Richard Mulcaster, Training vp of children (1581), STC 18253a
Thomas Cogan, Haven of health (1588), STC 1588
William Bullein, Gouernement of health (1595), STC 4042
James Manning, Complexions castle (1604), STC 17257
Joannes de Mediolano, Schoole of Salerne (1607), STC 21605
Tobias Venner, Via recta ad vitam longam (1620), STC 24643
Francis Bacon, Of regiment of health (1625), STC 1148
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